



Augstākā izglītība, zinātne, ekonomika



Mārcis Auziņš
Latvijas Universitāte,
2011. gada 2. februāris



- **Zinātnes, gan fundamentālās, gan
lietišķās, attīstība ir vitāli svarīga
valsts un sabiedrības attīstībai**
- **Sociālo un humanitāro zinātņu loma
valsts attīstībā**



Atdeve no zinātnes



What science is really worth

Spending on science is one of the best ways to generate jobs and economic growth, say research advocates. But as **Colin Macilwain** reports, the evidence behind such claims is patchy.



ESTIMATES OF RATE OF RETURN ON PUBLIC RESEARCH & DEVELOPMENT INVESTMENT

Year of study	Subject	Annual rate of return (%)
1958	Hybrid corn	20-40
1967	Poultry	21-25
1979	Tomato harvester	37-46
1968	Agricultural research	35-40
1968	Agricultural research	28-47
1979	Agricultural research	37
1979	Agricultural research	45
1981	Agricultural research	37
1991	All academic science research	28
1993	Agricultural research	43-67
2000	Pharmaceuticals	30+

SOURCE: *Rising Above the Gathering Storm* (National Academies, 2006); Scott, G. et al. *The Economic Returns of Basic Research and the Benefits of University-Industry Relationships* Science and Technology Policy Research (Univ. Sussex, 2001).



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RISING ABOVE THE GATHERING STORM

*Energizing and
Employing America
for a Brighter
Economic Future*

RISING ABOVE THE GATHERING STORM

Energizing and Employing America for a Brighter Economic Future

NAS, Publication Year: 2007



The committee found that multinational companies use criteria [3] such as the following in determining where to locate their facilities and the jobs that result:

- **Cost of labor (professional and general workforce).**
- **Availability and cost of capital.**
- **Availability and quality of research and innovation talent.**
- **Availability of qualified workforce.**
- **Taxation environment.**
- **Indirect costs (litigation, employee benefits such as healthcare, pensions, vacations).**
- **Quality of research universities.**
- **Convenience of transportation and communication (including language).**
- **Fraction of national research and development supported by government.**
- **Legal-judicial system (business integrity, property rights, contract sanctity, patent protection).**
- **Current and potential growth of domestic market.**
- **Attractiveness as place to live for employees.**
- **Effectiveness of national economic system.**

[3] Chris Noon. 2005. "Starbuck's Schultz Bemoans Health Care Costs." Forbes.com, September 19. Available at: http://www.forbes.com/facesinthenews/2005/09/15/starbuckshealthcarebenefitscx_cn_0915autofacescan01.html?partner=yahooti; Ron Scherer. 2005. "Rising Benefits Burden." Christian Science Monitor, June 9. Available at: <http://www.csmonitor.com/2005/0609/p01s01-usec.html>.



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Zinātne Eiropā



EUROPEAN COMMISSION

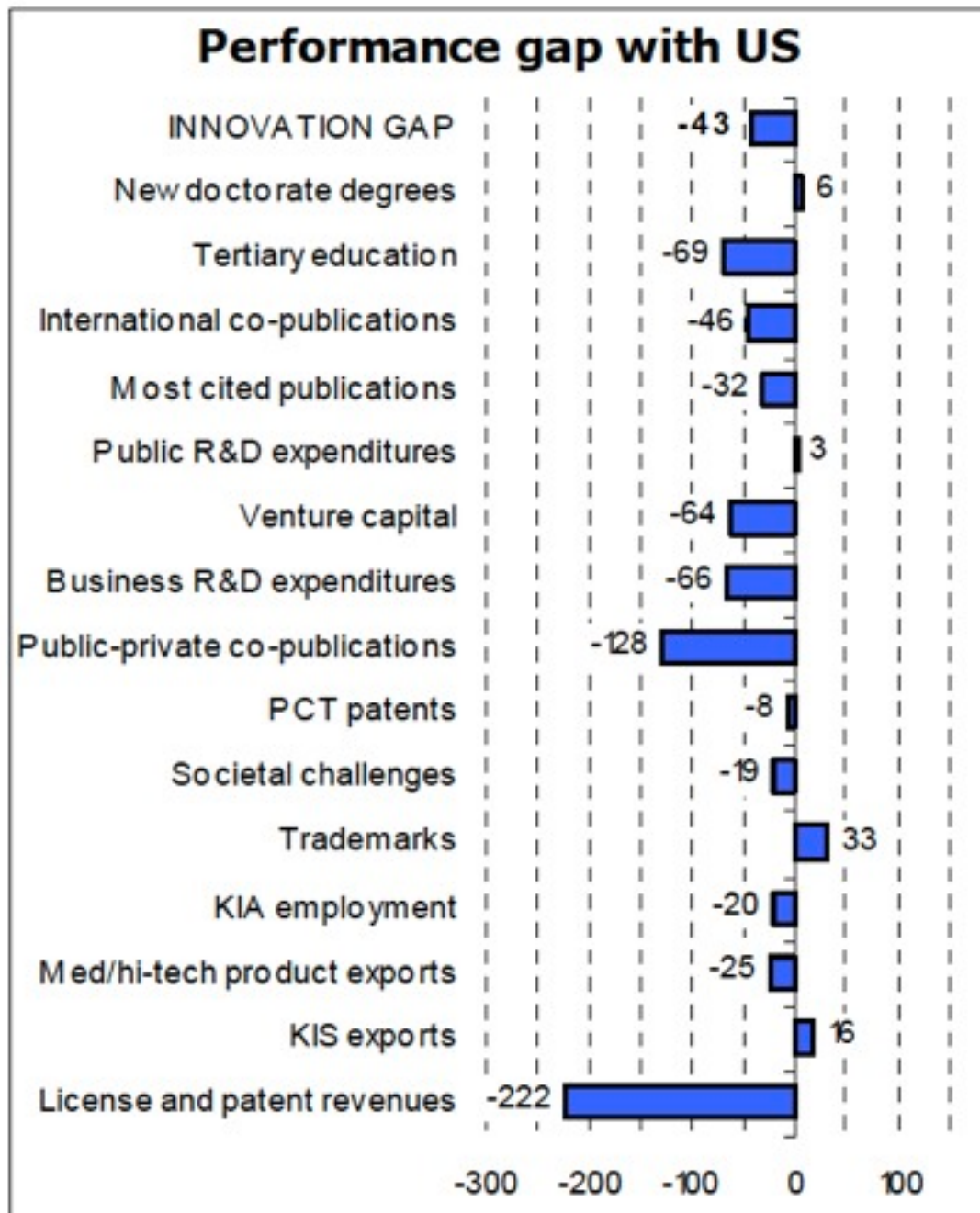
Brussels, 6.10.2010 COM(2010) 546 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Europe 2020 Flagship Initiative Innovation Union

SEC(2010) 1161

Eiropas Savienība salīdzinājumā ar ASV



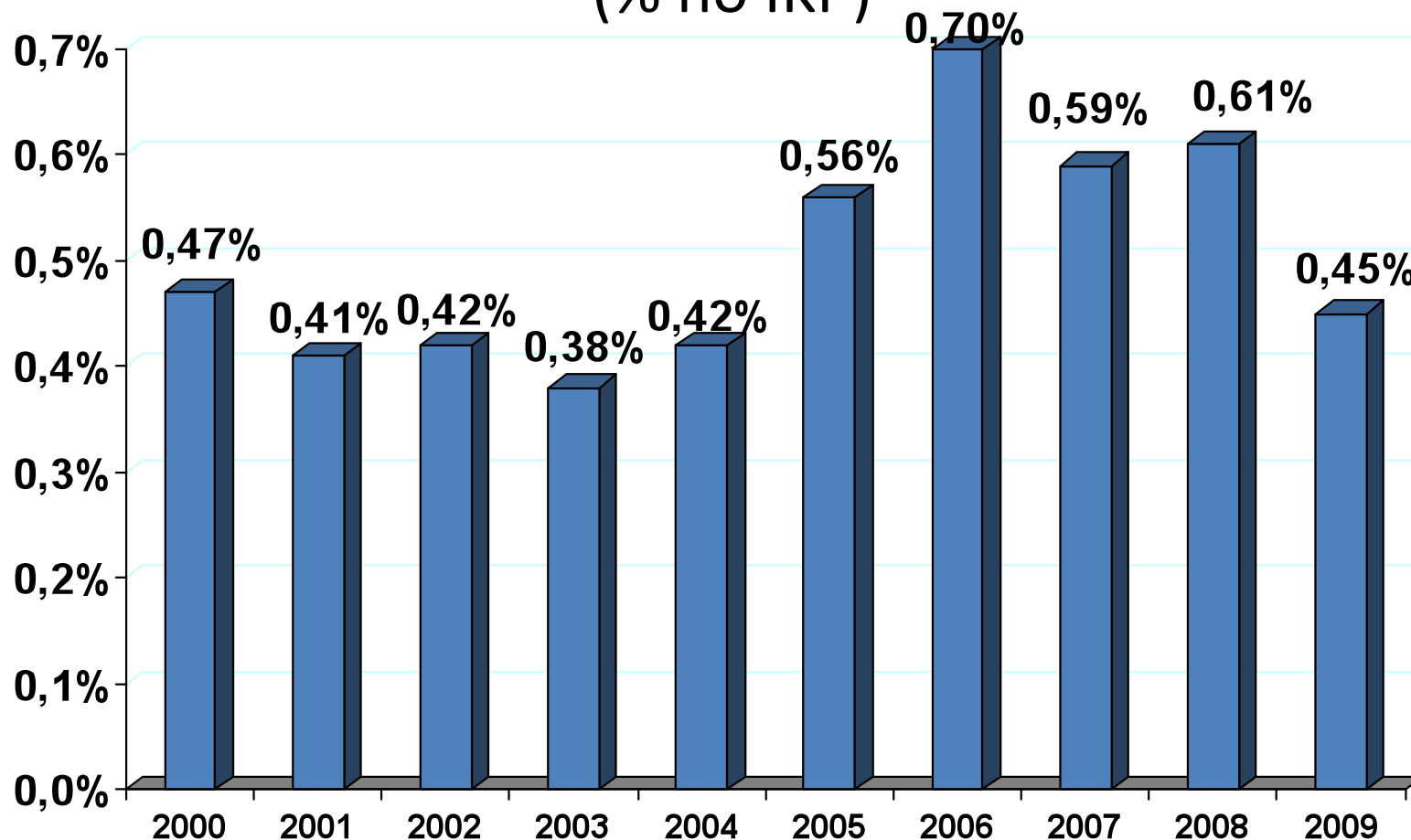


Zinātne Latvijā



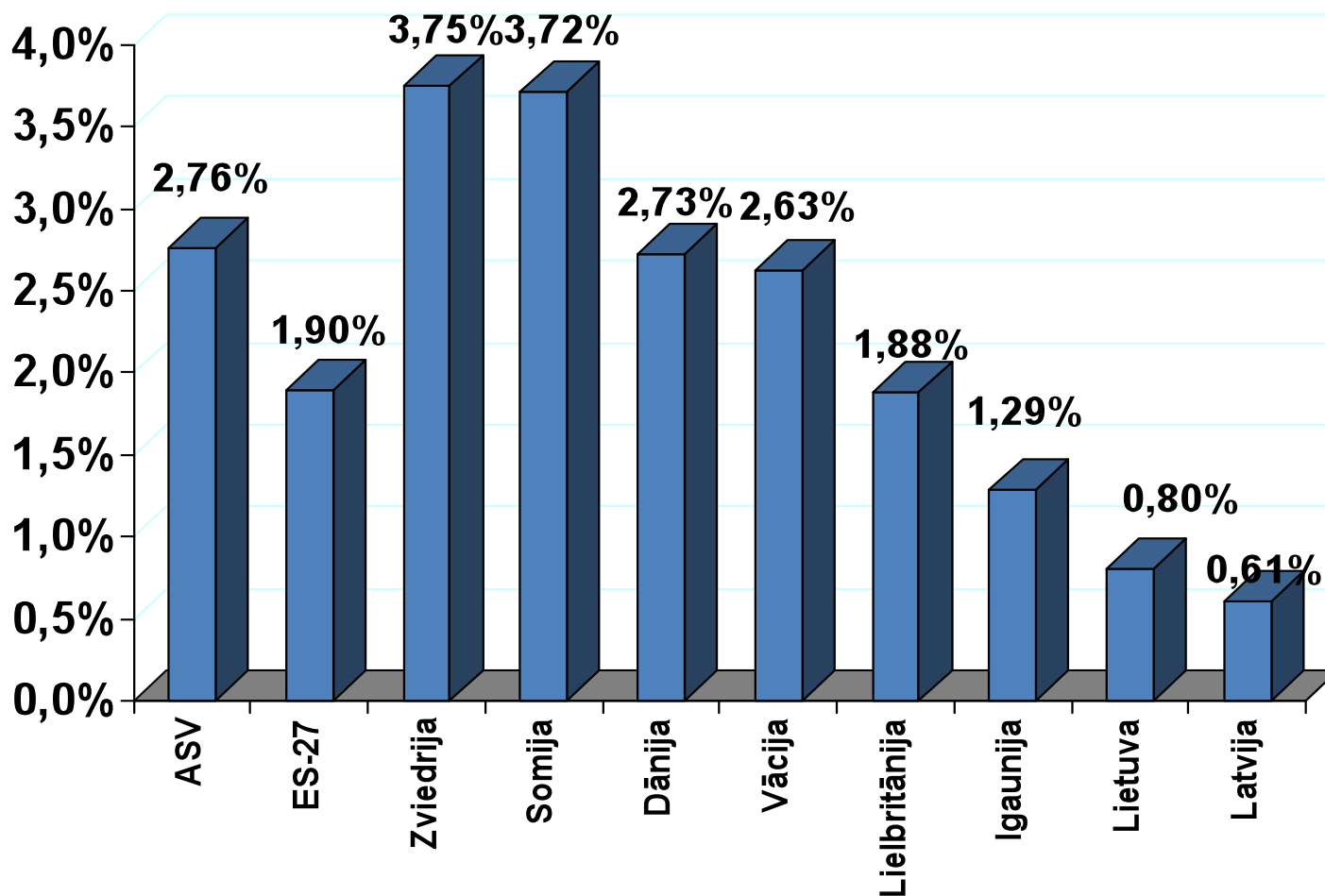
P&A finansējuma intensitāte

(% no IKP)



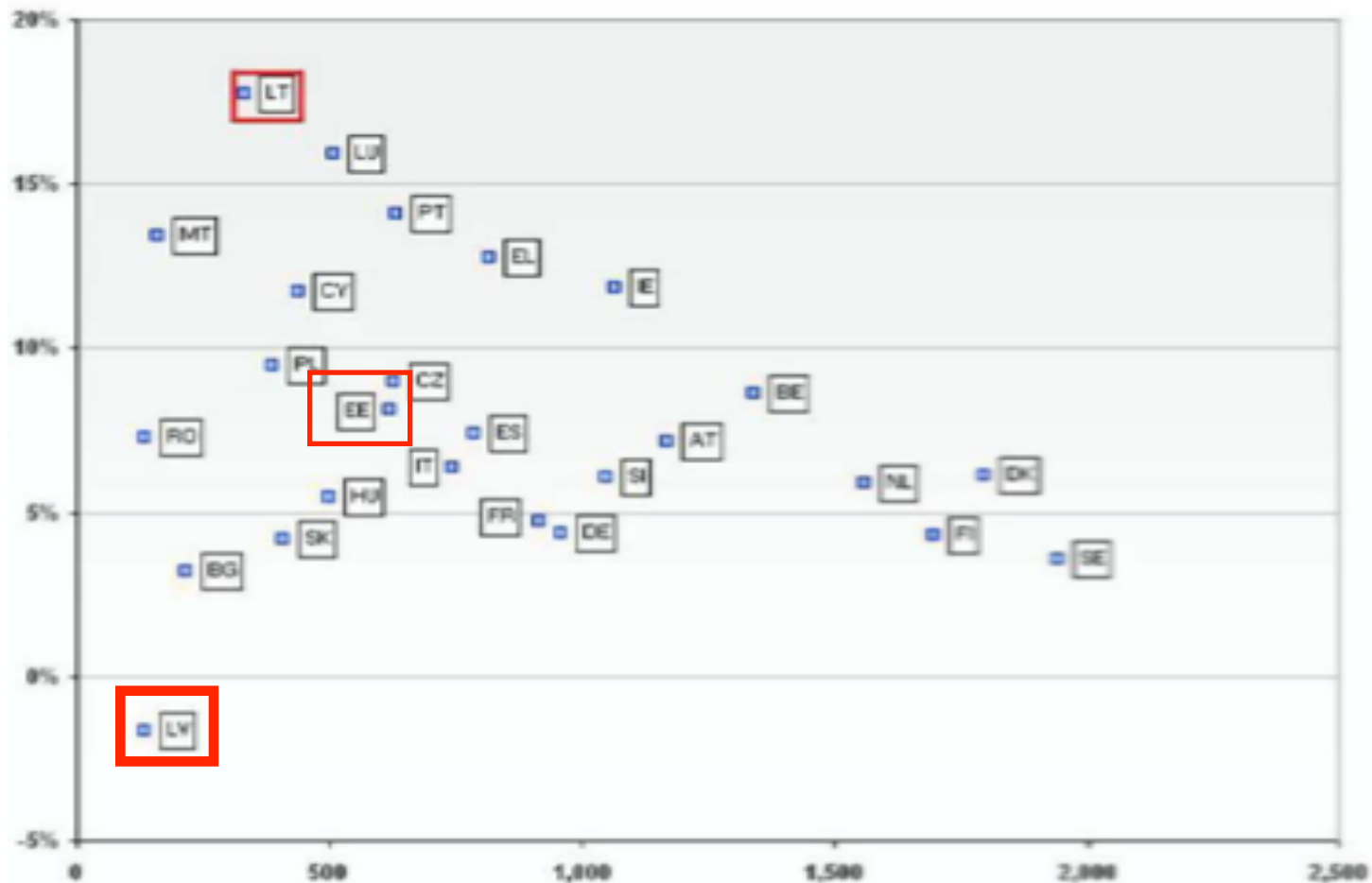


P&A finansējuma intensitāte atsevišķās ES-27 dalībvalstīs 2008.gadā (% no IKP)



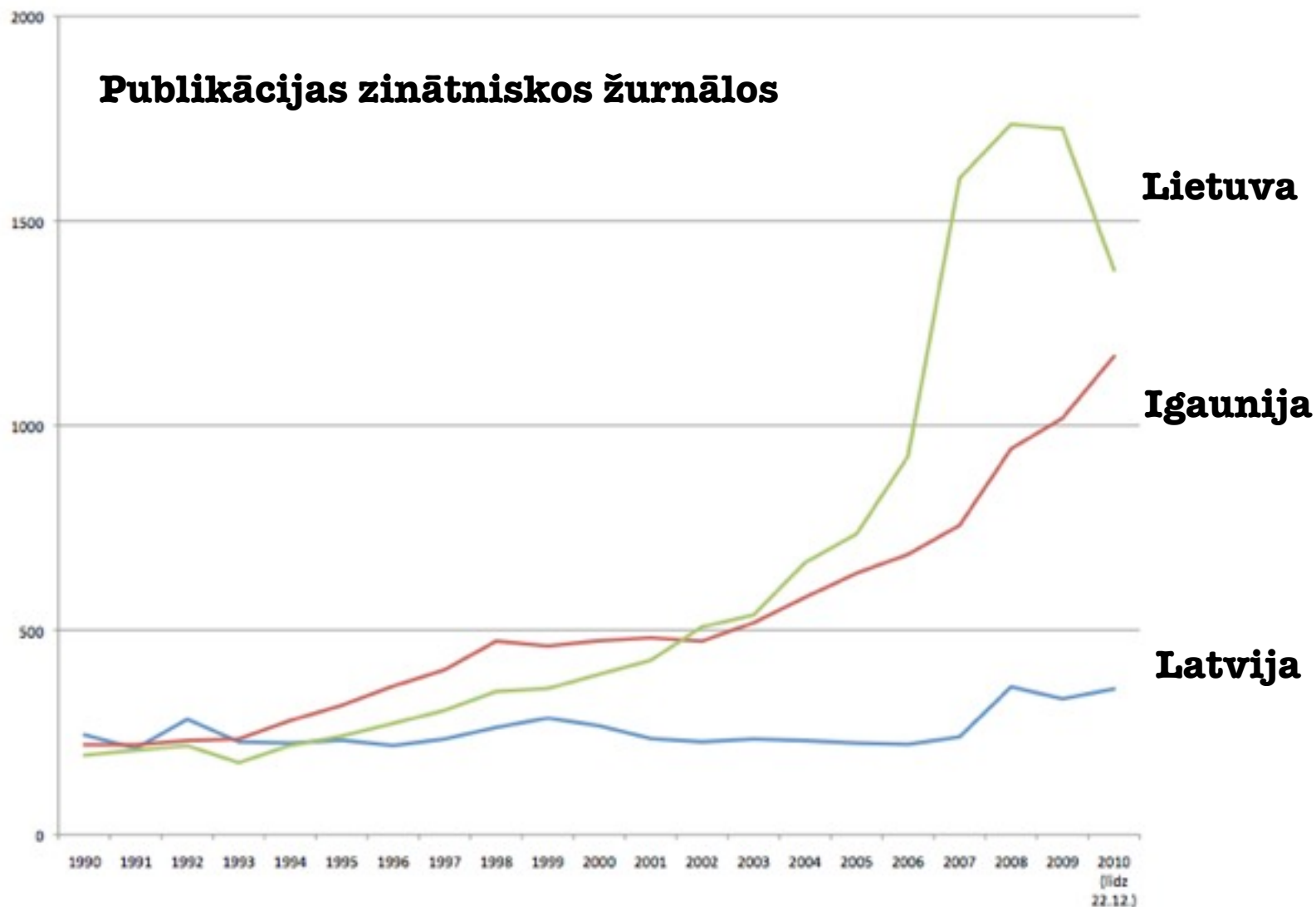


Izmaiņas SCI publikācijās 2000-2006





Publikācijas zinātniskos žurnālos





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Ko darīt?



FOREIGN
AFFAIRS

Published by the Council on Foreign Relations

May/June 2010

ESSAY

Top of the Class

The Rise of Asia's Universities

Richard C. Levin

RICHARD C. LEVIN is President of Yale University.



Manuscripts Division of Technology

VANNEVAR BUSH

science

the endless frontier

A report to the President on a
Program for Postwar Scientific Research

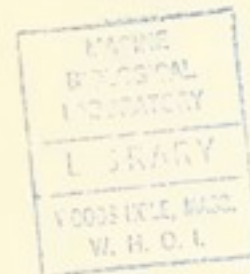
By Vannevar Bush

Director of the
Office of Scientific Research and Development

July 1945

Reprinted July 1960

National Science Foundation Washington, D. C.



1945 report by Vannevar Bush, then the science adviser to U.S. President Harry Truman



Not every university can or needs to be world class. The experiences of the United States, the United Kingdom, and Germany are instructive.

In the United States and the United Kingdom, higher education is a differentiated system of many types of institutions, of which the comprehensive research university is merely one. And within the group of comprehensive universities, government support for research is allocated chiefly on the basis of merit, which allows some institutions to prosper while others lag behind. In the United States, fundraising reinforces this differentiation. Success breeds success, and for the most part, the strongest institutions attract the most philanthropy. In Germany, by contrast, government policy since World War II has kept universities from maintaining their distinction. After the war, the government opened enrollment, allowed the student-faculty ratio to rise everywhere, isolated the most eminent researchers in separate institutes but otherwise distributed resources on the basis of equity rather than merit. In doing so, it destroyed the worldwide distinction Germany's best universities once held. Only recently has the government decided to focus its resources on three universities in particular, in order to make them more globally competitiv



THE WORLD UNIVERSITY RANKINGS



POWERED BY
THOMSON REUTERS

THE WORLD UNIVERSITY RANKINGS 2010

WORLD RANK ▾	INSTITUTION	COUNTRY / REGION	OVERALL SCORE change
1	Harvard University	United States	96.1
2	California Institute of Technology	United States	96.0
3	Massachusetts Institute of Technology	United States	95.6
4	Stanford University	United States	94.3
5	Princeton University	United States	94.2
6	University of Cambridge	United Kingdom	91.2
6	University of Oxford	United Kingdom	91.2
8	University of California Berkeley	United States	91.1
9	Imperial College London	United Kingdom	90.6
10	Yale University	United States	89.5



Bush's 1945 report established the framework for U.S. government support for scientific research. It was founded on three principles, which still govern today.

First, the federal government bears the primary responsibility for funding basic science.

Second, universities -- rather than government-run laboratories, nonteaching research institutions, or private companies -- are the primary institutions responsible for carrying out this government-funded research.

Third, although the government determines the total amount of funding available for different scientific fields, specific projects and programs are assessed not on political or commercial grounds but through an intensely competitive process of peer review, in which independent experts judge proposals on their scientific merit alone.



Venkatraman Ramakrishnan

Born: 1952, Chidambaram, Tamil Nadu, India

Affiliation at the time of the award: MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

Prize motivation: "for studies of the structure and function of the ribosome"

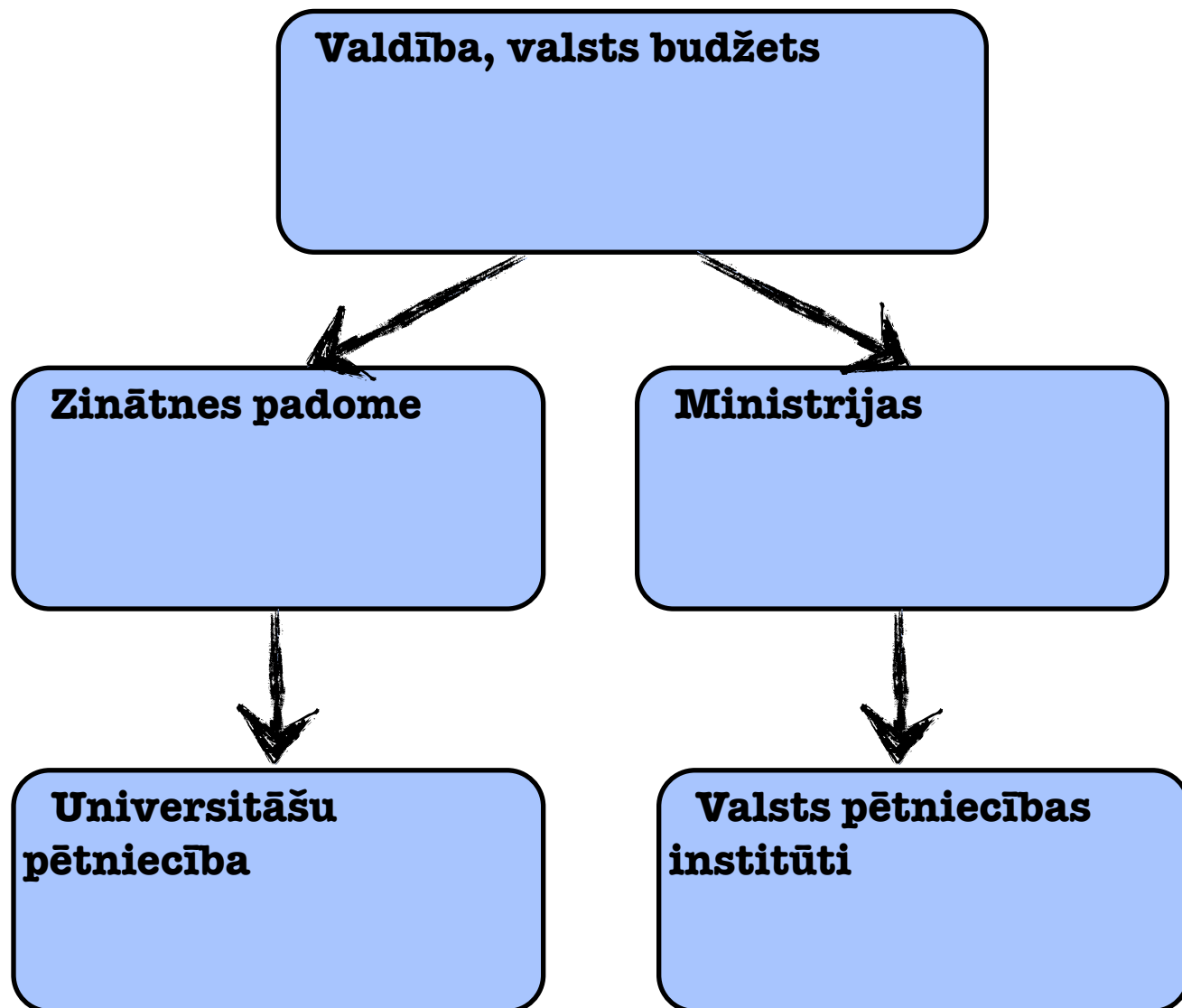
Field: Biochemistry, structural chemistry



Nobeļa prēmija ķīmijā 2009 Venkatramans Ramakrišna



Figure 5. Members of lab (1996–2009) who contributed to the ribosome structure work in the order in which they joined. Row 1: Bill Clemons, John McCutcheon, Brian Wimberly, Joanna May, Andrew Carter, Ditlev Brodersen, Robert Morgan-Warren. Row 2: Mike Tarry, James Ogle, Frank Murphy, Reynald Gillet, Maria Selmer, Ann Kelley, Tina Daviter. Row 3: Sabine Petry, Albert Weixlbaumer, Christine Dunham, John Weir, Lori Passmore, Martin Schmeing, Caj Neubauer. Row 4: Rebecca Voorhees, Hong Jin, Leong Ng, Yong-Gui Gao, Kathrin Lang and Israel Sanchez.

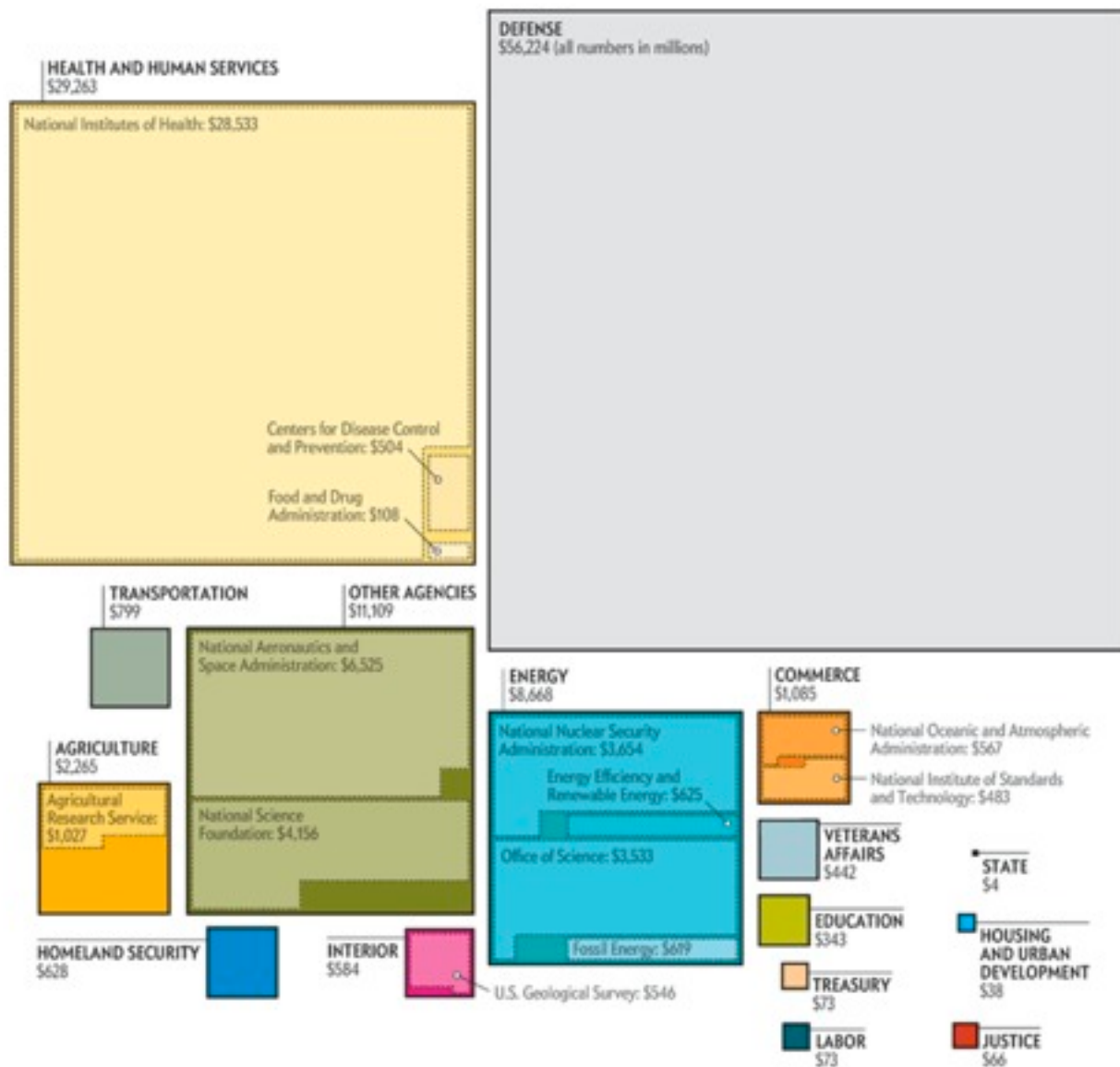




Money for Science: U.S. Funding over the Years

Federal R&D spending shows how government priorities stack up

January 4, 2011 | 13





Informatīvais ziņojums

**„Par nepieciešamajām strukturālajām reformām
augstākajā izglītībā un zinātnē Latvijas starptautiskās
konkurētspējas paaugstināšanai”**

**Pasākumu plāns nepieciešamajām reformām
augstākajā izglītībā un zinātnē 2010. – 2012.gadam**



- **Zinātniskās darbības finansēšanas jomā uz rezultātiem orientēts finansējuma modelis sekmīgi darbojas, nodrošinot valsts budžeta finansējuma sadalījumu**
- IZMzino_151210_IZ; Informatīvais ziņojums „Par uz rezultatīvajiem rādītājiem orientētu augstākās izglītības un zinātnes finansēšanas modeli”



SCIENCE
& TECHNOLOGY

ENERGY
SOURCES

ENERGY
EFFICIENCY

THE
ENVIRONMENT

PRICES
& TRENDS

NATIONAL
SECURITY

SAFETY
& HEALTH



Secretary Chu Hosts Online Town Hall

Earlier this week, Secretary Steven Chu hosted an online town hall to discuss President Obama's clean energy agenda and take questions from an audience of interested stakeholders and people following along online. If you missed it, you can catch a full replay of the event at energy.gov/livechat.

[Visit the Energy Blog](#)



the WHITE HOUSE PRESIDENT BARACK OBAMA ★ ★ ★ ★

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Carl Wieman accepts White House science post

Sep 27, 2010 12 comments



Carl Wieman starts a new job at the White House



[@Ojars_E_Kalnins](#)

**Labi pārvaldīta sabiedrība ir tāda, kurā mēs
kopīgi apzināmies patiesību par sevi, nevis
tāda, kurā mēs paši sev iestāstām patīkamus
melus**



twitter

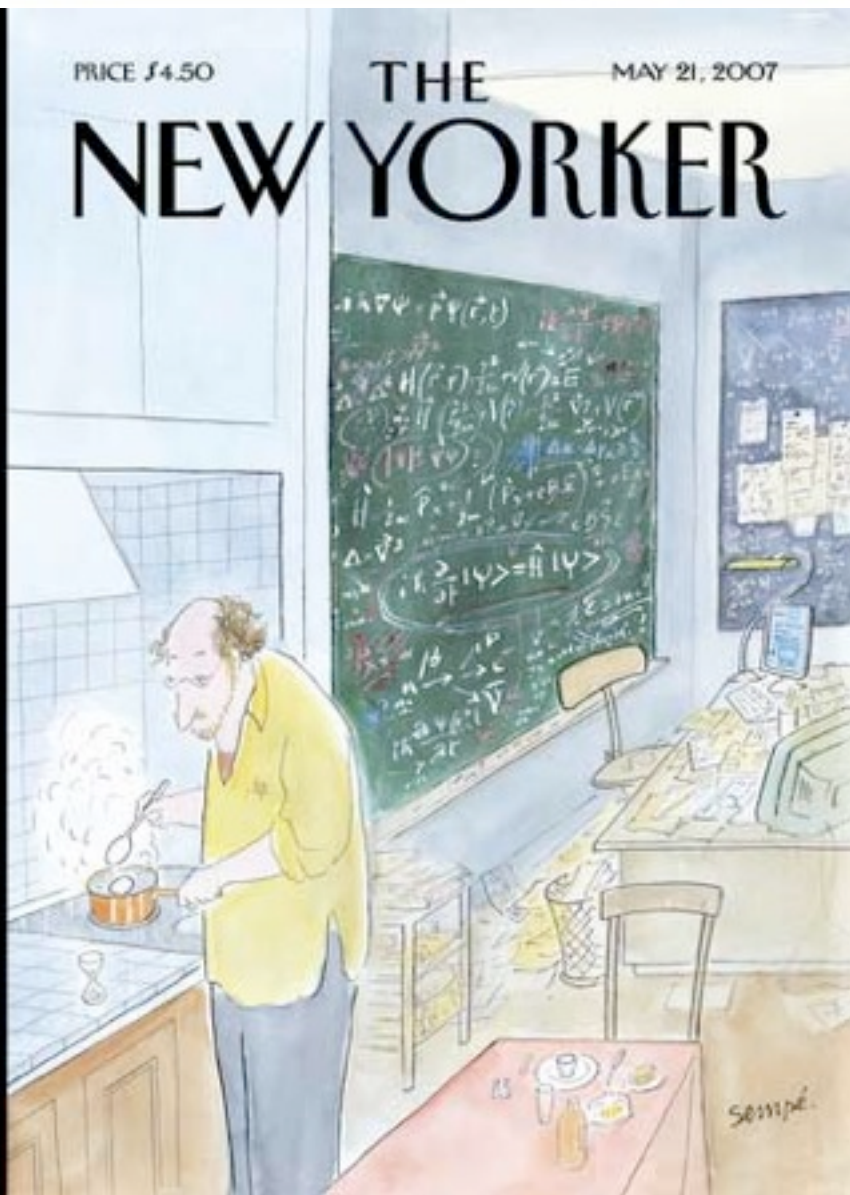


- Beroald Maria Golubeva

**Saving money by cutting science is
like losing weight by blowing your
brains out**



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happy?

END