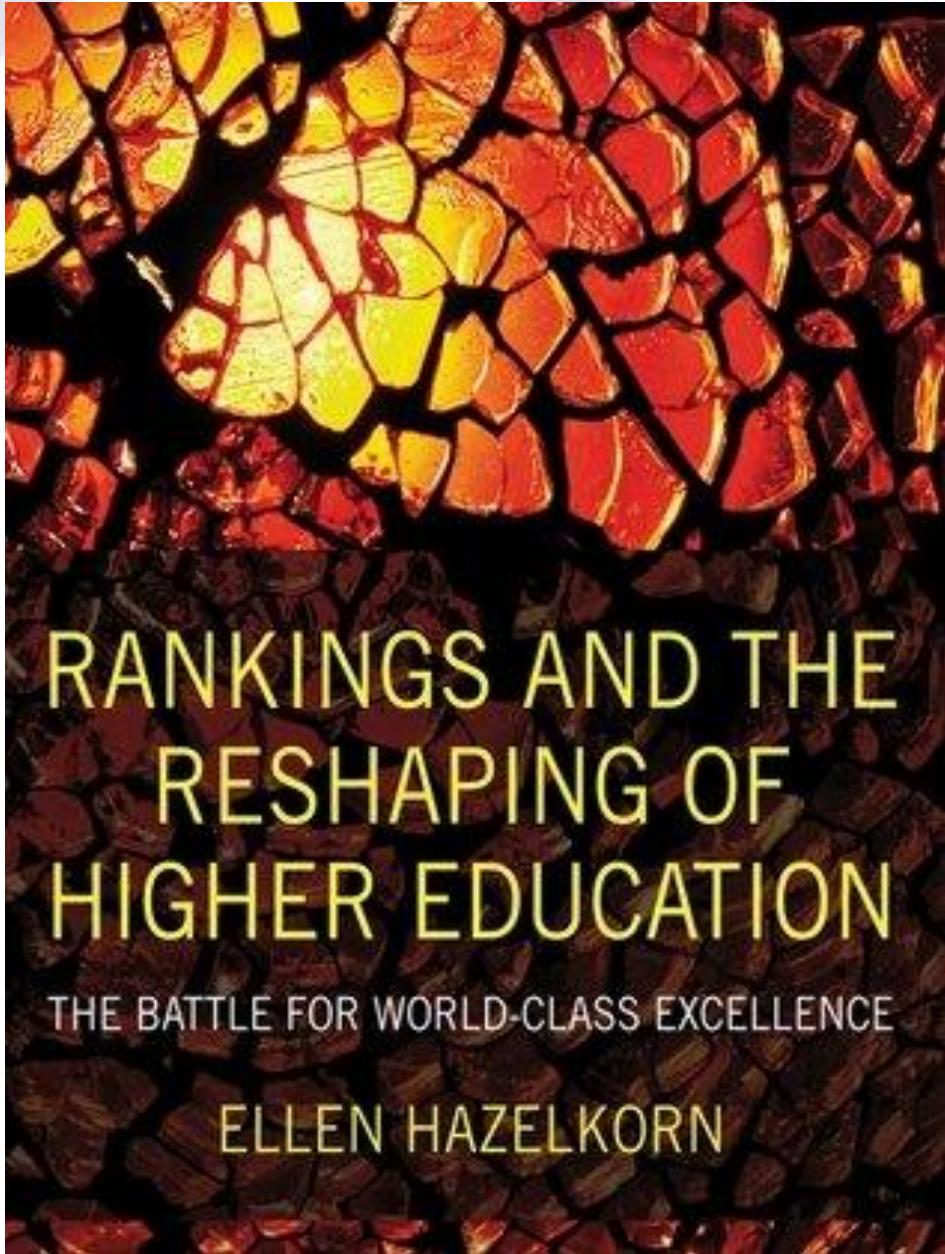


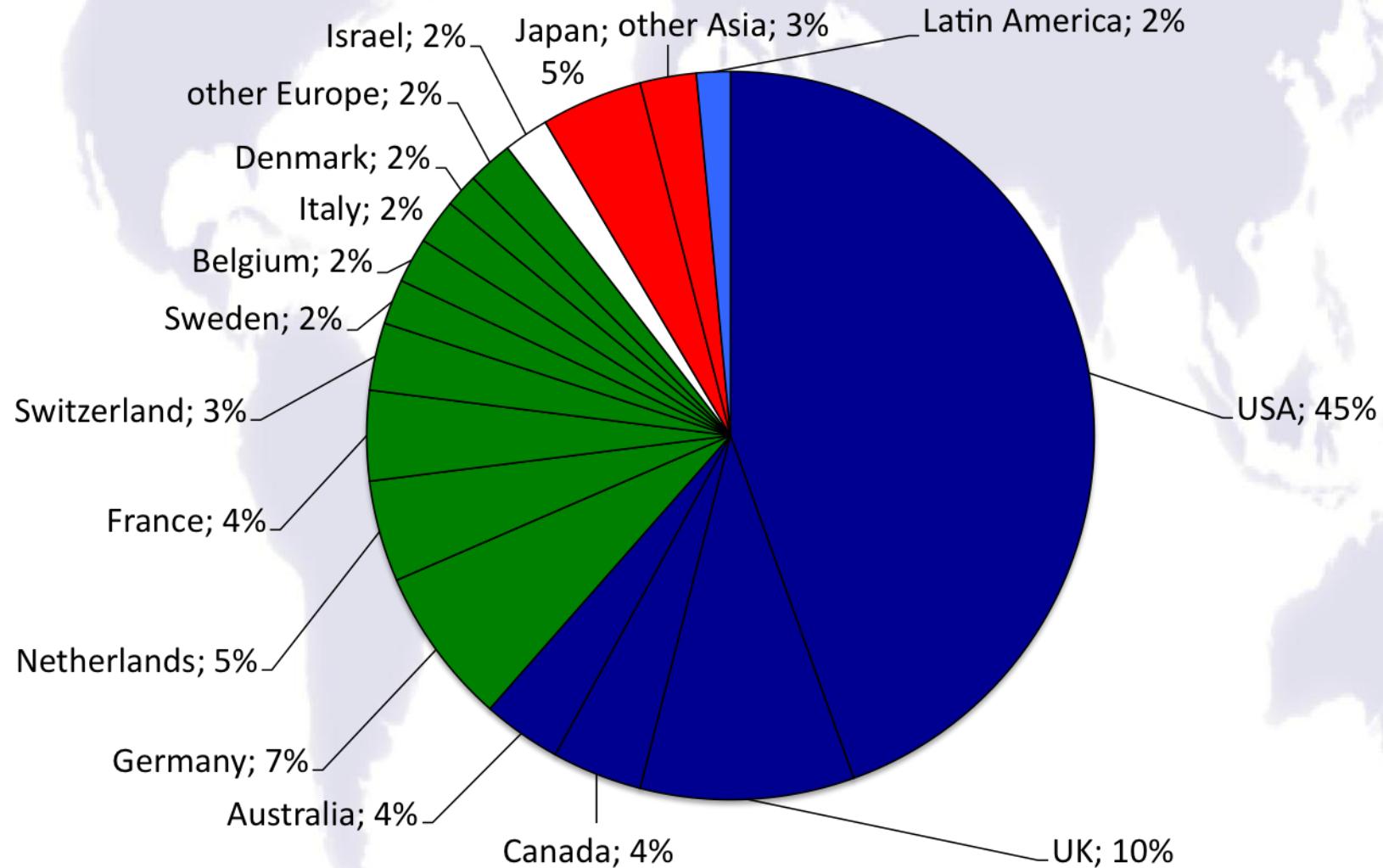
Las Universidades Latinoamericanas ante los Rankings Internacionales: Impactos, Alcances y Límites
17 y 18 de mayo de 2012

Global University Rankings: The strategic issues

Simon Marginson
Centre for the Study of Higher Education
University of Melbourne



Shanghai Jiao Tong top 200, 2011



Shanghai Jiao Tong ranking, 2005 & 2011

University		2005 rank	2011 rank
U Sao Paulo	BRAZIL	101-152	102-150
State U of Campinas	BRAZIL	203-300	201-300
Federal U of Minas Gerais	BRAZIL		301-400
Federal U of Rio de Janeiro	BRAZIL	301-400	301-400
Sao Paulo State U	BRAZIL	401-500	301-400
Federal U of Rio Grande do Sul	BRAZIL		401-500
Federal U of Sao Paulo	BRAZIL		401-500
UNAM	MEXICO	153-202	151-200
U Buenos Aires	ARGENTINA	203-300	151-200
Catholic U of Chile	CHILE		401-500
U Chile	CHILE	301-400	401-500

Leiden ranking, 2005-09 science papers

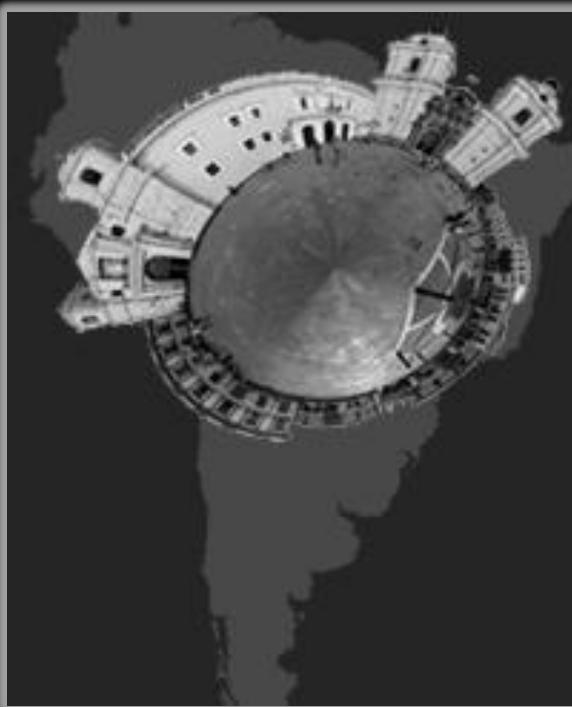
WR	University		total papers	citation s per paper	papers in top 10% field normed cites
8	U Sao Paulo	BRAZIL	15,486	3.81	5.4
78	UNAM	MEXICO	7440	3.62	4.5
148	State U of Campinas	BRAZIL	5632	3.57	5.6
198	Federal U of Rio de Janeiro	BRAZIL	4560	3.52	4.7
211	U Estadual Paulista	BRAZIL	4362	2.77	4.6
231	U Buenos Aires	ARGENTINA	4072	4.33	5.4
255	Federal U of Rio Grande do Sul	BRAZIL	3796	3.83	4.9
323	Federal U of Minas Gerais	BRAZIL	3050	3.71	5.7
364	U Chile	CHILE	2642	4.09	5.6
367	Federal U of Sao Paulo	BRAZIL	2632	3.96	3.9
472	U National La Plata	ARGENTINA	1884	3.09	4.6
486	Federal U Santa Catarina	BRAZIL	1731	3.82	6.8
495	Catholic U of Chile	CHILE	1638	4.80	6.7

Times Higher ranking 2011

University		2011 rank
U Sao Paulo	BRAZIL	178
State U of Campinas	BRAZIL	276-300
Catholic University of Chile	CHILE	351-400

NOTES

- U Sao Paulo was ranked 61-70 on the basis of the reputational surveys alone
- There were eight universities from Spain (highest Pompeu Fabra U 186) and four from Portugal (highest Aveiro U 301-350) in Times Higher top 400
- No Spanish or Portuguese speaking university was ranked in the Times Higher top 50 for any discipline area, including arts & humanities



QS UNIVERSITY
RANKINGS™
LATIN AMERICA



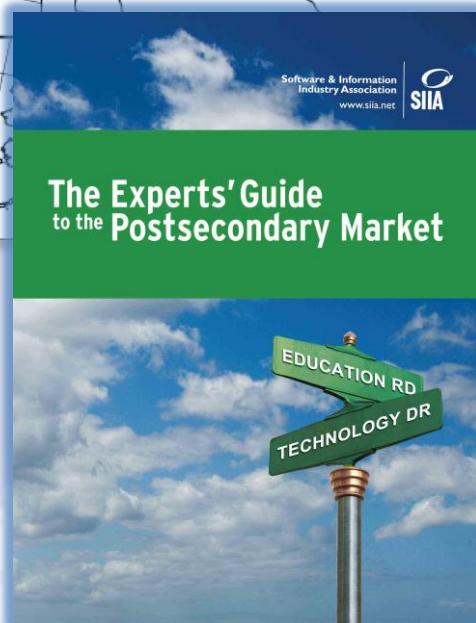
Differing ideas of higher education

1. Higher education as economic production and consumption
2. Higher education as a labour training bureau
3. Higher education as cultural transmission
4. Higher education as person formation/ leadership training
5. Higher education as social opportunity and stratification
6. Higher education as status competition and reproduction
7. Higher education as open source knowledge exchange
8. Higher education as radical democracy and social critique

1. (1 + 6 + globalization) =

Higher education as a global market





Central & South America

- 8.5% of world population
- 8.7% of world GDP PPP
- 2.2 % of 2011 Shanghai world top 500 universities
- 0.75% of 2011 Times Higher world top 400 universities
- 2.6% of 500 universities with largest scientific output 2005-09, Leiden ranking
- 4.5% of top 200 universities in webometrics ranking



Shanghai Jiao Tong ranking, 2005 & 2011

	Top 200 universities		Top 500 universities	
	2005	2011	2005	2011
Brazil	1	1	4	7
Argentina	0	1	1	1
Mexico	1	1	1	1
Chile	0	0	1	2
all Latin America	2	3	7	11
Spain	2	0	9	11
Portugal	0	0	1	2

Scimago ranking, 2005-09 science papers

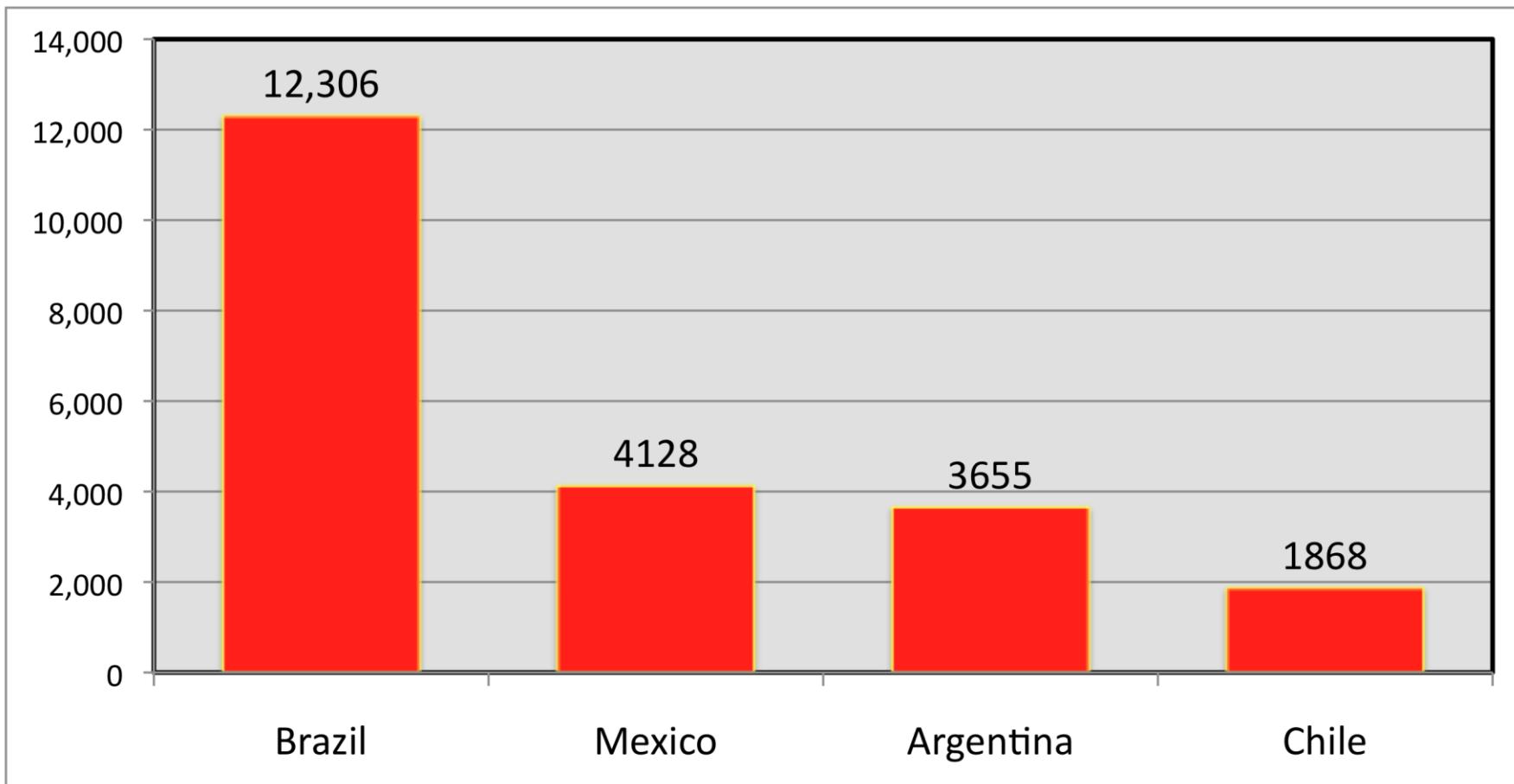
WR	University or research institute		total output	normative impact
1	Chinese Academy of Sciences	CHINA	144,269	0.9
4	Harvard U	USA	69,995	2.4
13	U Sao Paulo	BRAZIL	40,196	0.8
109	UNAM	MEXICO	17,622	0.8
152	State U of Campinas	BRAZIL	14,994	0.8
161	N Council of Scientific & Technical	ARGENTINA	14,471	0.9
194	U Estadual Paulista	BRAZIL	13,043	0.7
209	Federal U Rio de Janeiro	BRAZIL	12,340	0.8
250	U Buenos Aires	ARGENTINA	10,897	0.9
283	Federal U Rio Grande do Sul	BRAZIL	9750	0.8
333	Federal U Minas Gerais	BRAZIL	8661	0.8
366	N Council Science & Technology	MEXICO	8000	0.8
381	Federal U Sao Paulo	BRAZIL	7791	0.8
407	U Chile	CHILE	7354	0.9

webometrics ranking, 2012

University		world rank
U Sao Paulo	BRAZIL	20
UNAM	MEXICO	38
Federal U Rio Grande do Sul	BRAZIL	71
U Estadual Paulista	BRAZIL	122
Federal U Santa Catarina	BRAZIL	129
U Chile	CHILE	153
Federal U Rio de Janeiro	BRAZIL	171
U Brasilia	BRAZIL	184
State U of Campinas	BRAZIL	193
Federal U Parana	BRAZIL	206
Federal U Minas Gerais	BRAZIL	253
U Buenos Aires	ARGENTINA	326
National U Colombia	COLOMBIA	357
Federal U Bahia	BRAZIL	358

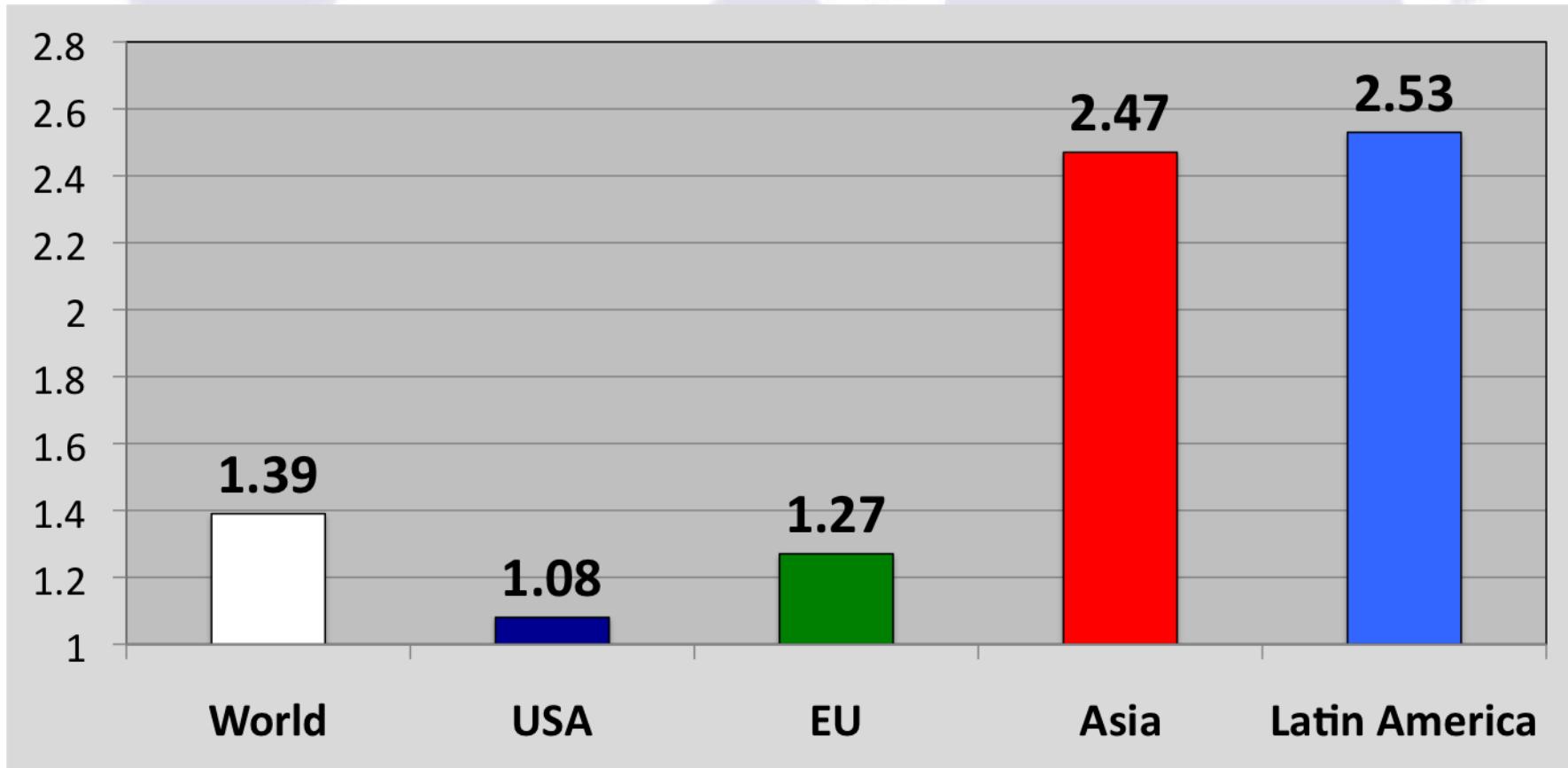
Science papers in global journals, Central and South America, 2009

four largest producers, US National Science Foundation



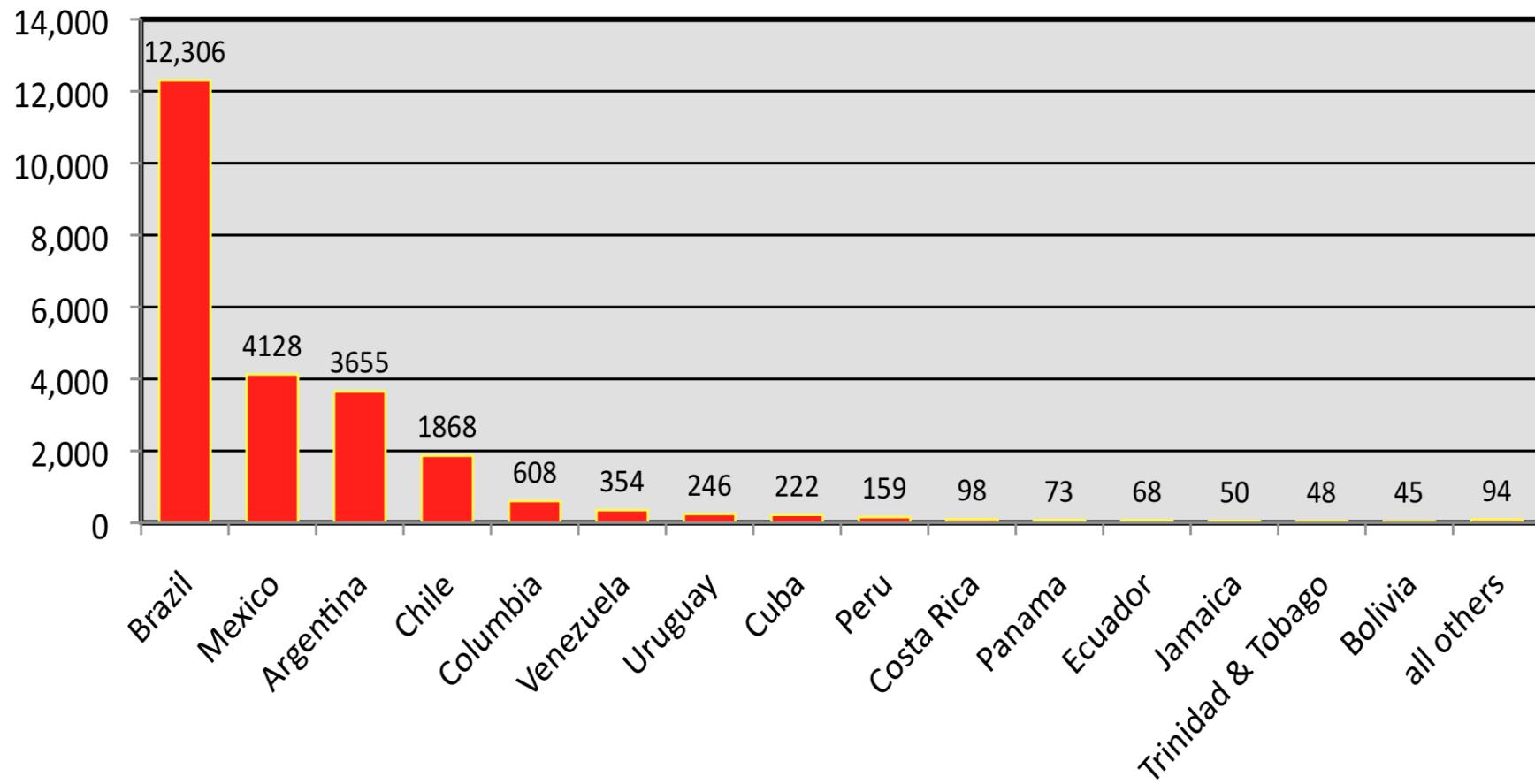
Growth of science papers, 1995-2009 (1995 = 1.00)

US National Science Foundation



Science papers in global journals, Central and South America, 2009

US National Science Foundation



Leiden 2005-9, world top 10 by volume

	University		total papers	citation s per paper	papers in top 10% field normed cites
1	Harvard U	USA	33,511	16.58	22.5
2	U Toronto	CANADA	20,966	9.08	13.8
3	U Michigan	USA	18,434	10.31	16.9
4	U Tokyo	JAPAN	18,382	6.85	10.2
5	U California (Los Angeles)	USA	17,158	11.35	17.5
6	Johns Hopkins U	USA	16,343	12.31	16.5
7	U Washington, Seattle	USA	16,093	11.81	18.6
8	U Sao Paulo	BRAZIL	15,486	3.81	5.4
9	U Pennsylvania	USA	15,262	11.73	17.4
10	Stanford U	USA	15,032	13.28	21.9
93	U Barcelona	SPAIN	7111	7.18	10.7

Leiden ranking, includes non English papers

University		total papers	citations per paper	papers in top 10% field normed cites
U Sao Paulo	BRAZIL	17,380	3.51	5.2
UNAM	MEXICO	8066	3.39	4.3
State U of Campinas	BRAZIL	6179	3.57	5.6
Federal U of Rio de Janeiro	BRAZIL	5001	3.28	4.5
U Estadual Paulista	BRAZIL	5660	2.34	4.1
U Buenos Aires	ARGENTINA	4409	4.03	5.3
Federal U of Rio Grande do Sul	BRAZIL	4493	3.36	4.5
Federal U of Minas Gerais	BRAZIL	3687	3.22	5.1
U Chile	CHILE	3178	3.56	4.9
Federal U of Sao Paulo	BRAZIL	2973	3.63	3.7
U National La Plata	ARGENTINA	2015	2.93	4.5
Federal U Santa Catarina	BRAZIL	2025	3.41	6.2
Catholic U of Chile	CHILE	2120	3.92	5.5

Times Higher Education ranking

- Research reputation, citations, volume and income, international collaboration, plus indicators related to PhDs – 73.25%
- Teaching reputation, income, staffing levels – 21.75%
- Internationalization – 5.00% (7.50% if international research collaboration included here not above)

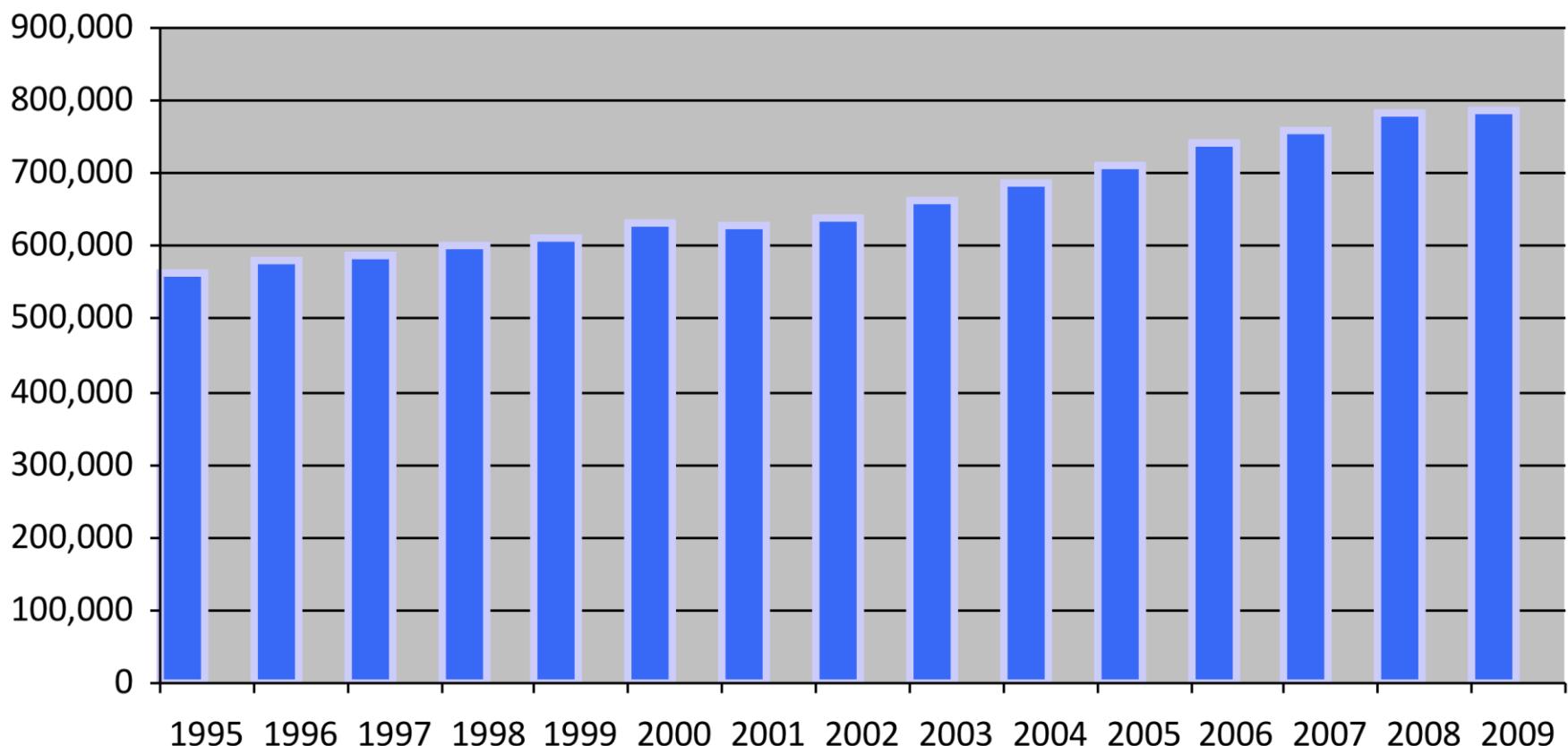
Data are collected and compiled by Thomson-Reuters: 13 separate indicators are weighted and spliced together using standardized numerics, to create the composite index. Reputational surveys for research and teaching constitute 34.5% of the index, bibliometric indicators 34.5%, income indicators 10.75%, PhD studies 8.25%, internationalization indicators 7.5% and the student-staff ratio 4.5%.

Shanghai Jiao Tong University ranking

Nobel Prizes and Field Medals won by alumni (sliding scale, more recent prizes score higher)	10%
Nobel Prizes and Field won by current members of academic staff	20%
Members of academic staff who are HiCi researchers, in top 250 in world field by citations	20%
Number of papers published in <i>Nature</i> and <i>Science</i> in previous five years	20%
Papers indexed in Science citation index and Social Science citation index in previous year	20%
Per capita indicator: above indicators divided by number of full-time equivalent academic staff	10%

Science research papers per year, 1995-2009: Total world output

US National Science Foundation data



Countries with 1000+ science papers p.a.

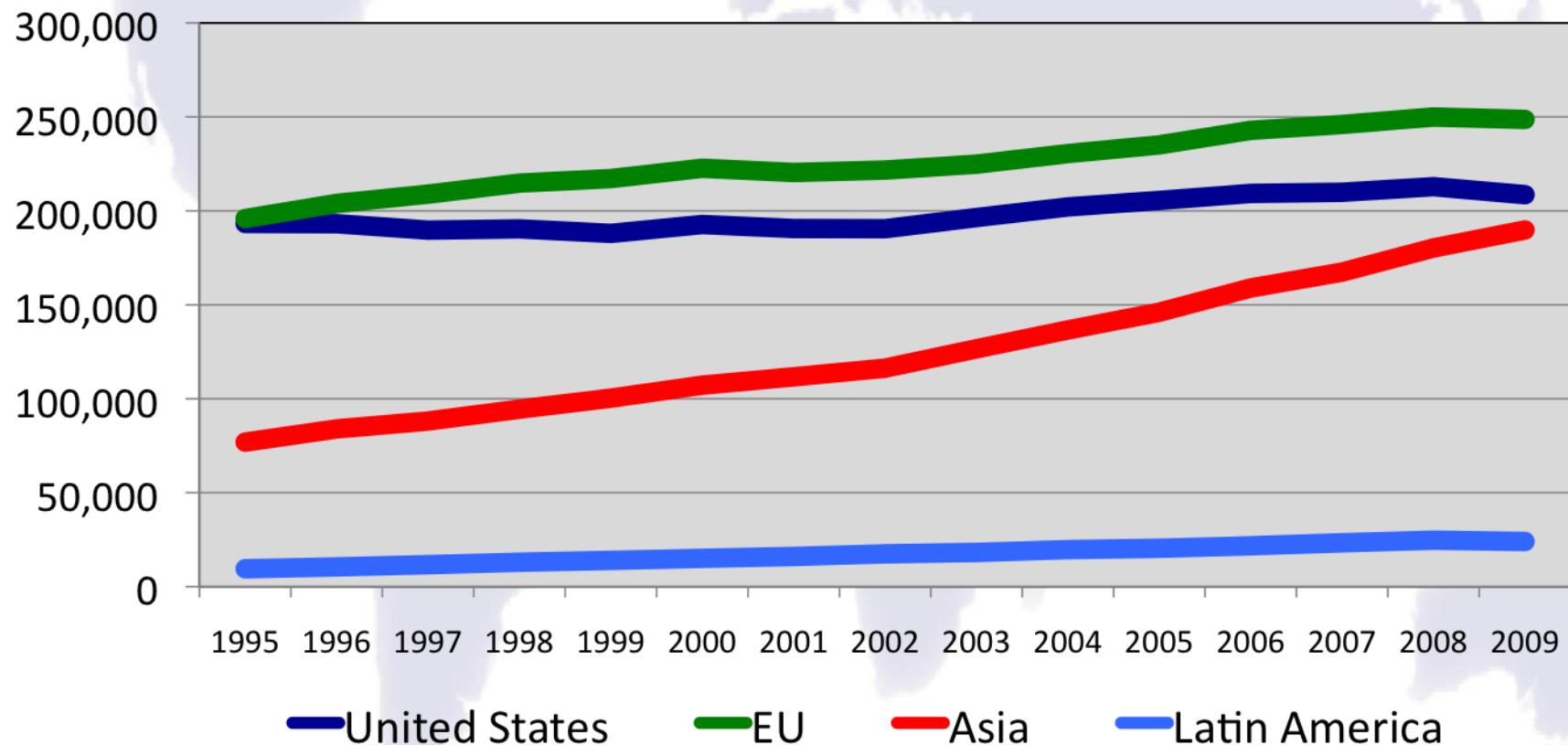
US National Science Foundation data for 2009

ANGLO-SPHERE	EUROPE EU NATIONS		EUROPE NON-EU	ASIA	LATIN AMERICA
Australia	Austria	Italy	Croatia	China	Argentina
Canada	Belgium	Netherlands	Norway	India	Brazil
N. Zealand	Czech Rep.	Poland	Russia	Japan	Chile
UK	Denmark	Portugal	Serbia	Malaysia	Mexico
USA	Finland	Rumania	Switzerland	Pakistan	
	France	Slovakia	Turkey	Singapore	M.EAST /AF
	Germany	Sweden	Ukraine	South Korea	Egypt
	Greece	Spain		Taiwan	Iran
	Hungary	Sweden		Thailand	Israel
	Ireland				Sth. Africa
					Tunisia

Science papers per year, 1995-2009

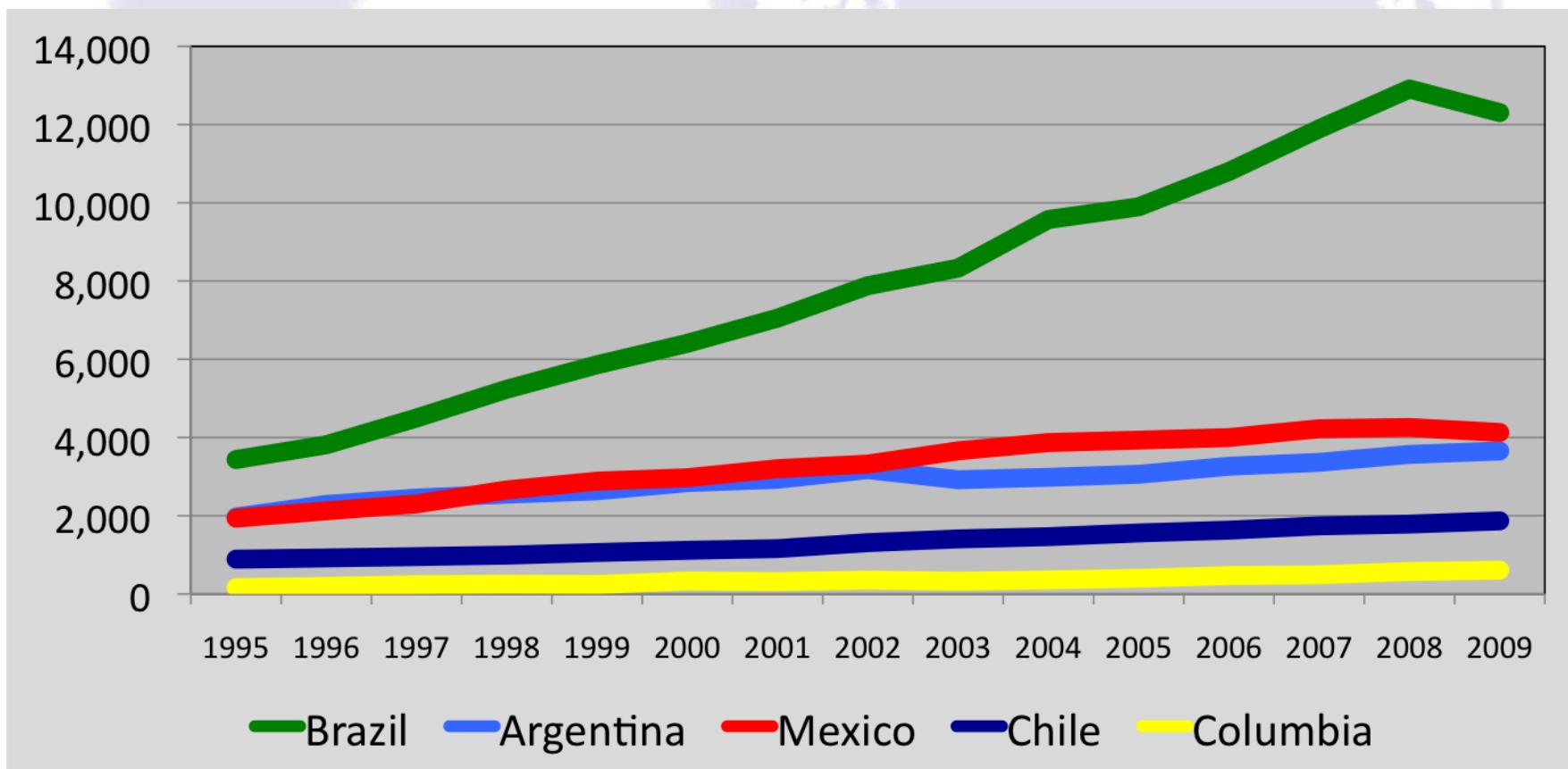
USA, EU, Asia, Central & South America

US National Science Foundation data

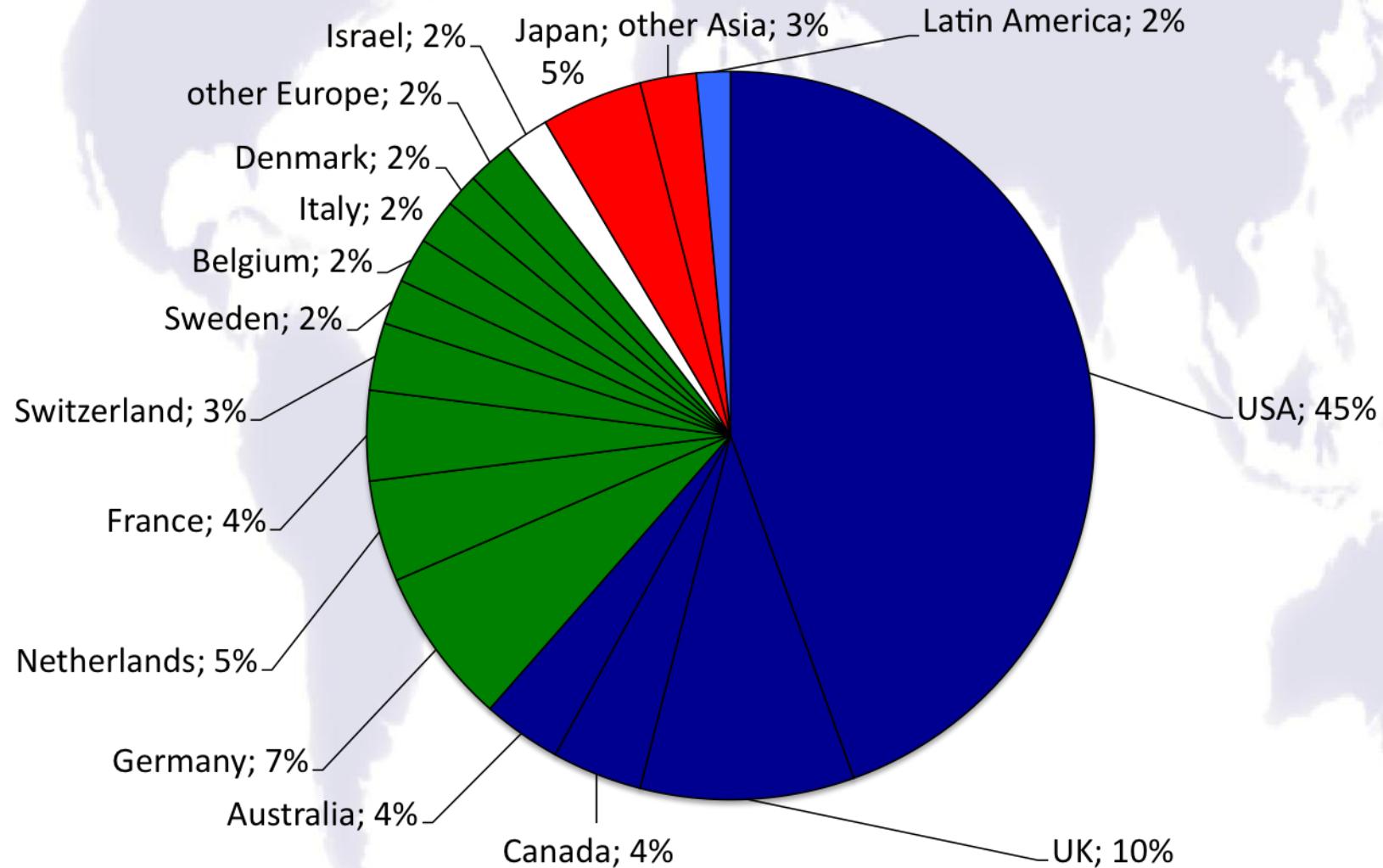


Science papers per year, 1995-2009 five Latin American nations

US National Science Foundation data

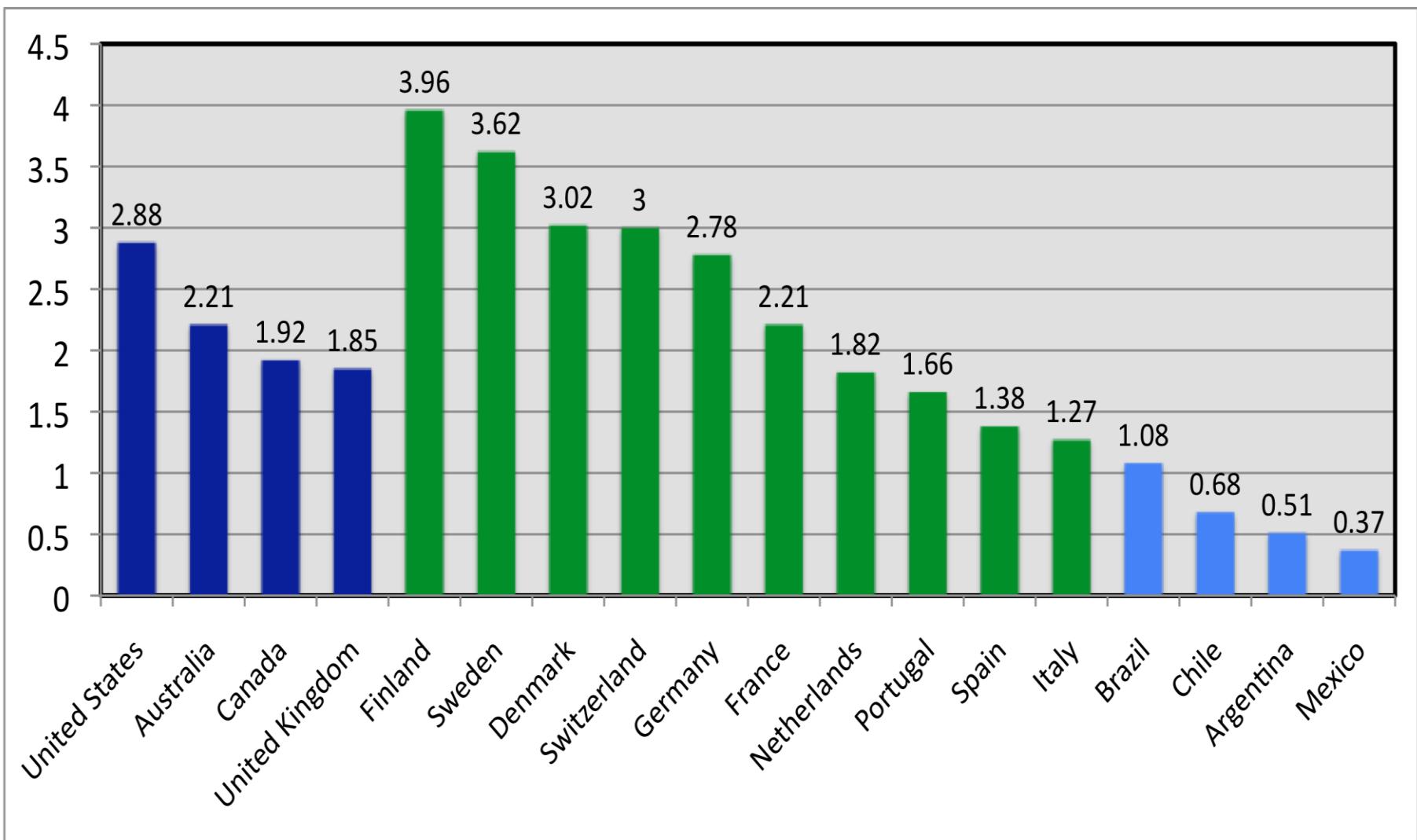


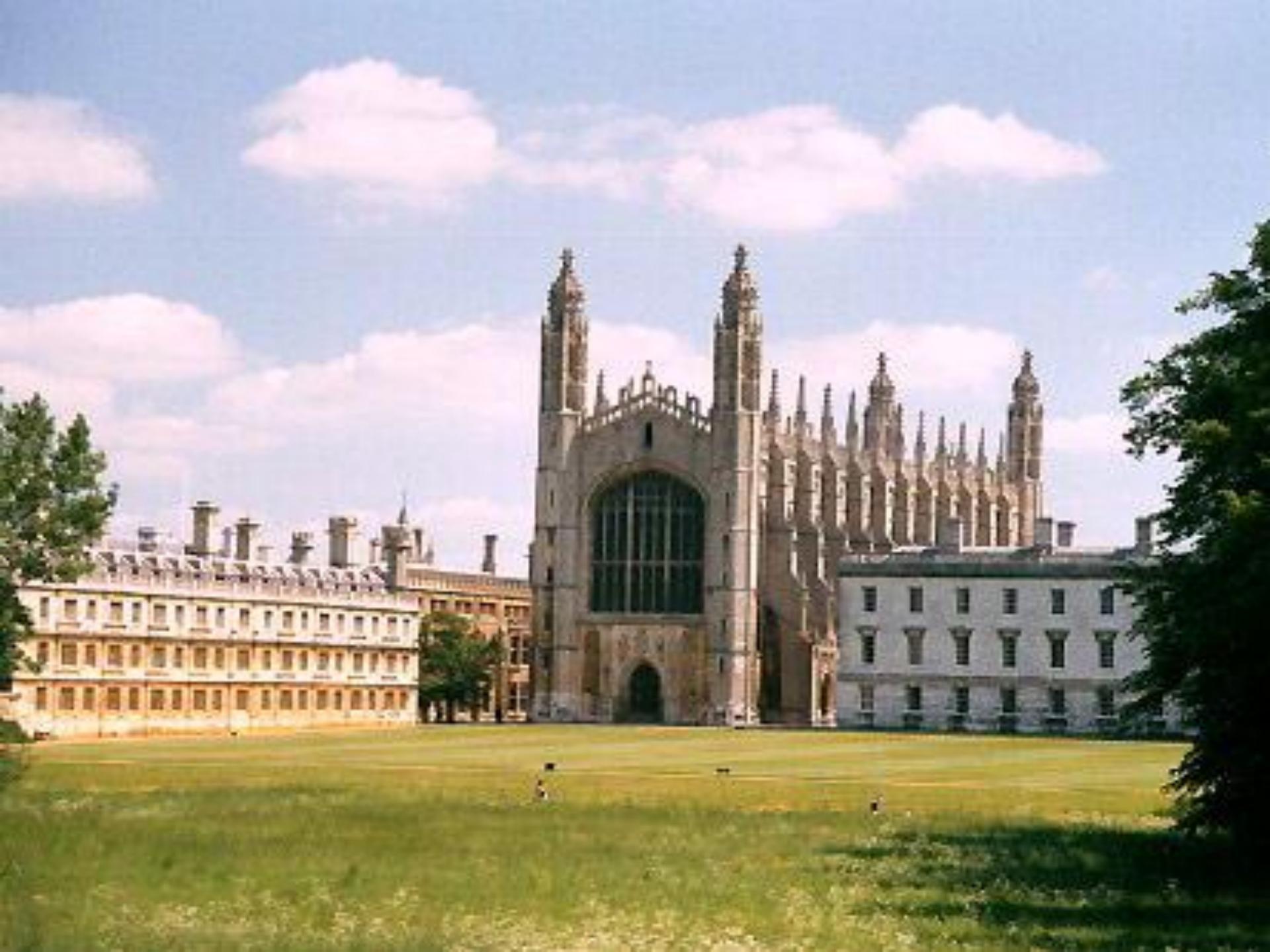
Shanghai Jiao Tong top 200, 2011



R&D as a proportion of GDP, 2008/9

US National Science Foundation

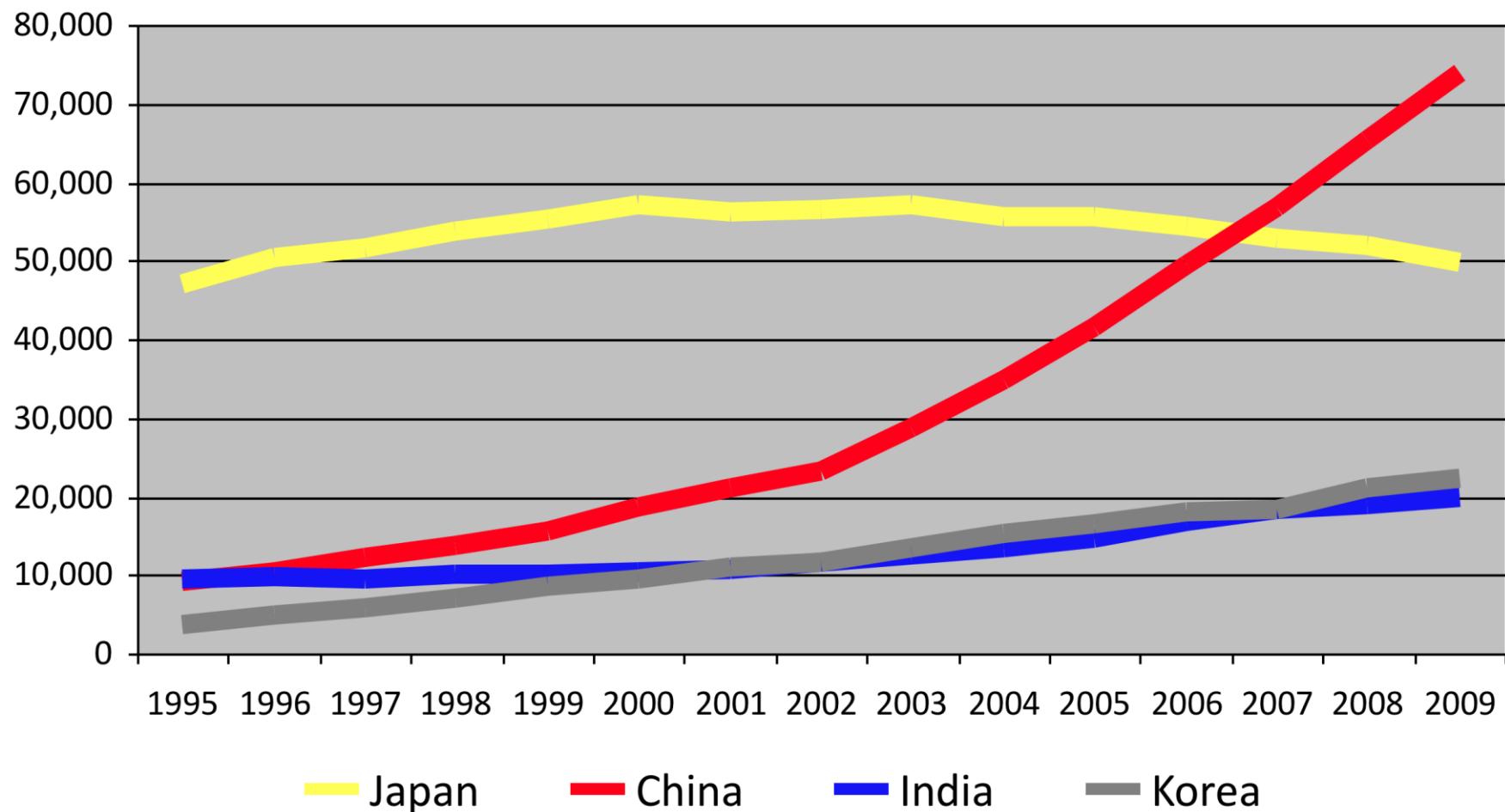




Research papers per year, 1995-2009

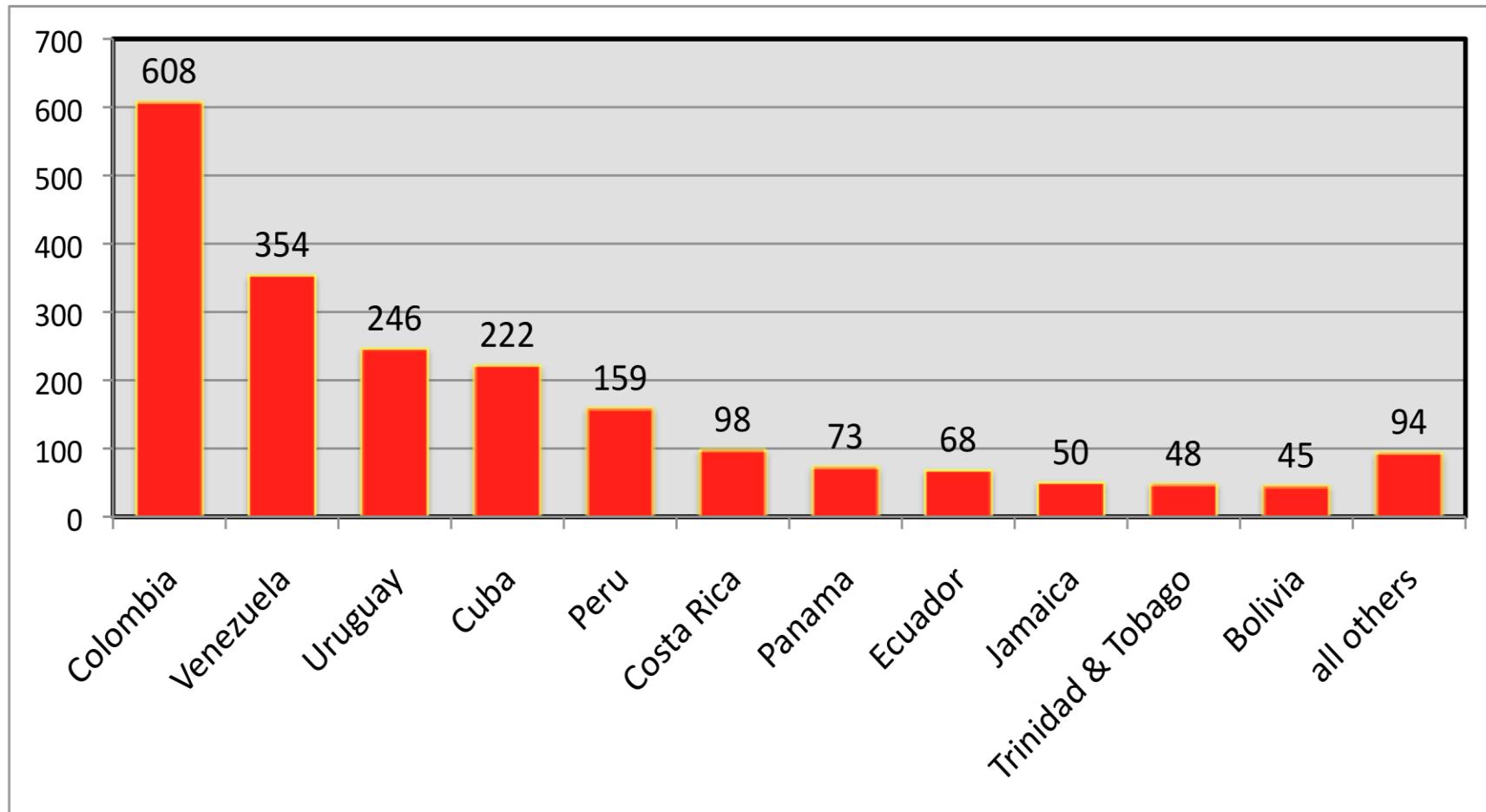
China, Japan, India & Korea

US National Science Foundation data

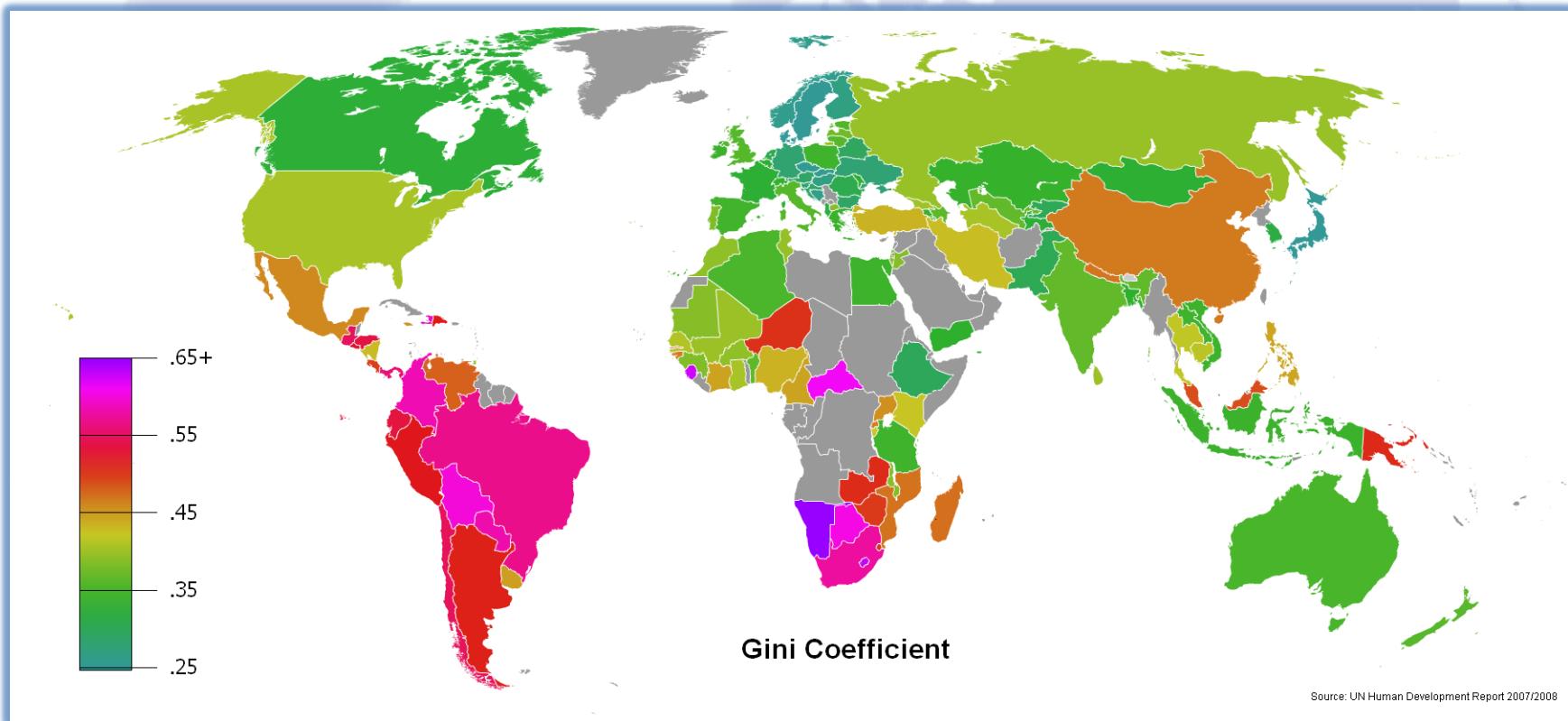


Science papers in global journals, Central and South America, 2009

US National Science Foundation



World-wide inequalities



Where to from here?

- Use of rankings
- Design of rankings
- The question of regional strategy

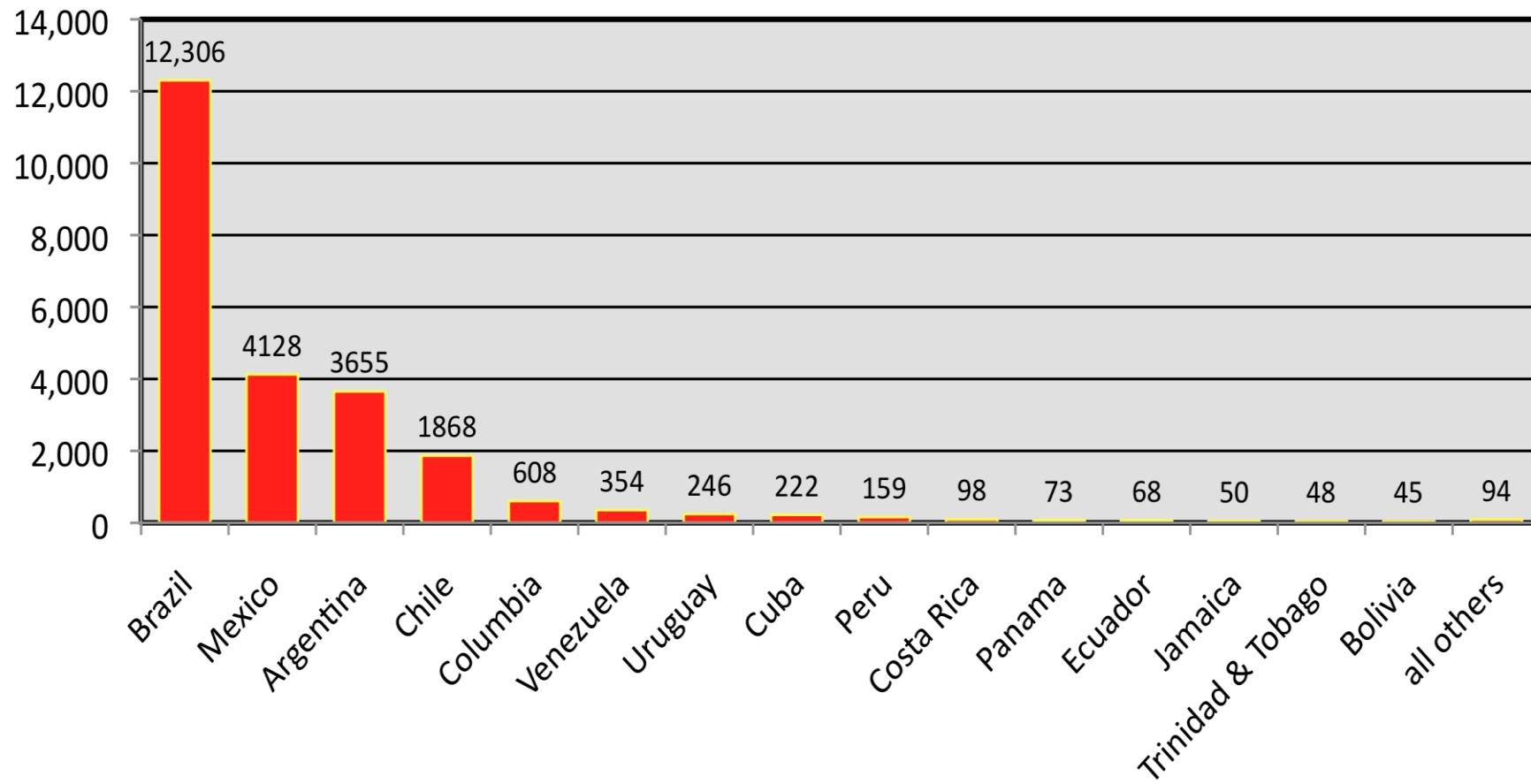


Leiden ranking, 2005-09 science papers

WR	University		total papers	citation s per paper	papers in top 10% field normed cites
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472	U National La Plata	ARGENTINA	1884	3.09	4.6
486	Federal U Santa Catarina	BRAZIL	1731	3.82	6.8
495	Catholic U of Chile	CHILE	1638	4.80	6.7

Science papers in global journals, Central and South America, 2009

US National Science Foundation



Scimago ranking, 2005-09 science papers

WR	University or research institute		total output	normative impact
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4	Harvard U	USA	69,995	2.4
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109	UNAM	MEXICO	17,622	0.8
152	State U of Campinas	BRAZIL	14,994	0.8
161	N Council of Scientific & Technical	ARGENTINA	14,471	0.9
194	U Estadual Paulista	BRAZIL	13,043	0.7
209	Federal U Rio de Janeiro	BRAZIL	12,340	0.8
250	U Buenos Aires	ARGENTINA	10,897	0.9
283	Federal U Rio Grande do Sul	BRAZIL	9750	0.8
333	Federal U Minas Gerais	BRAZIL	8661	0.8
366	N Council Science & Technology	MEXICO	8000	0.8
381	Federal U Sao Paulo	BRAZIL	7791	0.8
407	U Chile	CHILE	7354	0.9

education quality
universities performance
higher data rank
research academics
countries population
Universitas 21 private
international measure

World top 100 research fields & disciplines

SJTU ranking, 2011, Spanish/Portuguese speaking universities only

University		Research field/discipline	2011 rank
U Sao Paulo	BRAZIL	Medicine & Pharmacy	76-100
U Barcelona	SPAIN	Medicine & Pharmacy	76-100
Autonomous U Madrid	SPAIN	Mathematics	52-75
U Valladoid	SPAIN	Mathematics	76-100
U Valencia	SPAIN	Physics	76-100
U Zaragoza	SPAIN	Chemistry	76-100

R&D investment by world region 2009

Region	Investment in R&D (US National Science Foundation data)
North America	\$433 billion (33.9% of world total)
Europe	\$319 billion (25.0%)
East, SE & South Asia	\$402 billion (31.5%)
Middle East & Africa	\$35 billion (2.7%)
Australia & Pacific	\$22 billion (1.8%)
South & Central America	\$32 billion (2.5%)

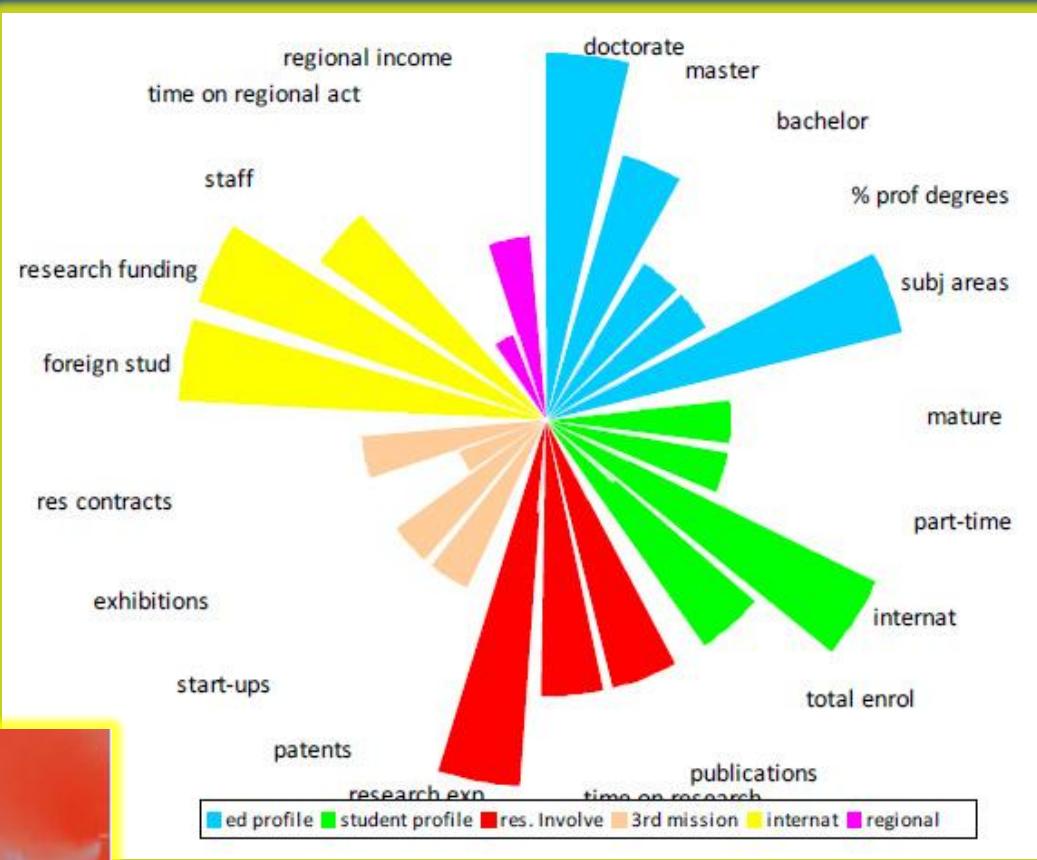
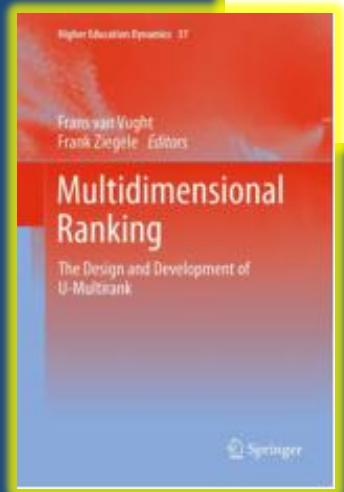
Leading national nodes in Latin American university networks

University		world rank
U Sao Paulo	BRAZIL	20
UNAM	MEXICO	38
U Chile	CHILE	153
U Buenos Aires	ARGENTINA	326
National U Colombia	COLOMBIA	357
U Costa Rica	COSTA RICA	403
U Puerto Rico Rio Piedras	PUERTO RICO	579
U los Andes Merida	VENEZUELA	640
U National Mayor San Marcos	PERU	810
U Habana	CUBA	1300

Population, economy, science

ten Latin American countries with largest urban populations

	urban population (mill) 07-11 World Bank	GDP PPP 2011 bill \$s IMF/CFB*	GNI per head PPP 2011 \$s IMF / CFB*	science papers 2009 US NSF	urban persons per science paper
Chile	15.2	299.6	17,222	1868	8137
Argentina	37.3	716.4	17,516	3655	10,205
Brazil	168.6	2294.2	11,769	12,306	13,701
Mexico	88.2	1661.6	14,610	4128	21,366
Cuba	8.5	114.1*	9900*	222	38,288
Columbia	34.8	472.0	10,249	608	57,237
Venezuela	27.1	374.1	12,568	354	76,554
Peru	20.8	302.0	10,062	159	130,817
Ecuador	9.7	127.4	8492	68	142,647
Guatemala	7.1	74.7	5070	22	322,727

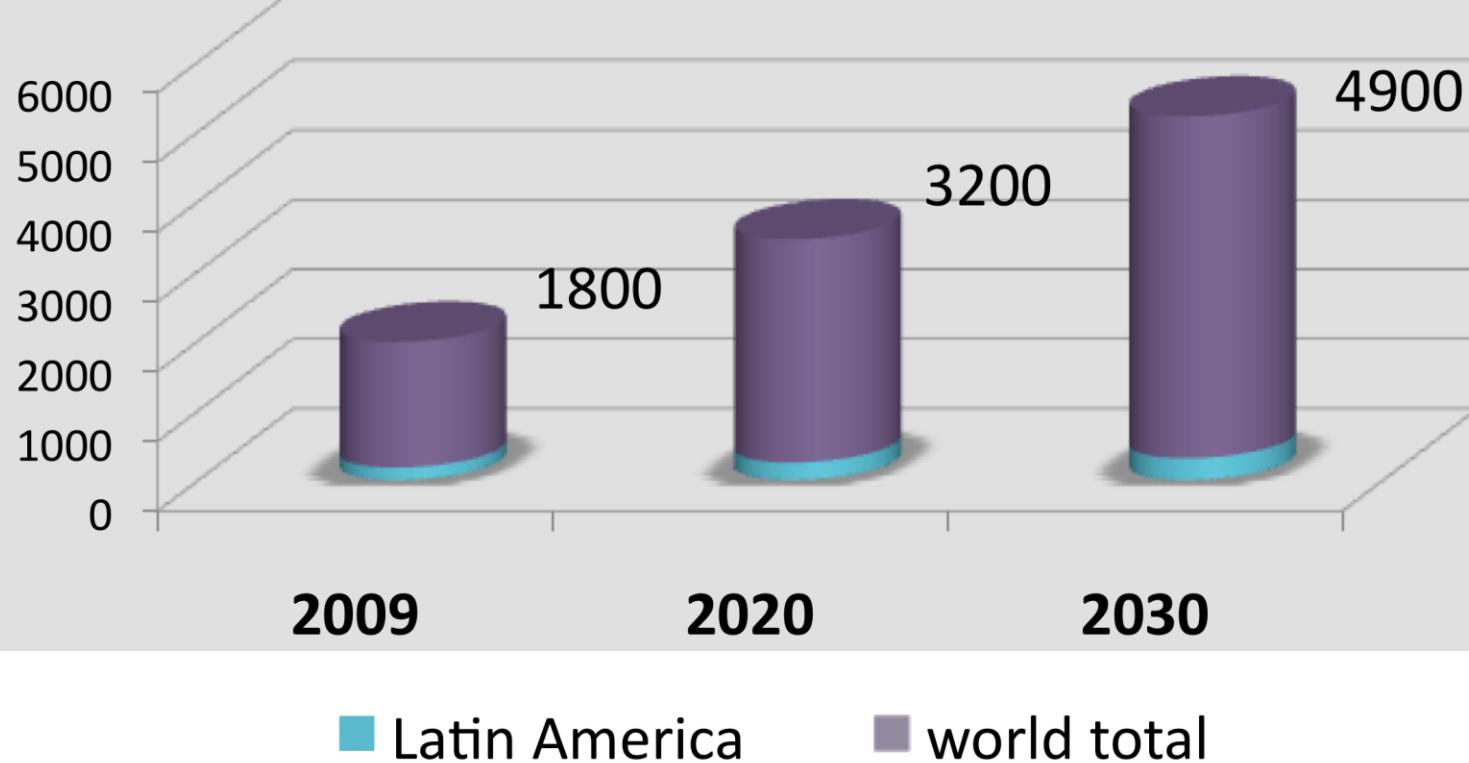


Scimago Iberoamerican (universities only)

WR	IAR	University		total output	normative impact (1.0 = expected)
13	1	U Sao Paulo	BRAZIL	44,610	0.8
109	2	UNAM	MEXICO	18,350	0.8
152	3	State U of Campinas	BRAZIL	16,154	0.8
156	4	U Barcelona	SPAIN	15,290	1.5
194	5	U Estadual Paulista	BRAZIL	15,047	0.7
209	6	Federal U Rio de Janeiro	BRAZIL	13,560	0.8
220	7	U Autonomous Barcelona	SPAIN	13,262	1.4
212	8	U Complutense Madrid	SPAIN	13,240	1.1
269	9	U Valancia	SPAIN	11,191	1.3
267	10	Polytechnic U of Catalonia	SPAIN	11,068	1.2
298	11	U Porto	PORTUGAL	11,059	1.2
283	12	Federal U Rio Grande do Sul	BRAZIL	11,058	0.8
286	13	U Autonomous Madrid	SPAIN	10,591	1.2
250	14	U Buenos Aires	ARGENTINA	10,555	1.0

Global middle class to 2030 (millions)

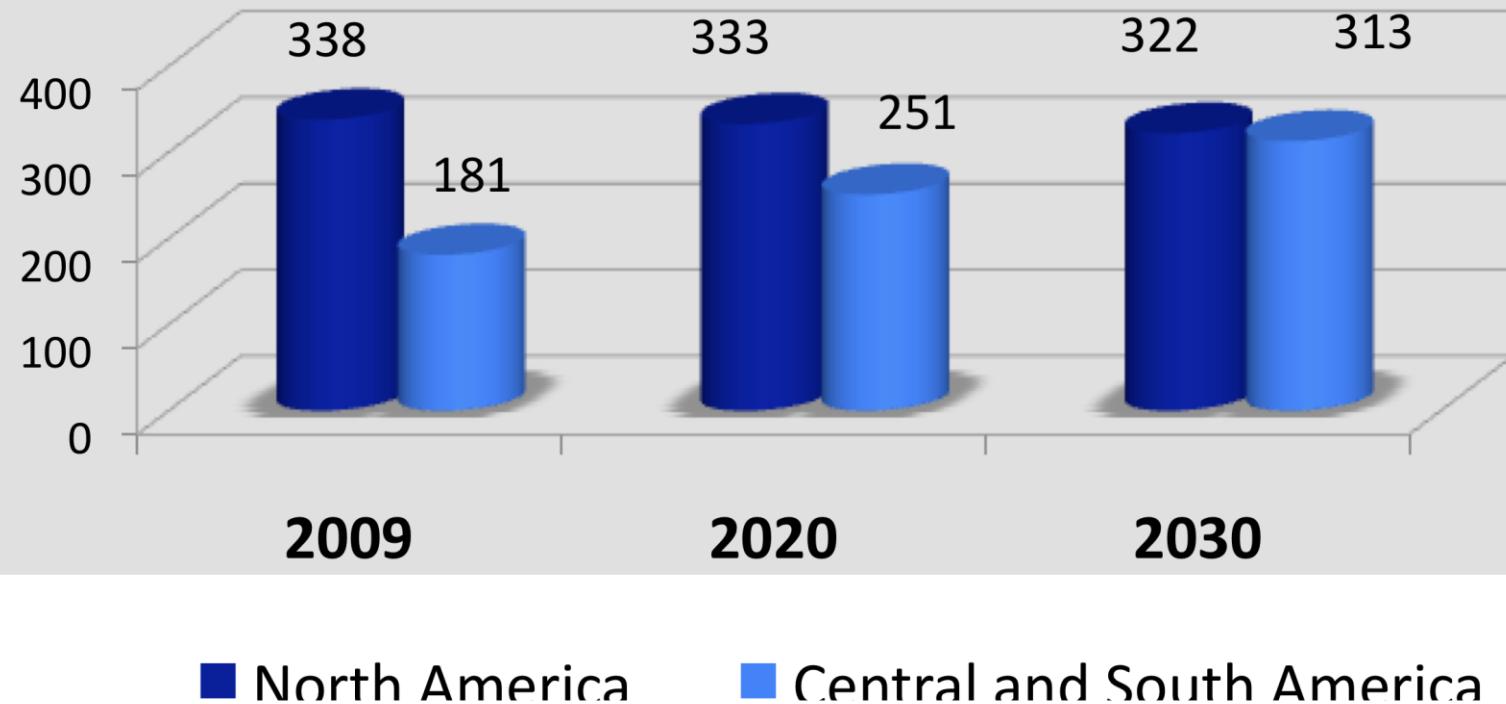
Source: European Union Institute for Strategic Studies



Middle class is defined as persons living on USD \$10-100 per day PPP

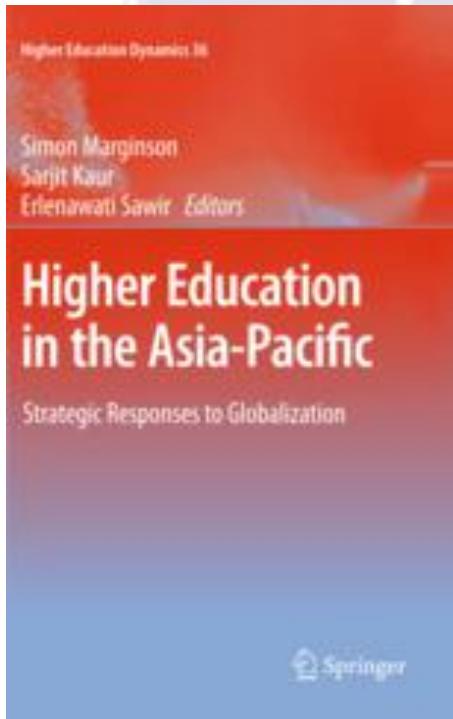
American middle class to 2030 (millions)

Source: European Union Institute for Strategic Studies

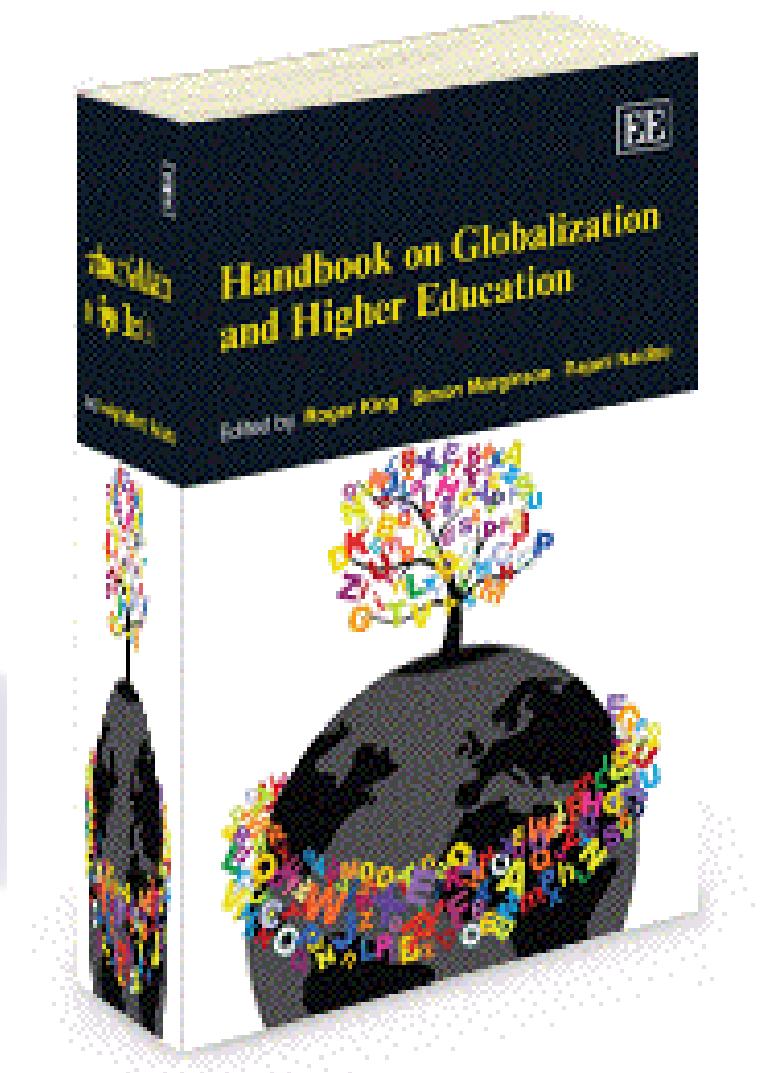


Middle class is defined as persons living on USD \$10-100 per day PPP

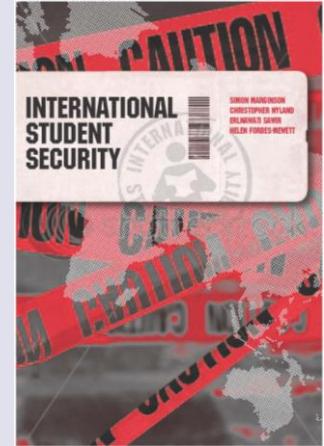
http://www.cshe.unimelb.edu.au/people/staff_pages/Marginson/Marginson.html



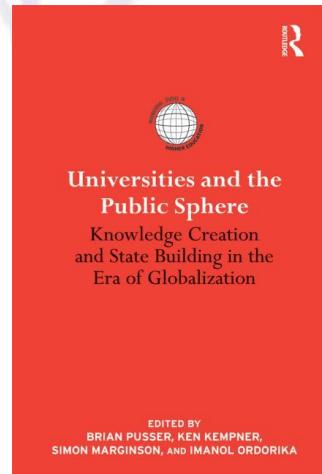
Springer, Dordrecht,
September 2011



Edward Elgar, Cheltenham,
September 2011



Cambridge UP,
Cambridge, May 2010



Routledge, New York,
August 2011