

Models for Science and Research and ,Best Practice‘

Thoughts and facts about research scenarios

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Europäisches Forum Alpbach

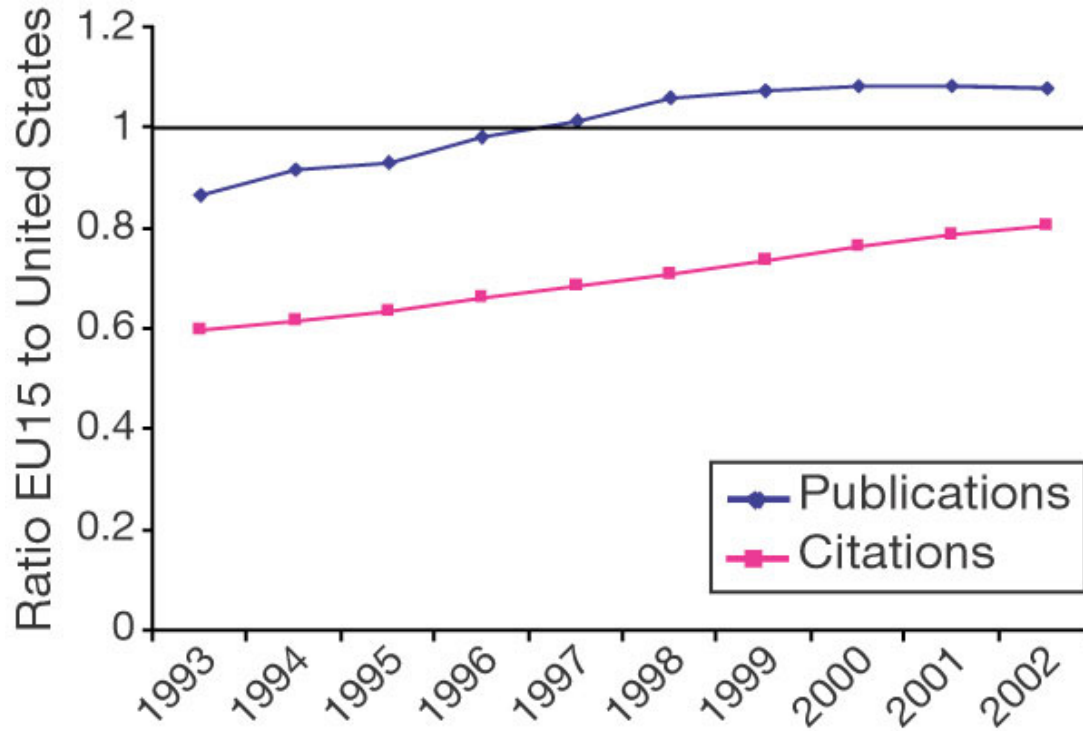
Technologieggespräche, 24.– 26.08.2006

Three questions concerning current science and research:

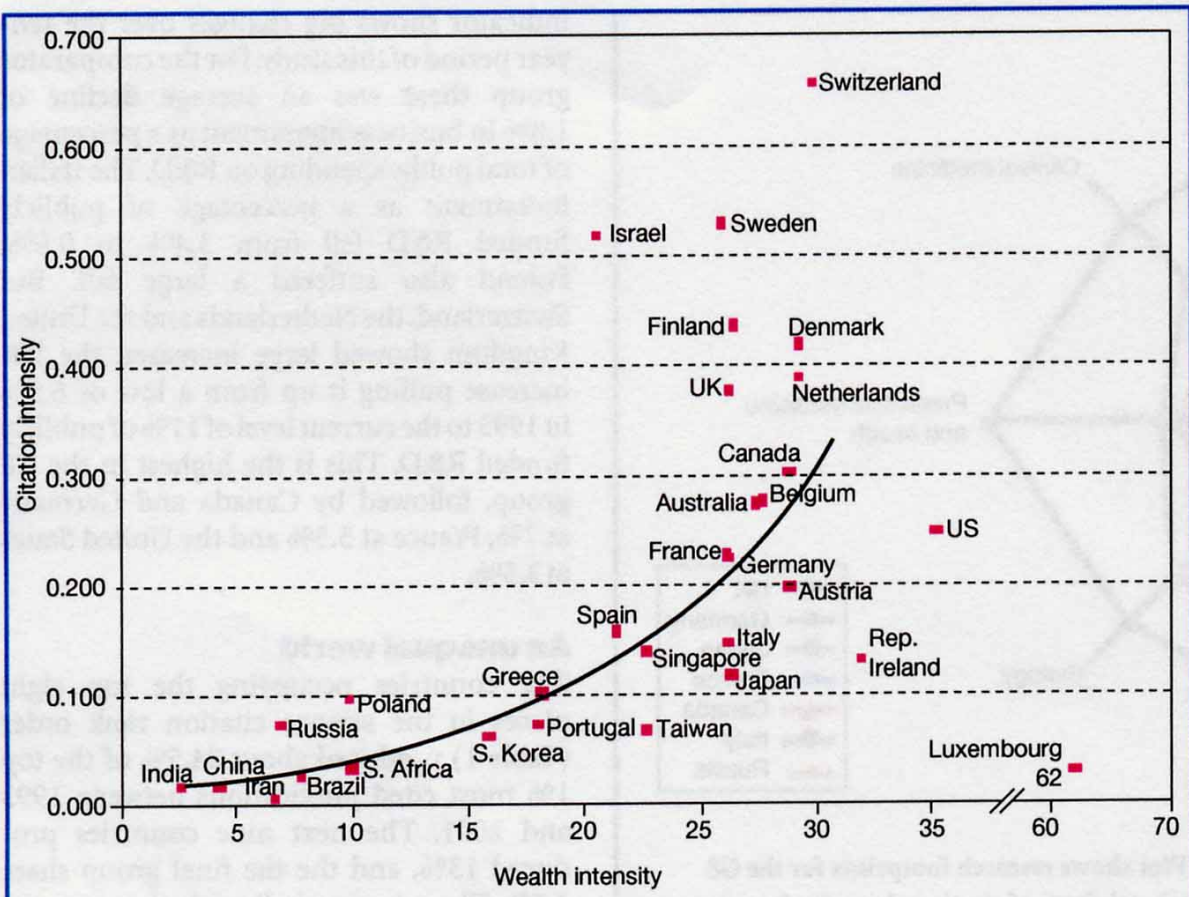
1. What is the price of scientific results in different countries?
2. How do research institutes compare with university research?
3. How can young people be attracted by science and research?

Country	Year	Public financial support (% GDP)
Israel	1996	2.90
	2002	5.11
Sweden	1997	3.54
	2001	4.27
Finland	1996	2.54
	2002	3.46
Japan	1996	2.76
	2002	3.11
Iceland	1997	1.88
	2002	3.11
USA	1996	2.55
	2002	2.67
Switzerland	1996	2.73
	2000	2.63
Germany	1996	2.28
	2002	2.64
Denmark	1996	1.85
	2002	2.51
Belgium	1996	1.80
	2002	2.23
Austria	1996	1.60
	2002	2.21

Governmental expenses for
research and development
in percentage of GDP



King, D.A. The scientific impact of nations. What different countries get for their research spending. *Nature* **430**:311-316, 2004.



GDP = gross domestic product
 wealth intensity = GDP/person
 citation intensity = #citations/GDP

Figure 2 Comparing economic and scientific wealth. National science citation intensity, measured as the ratio of the citations to all papers to the national GDP, shown as a function of the national wealth intensity, or GDP per person, for the 31 nations in the comparator group. GDP and wealth intensity are given in thousands of US dollars at 1995 purchasing-power parity. Sources: Thomson ISI, OECD and the World Bank.

King, D.A. The scientific impact of nations. What different countries get for their research spending. *Nature* **430**:311-316, 2004.

J. Rogers Hollingsworth:

„The optimal environment for great innovation and scientific break-through is characterized by

1. a maximum of flexibility without hindrance by hierarchical structures,
2. a maximum of independence of researchers and strong encouragement for risky projects, and
3. a large variety of different cultural backgrounds of the researchers.“

J.R. Hollingsworth. Institutionalizing Excellence in Biomedical Research: The case of The Rockefeller University. In: D.H. Stapelton, ed. *Creating a Tradition of Biomedical Research. Contributions to the History of The Rockefeller University*. The Rockefeller University Press, pp.17-63, New York 2004. See also the interview with Hollingsworth in *Heureka* 1/06.

J. Rogers Hollingsworth:

„The more functions an individual or an organization tries to fulfill, the more unlikely it is to achieve excellence in all or in only one even. Scientist who teach a lot have less time for research.“

J.R. Hollingsworth. Institutionalizing Excellence in Biomedical Research: The case of The Rockefeller University. In: D.H. Stapelton, ed. *Creating a Tradition of Biomedical Research. Contributions to the History of The Rockefeller University*. The Rockefeller University Press, pp.17-63, New York 2004. See also the interview with Hollingsworth in *Heureka* 1/06.

**Anzahl der Publikationen mit österr. Beteiligung
in „Nature“ und „Science“ seit 2000 (gesamt: 153)**

1. Universität Wien*	38
2. Universität Innsbruck*	27
3. Österreichische Akademie der Wissenschaften	24
4. Forschungsinst. für Molek. Pathologie Wien (IMP)	16
5. Technische Universität Wien	13
6. Int. Institut für angewandte Systemanalyse (IIASA)	8
7. Medizinische Universität Wien**	7

* bis Ende 2003 inklusive der Medizinischen Fakultät, ** seit 1.1.2004

Die Besten bei den Drittmitteln	FWF-Mittel pro Mitarbeiter	FWF-Mittel in Mio. Euro	Anzahl der Mitarbeiter
1. Universität Innsbruck	€ 17.948	10,60	591
2. Universität für Bodenkultur Wien	€ 14.893	4,87	327
3. Universität Graz	€ 13.723	8,67	632
4. Medizinische Universität Innsbruck	€ 12.576	5,82	463
5. Universität Salzburg	€ 12.192	6,19	508
6. Universität Wien	€ 11.314	18,24	1612
7. Technische Universität Wien	€ 11.101	10,02	903
8. Universität Linz	€ 8940	4,47	500
(Akademie der Wissenschaften)	€ 8776	7,46	850)
9. Veterinärmedizinische Universität Wien	€ 8739	1,94	222
10. Technische Universität Graz	€ 8126	5,29	651
11. Medizinische Universität Wien	€ 8051	12,39	1539
12. Montanuniversität Leoben	€ 4831	0,86	178
13. Wirtschaftsuniversität Wien	€ 2114	0,72	434
14. Universität Klagenfurt	€ 2114	0,48	227
Rangliste der österreichischen Universitäten nach bewilligten Drittmitteln beim Wissenschaftsfonds FWF für das Jahr 2005 / Quelle: FWF, bmbwbk, eigene Berechnungen			

Comparison ÖAW and MPG

ÖAW: 1 100 coworkers in 28 institutes
 80 Mio EUR annual budget

MPG: 21 100 coworkers in 80 institutes
 1 300 Mio EUR annual budget

The number of coworkers counts employees, doctoral students, post-docs and guest scientists.

Web-Page for further information:

<http://www.tbi.univie.ac.at/~pks>

