Global circulation of skills: Where are we heading to?

Brown Bag seminar

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12 MAY 2011

World Trade Institute, University of Bern

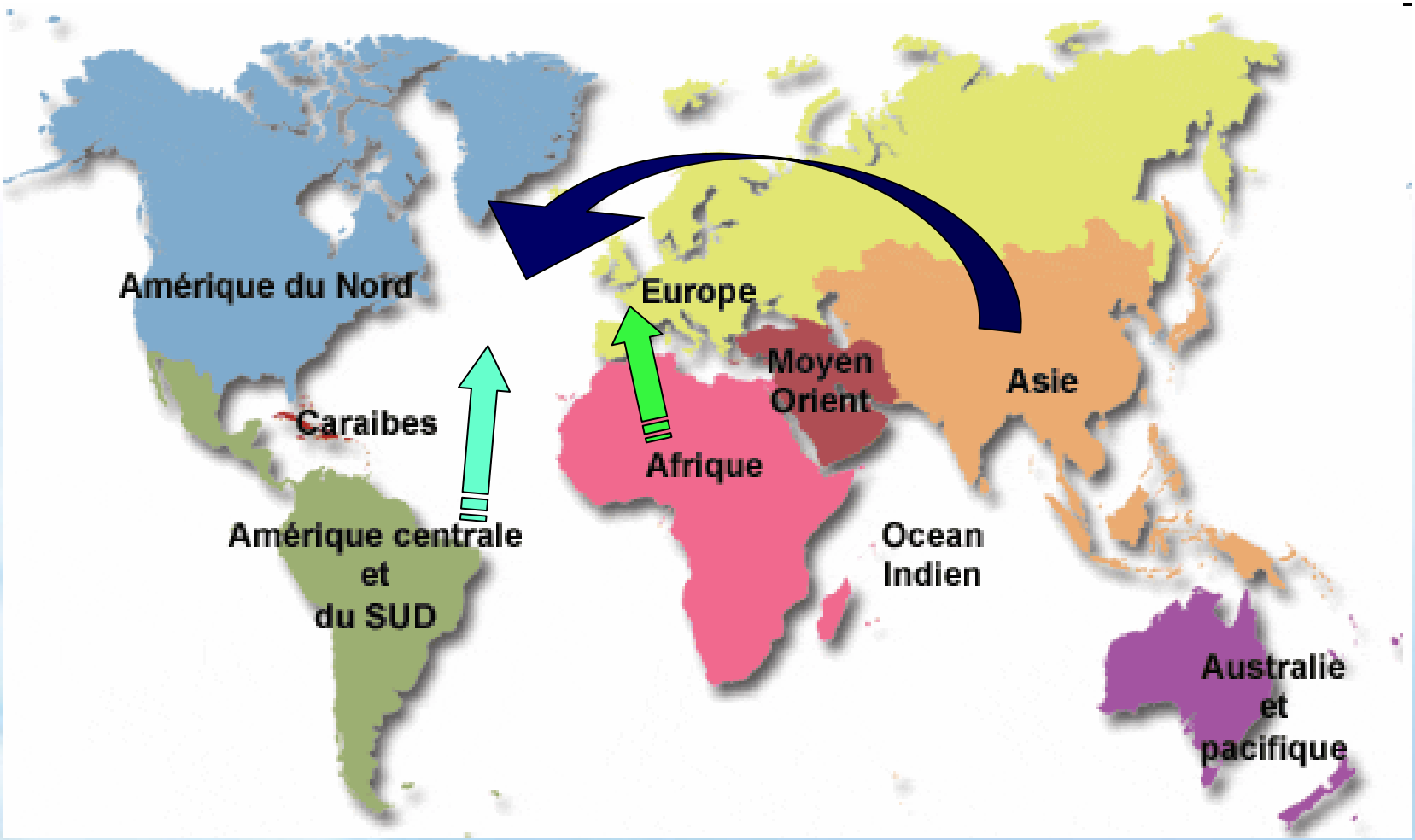
Creacion de Incubadoras Diasporas del Conocimiento para America Latina

Creation of Incubators of Knowledge Diasporas for Latin America

PLAN

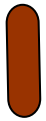
1. History & concepts
2. Circulation ?
3. Diasporas
4. Theory & policy
5. *Questions-comments*
6. Transformations
7. New trends
8. Discussion

The brain drain

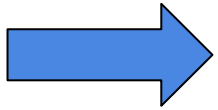


Brain Drain vs Brain Gain

South Africa



Young student



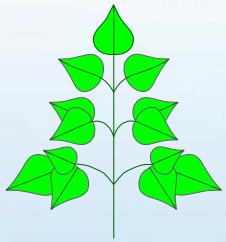
Abroad

Brain Drain vs Brain Gain

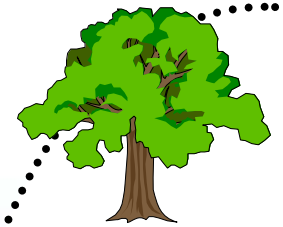
South Africa

Abroad

Young student



Advanced student



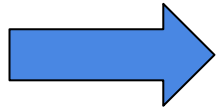
Potential brain gain

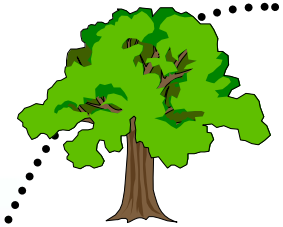
Brain Drain vs Brain Gain

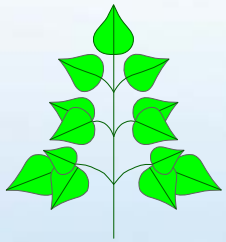
South Africa

Abroad

Young student



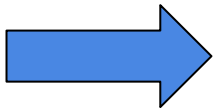


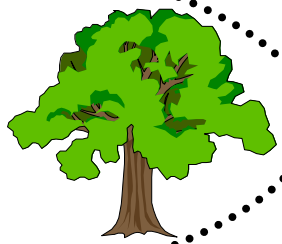


Advanced student

Potential brain gain

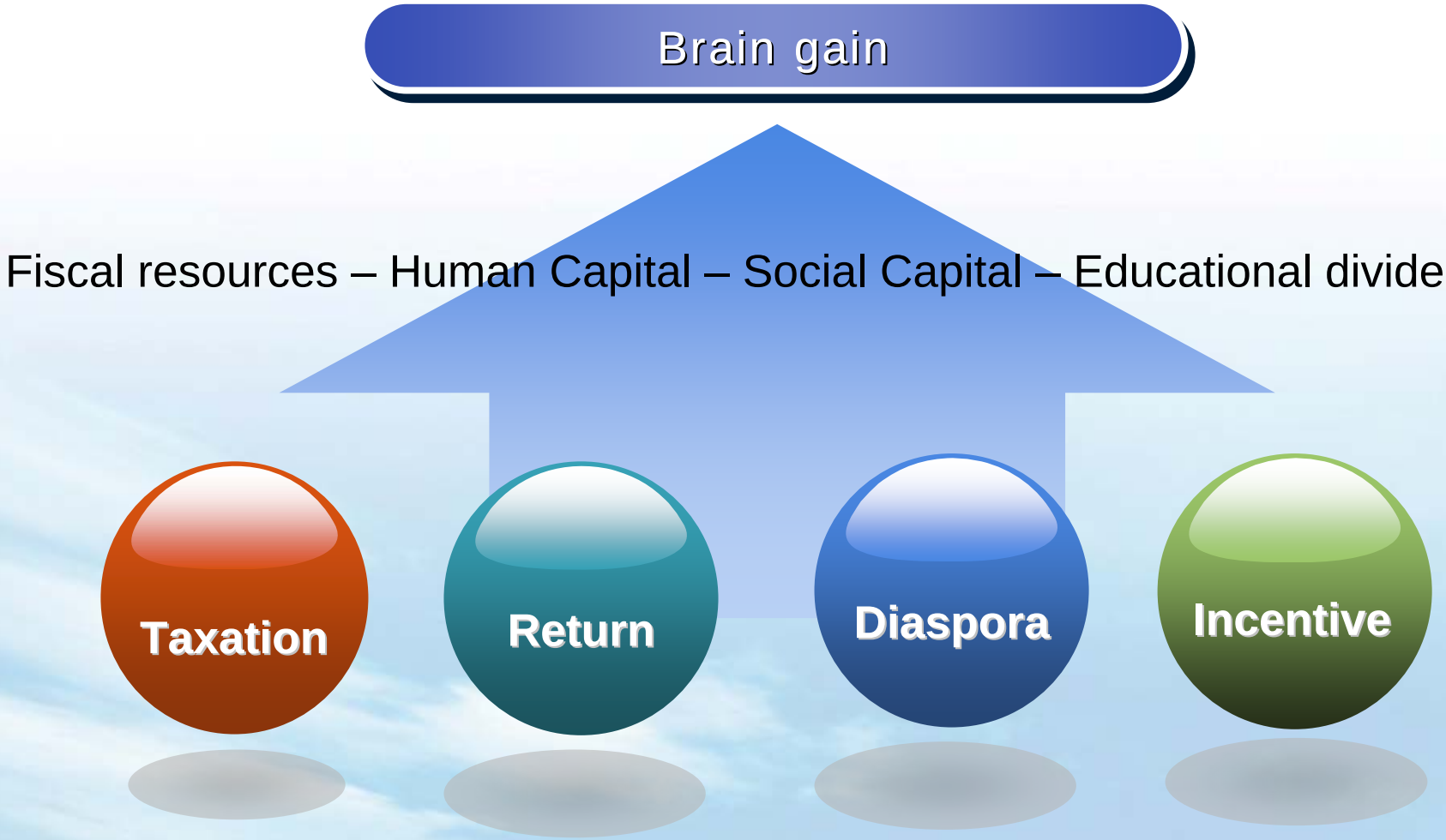
Professional



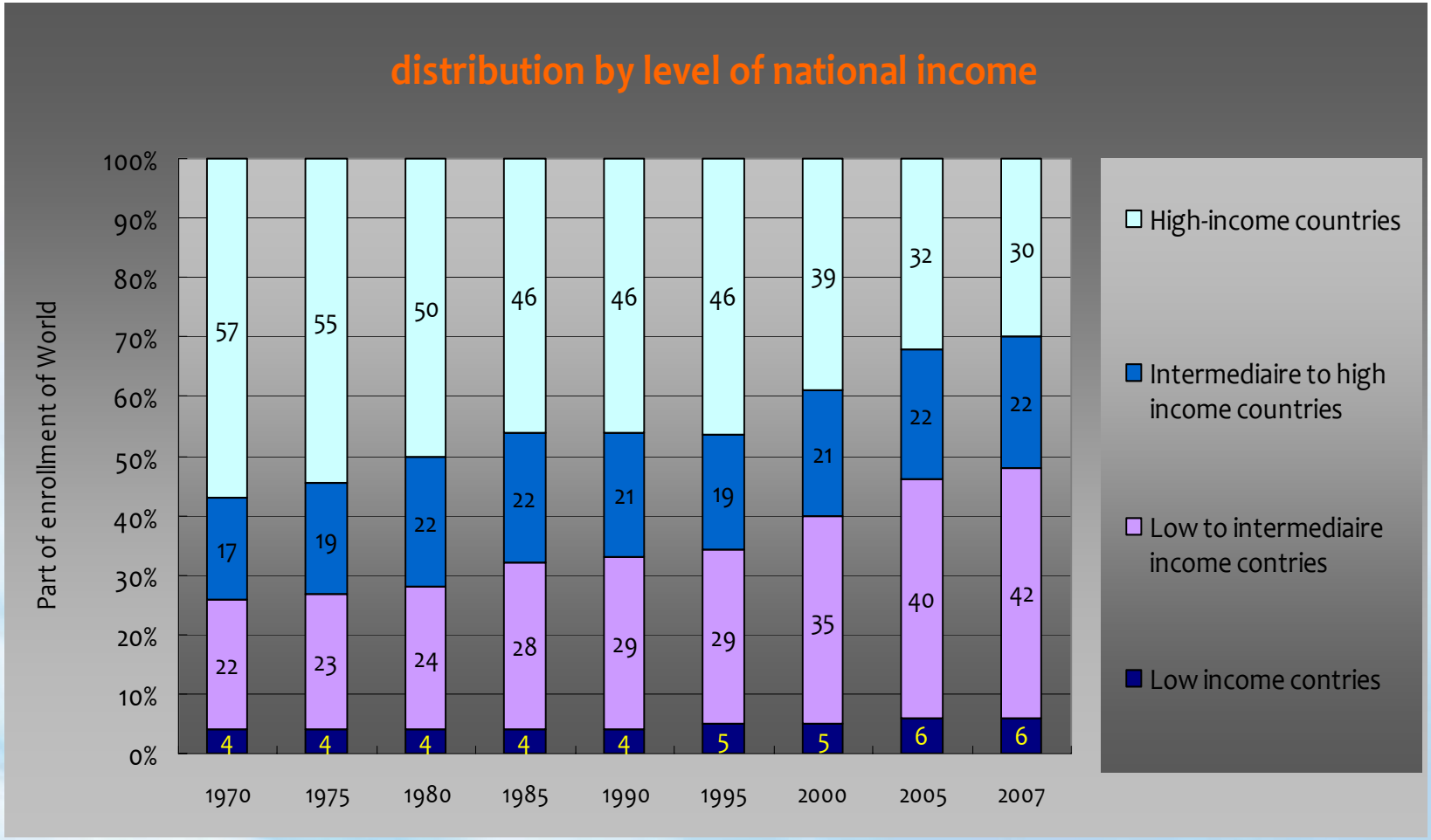


Real brain drain

4 decades of brain gain proposals since the 1970s

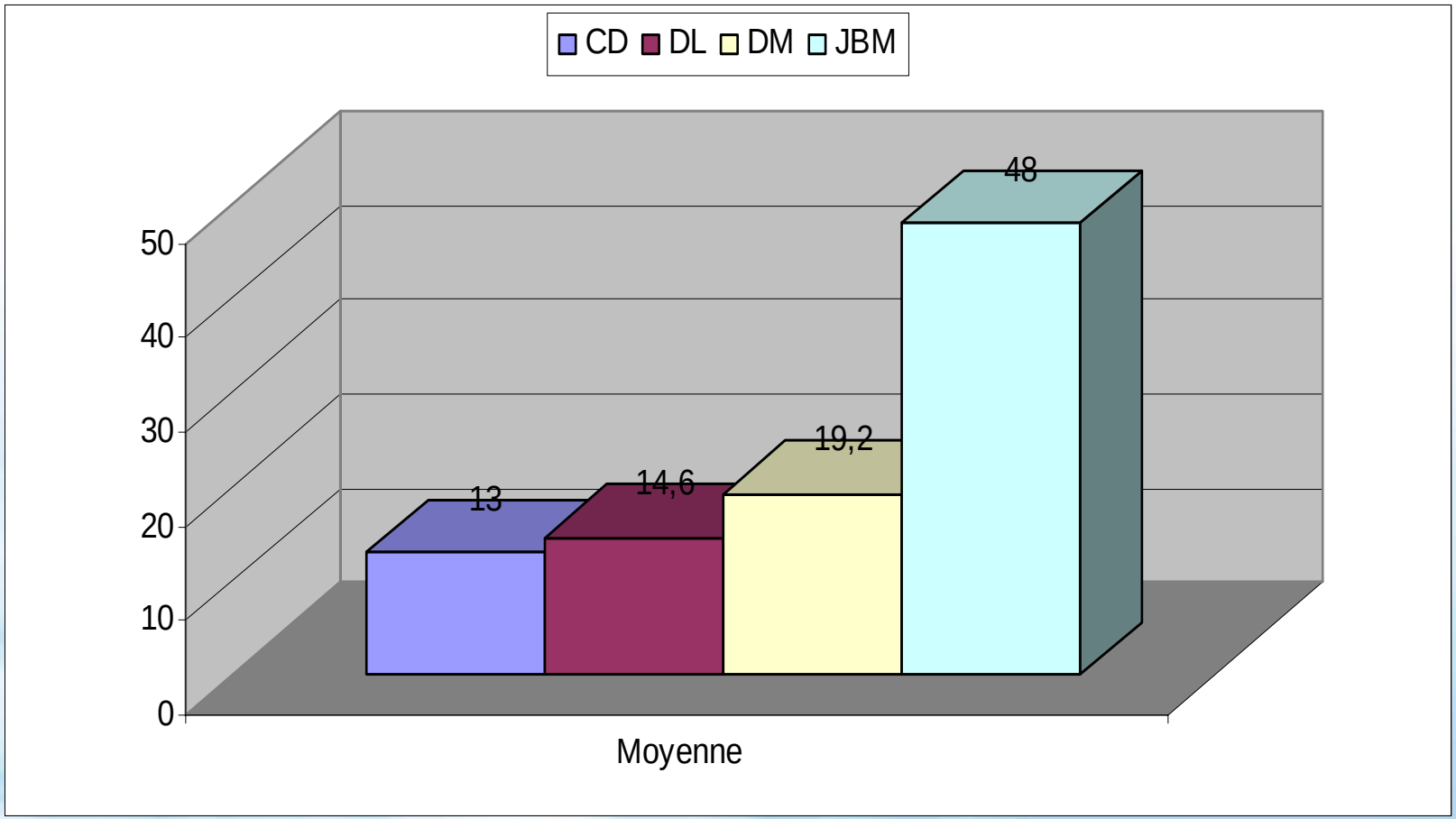


Enrolment in higher education by region in percentage of enrollment of World, 1970-2007
The rising share of emerging economies



Source: Institute of statistics of UNESCO

Comparison of HS expatriation rates according to specialists (2000)



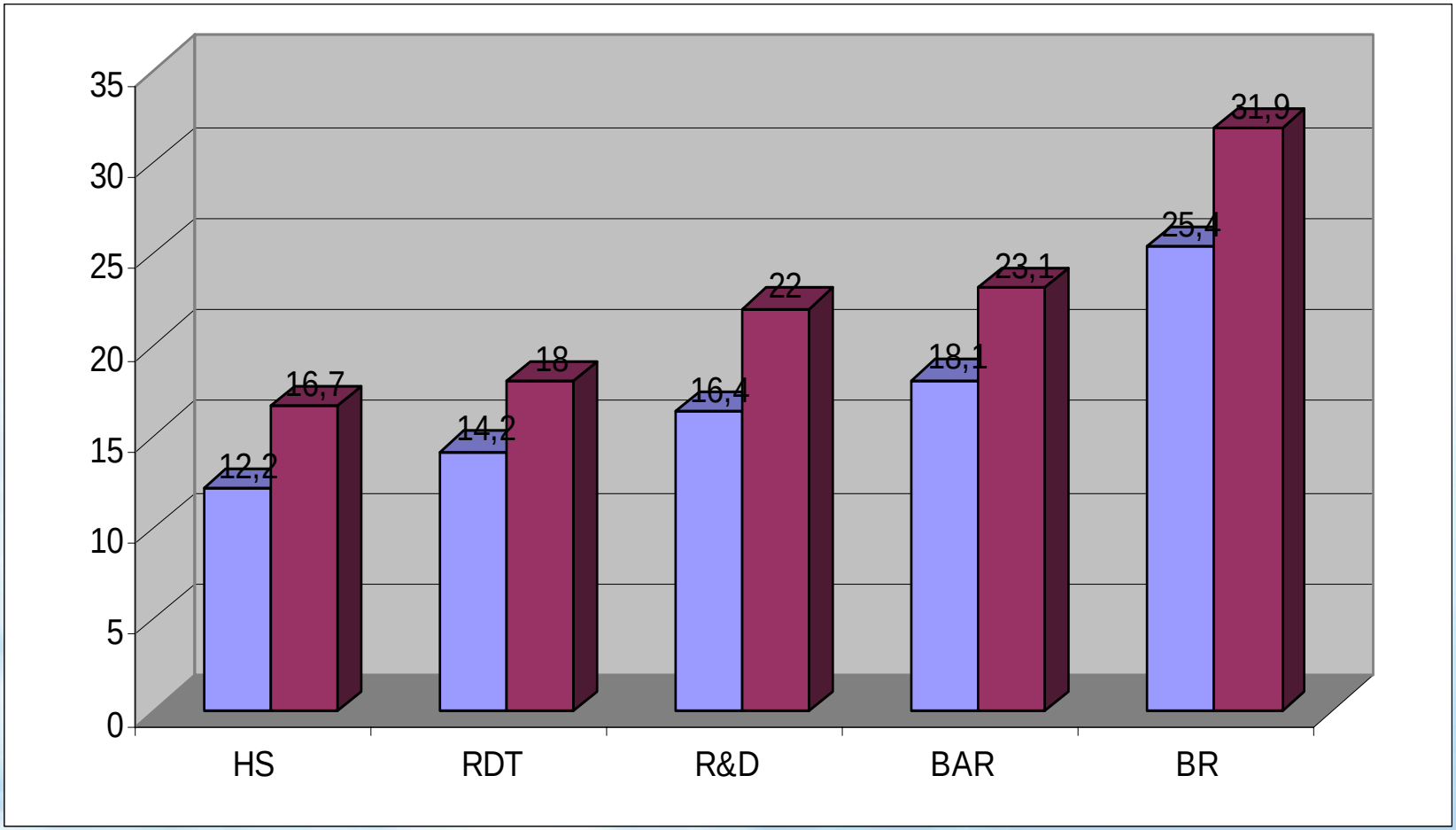
Carrington & Detragiache 1999; Dumont & Lemaître 2005; Docquier & Marfouk 2005; Meyer 2008

Expatriation rate comparison OCDE – SESTAT

	OCDE	SESTAT
Bolivia	3,2	49
Costa Rica	4	41
Ecuador	6,8	58
Nicaragua*	15,2	77
Panamá	13,2	76
El Salvador	16	65
Trinidad y Tobago*	76	81
Argentina	5,7	12
Brasil*	2,2	4
México	5,7	20
Colombia	5,7	50
Cuba	18,8	52
Chile	8,2	20
Venezuela	3,5	36
Average Am. Lat.	**13**	**46**

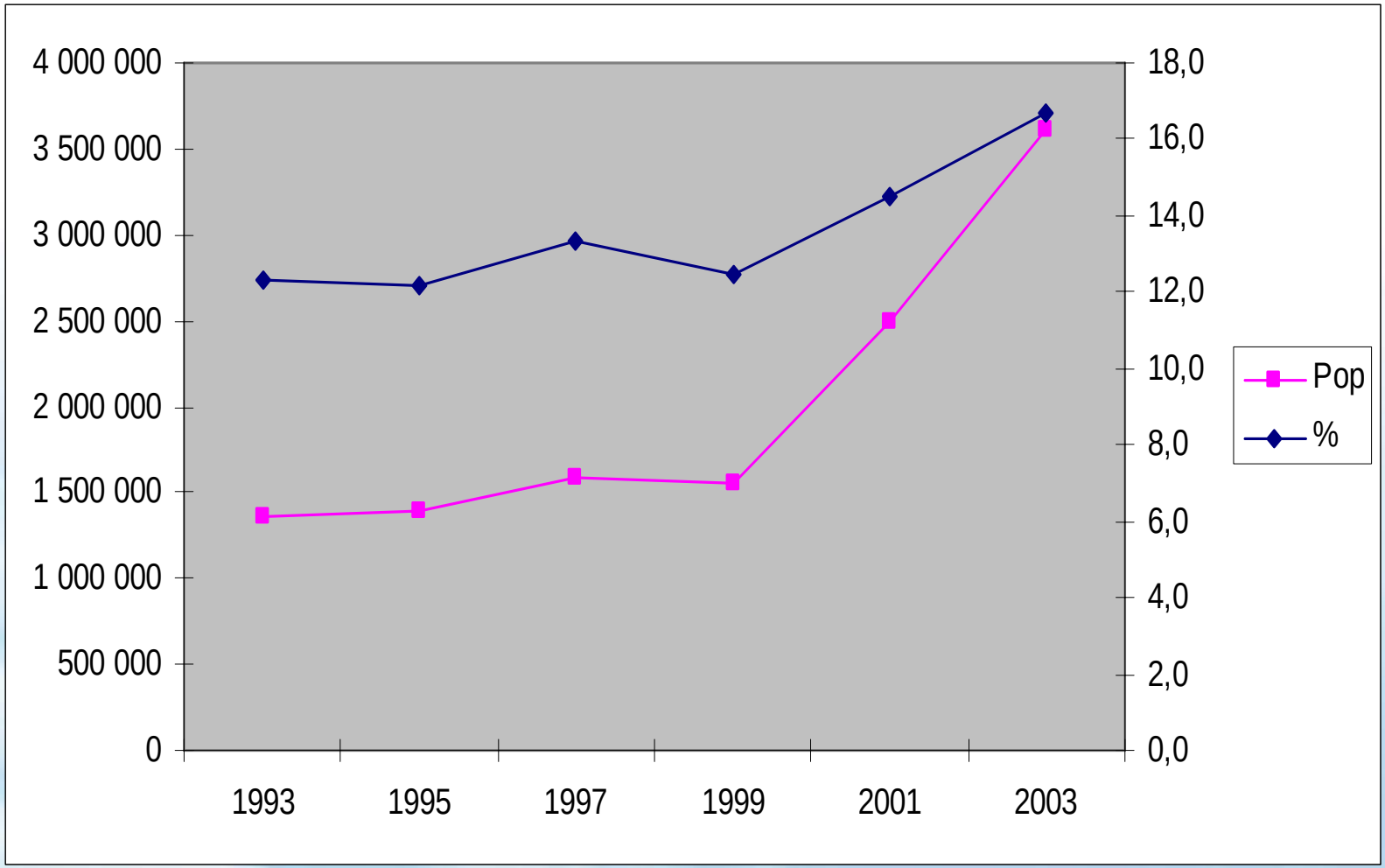
(2000) %

Expats growth per knowledge intensive categories (1993 et 2003)



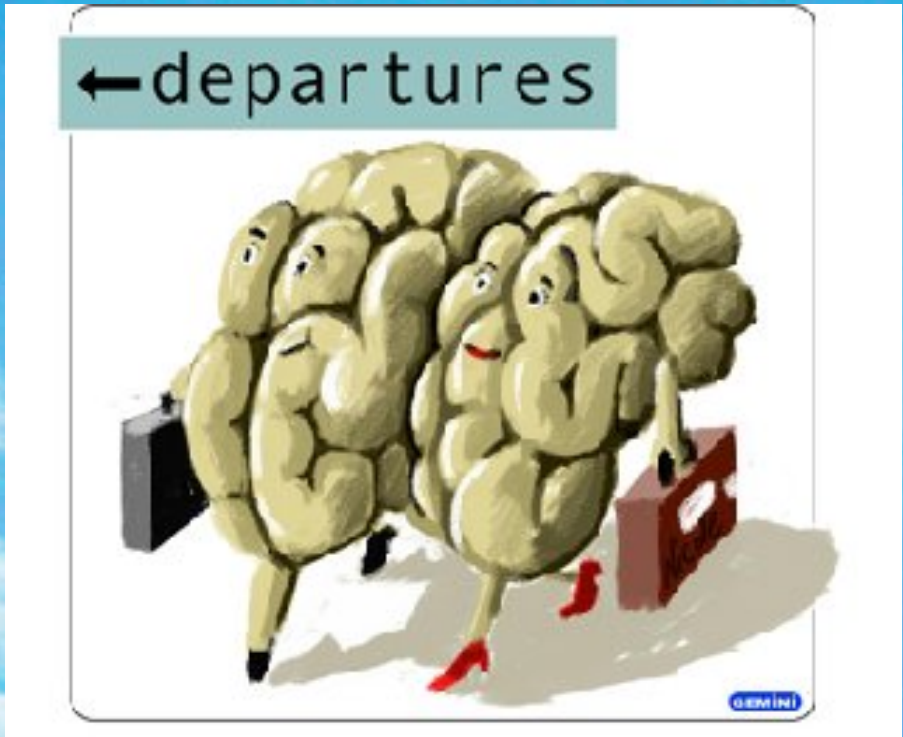
Highly skilled; Research Development & Teaching; Research & Development Basic and Applied Research; Basic Research

Growth of high skilled expats in the USA (1993 - 2003)

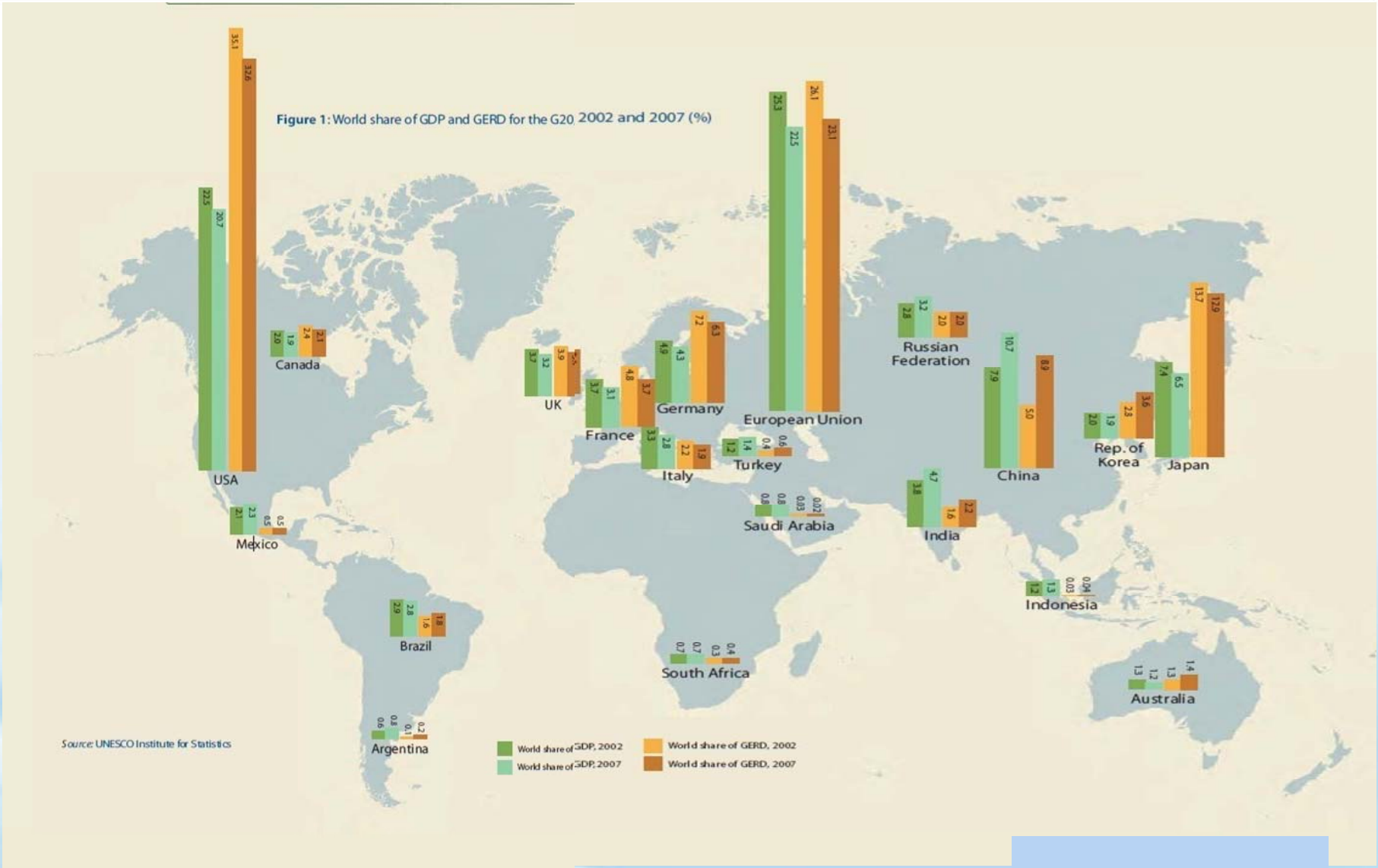


Global circulation of skills: Where are we heading to?

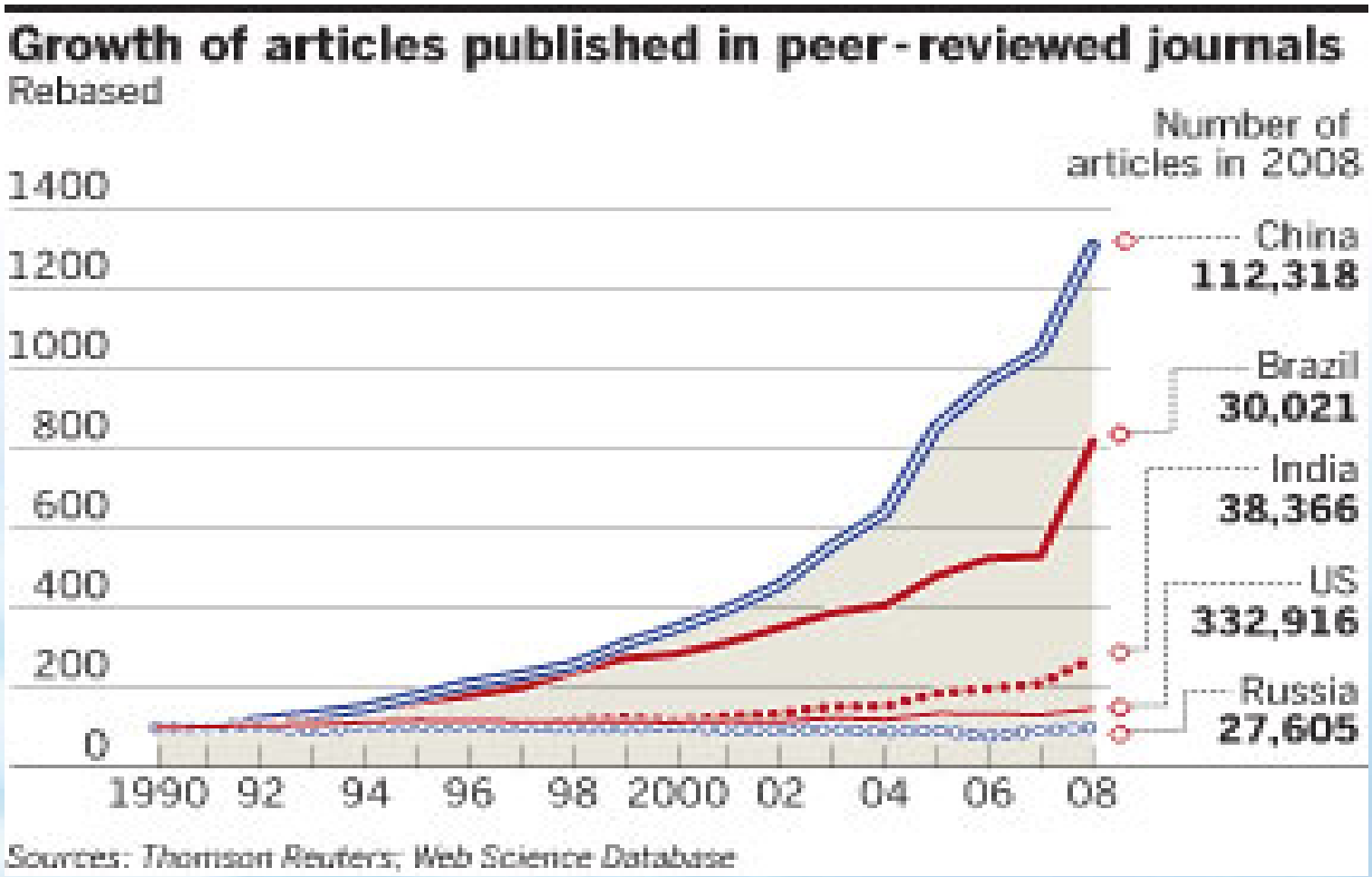
Brown Bag seminar – Discussion break



World share of GDP & GERD from 2002 to 2007



Indicators of academic output : publications



Indicators of innovation output : patents

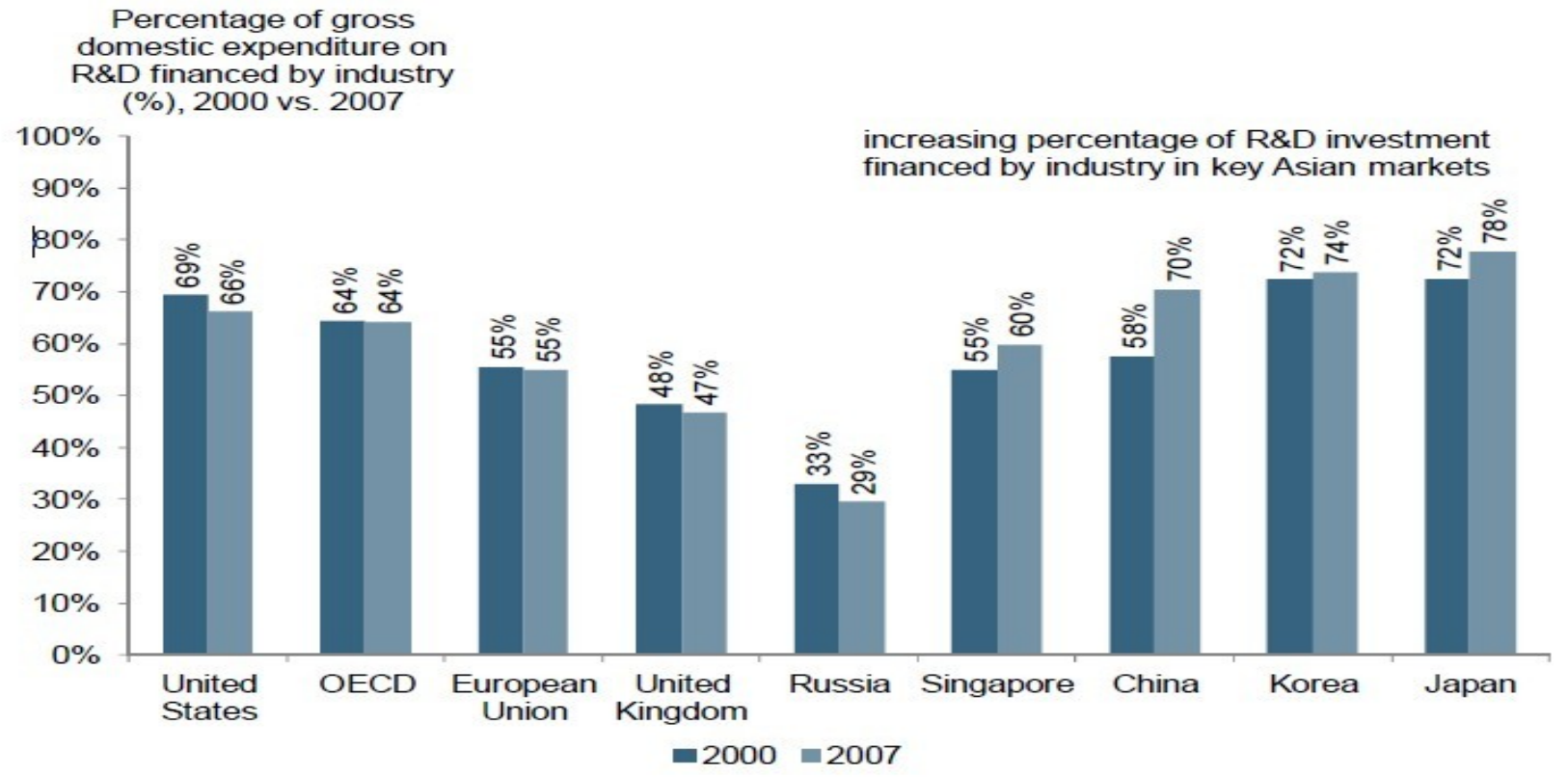
USPTO and Triadic patent familles by inventor's region, 2002 and 2007

	USPTO patents				Triadic patents			
	Total		World share(%)		Total		World share(%)	
	2002	2007	2002	2007	2002	2006	2002	2006
North America	92245	84913	55.1	54.2	25768	20496	45.5	43.1
Latin America and the Caribbean	450	355	0.3	0.2	115	101	0.2	0.2
Europe	31046	25387	18.5	16.2	17148	13249	30.3	27.8
Africa	151	134	0.1	0.1	47	48	0.1	0.1
Asia	47512	50313	28.4	32.1	15463	15197	27.3	31.9
Oceanla	1139	1516	0.7	1	549	834	1	1.8

Private investment in R&D – Asia vs others

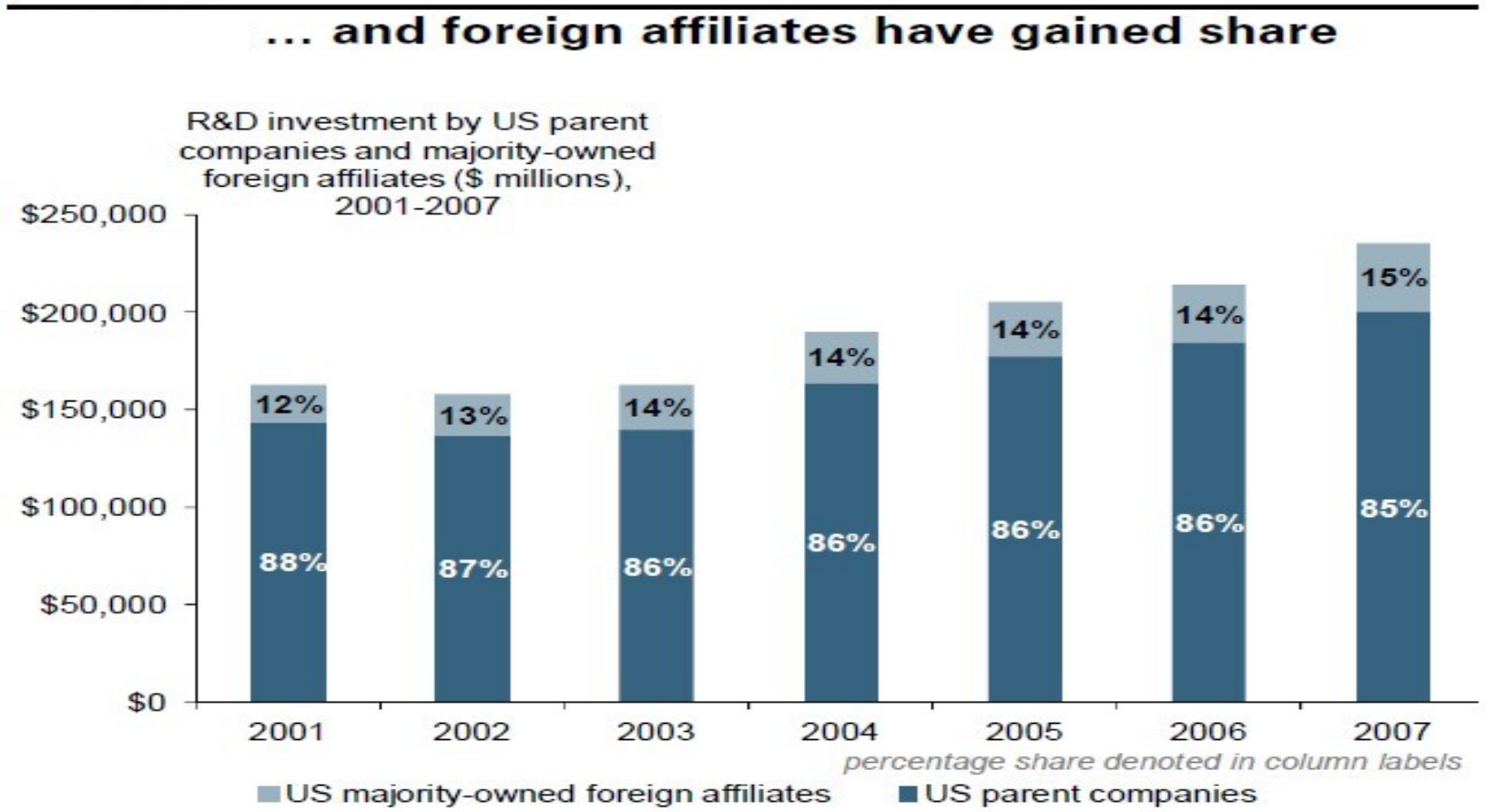
Increasing percentage of R&D investment financed by the private sector

Approximately 75% of R&D spending in China, Korea and Japan now driven by industry



Source: OECD.

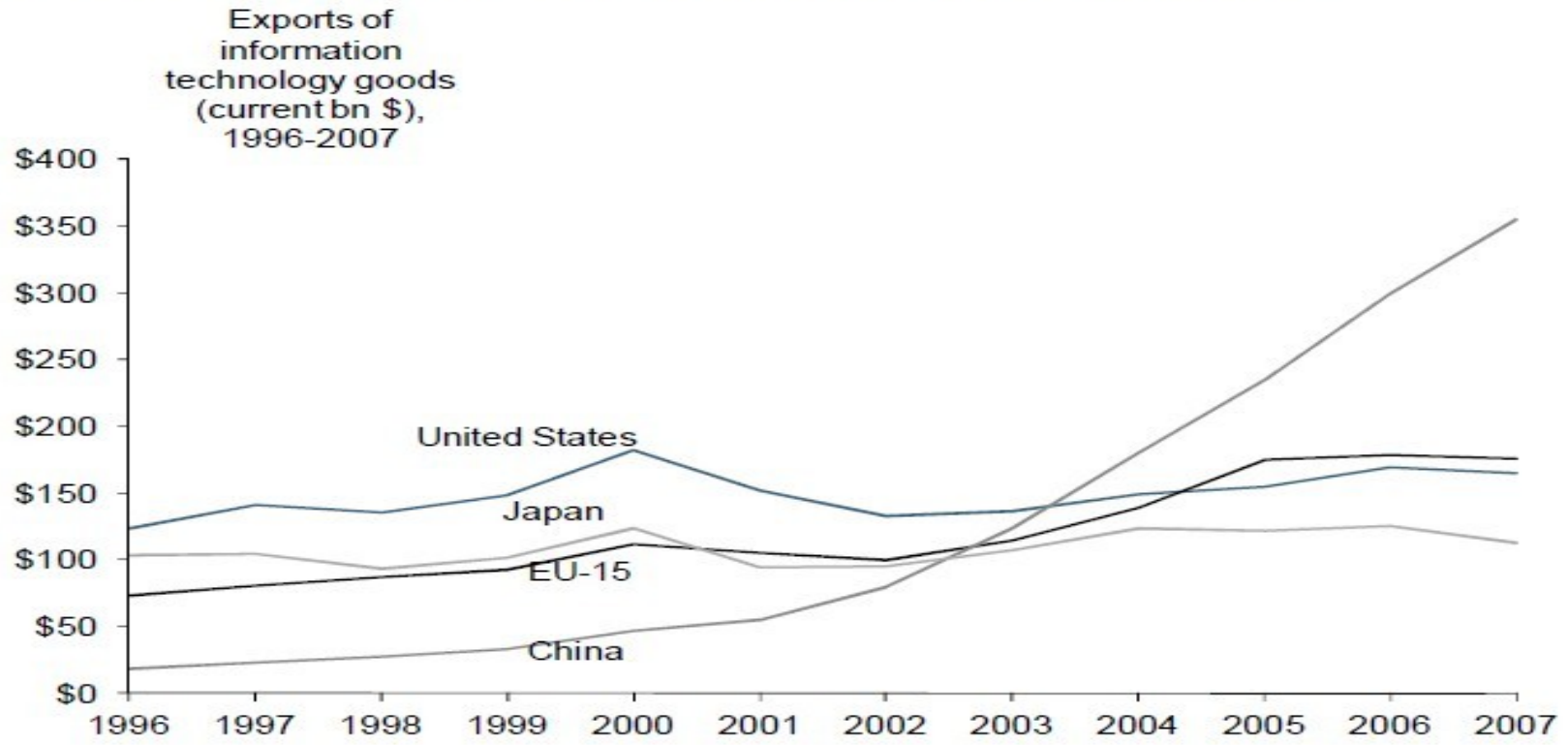
Dissemination of knowledge via MNCs



Source: National Science Foundation, Global Markets Institute.

Exports of hight tech products

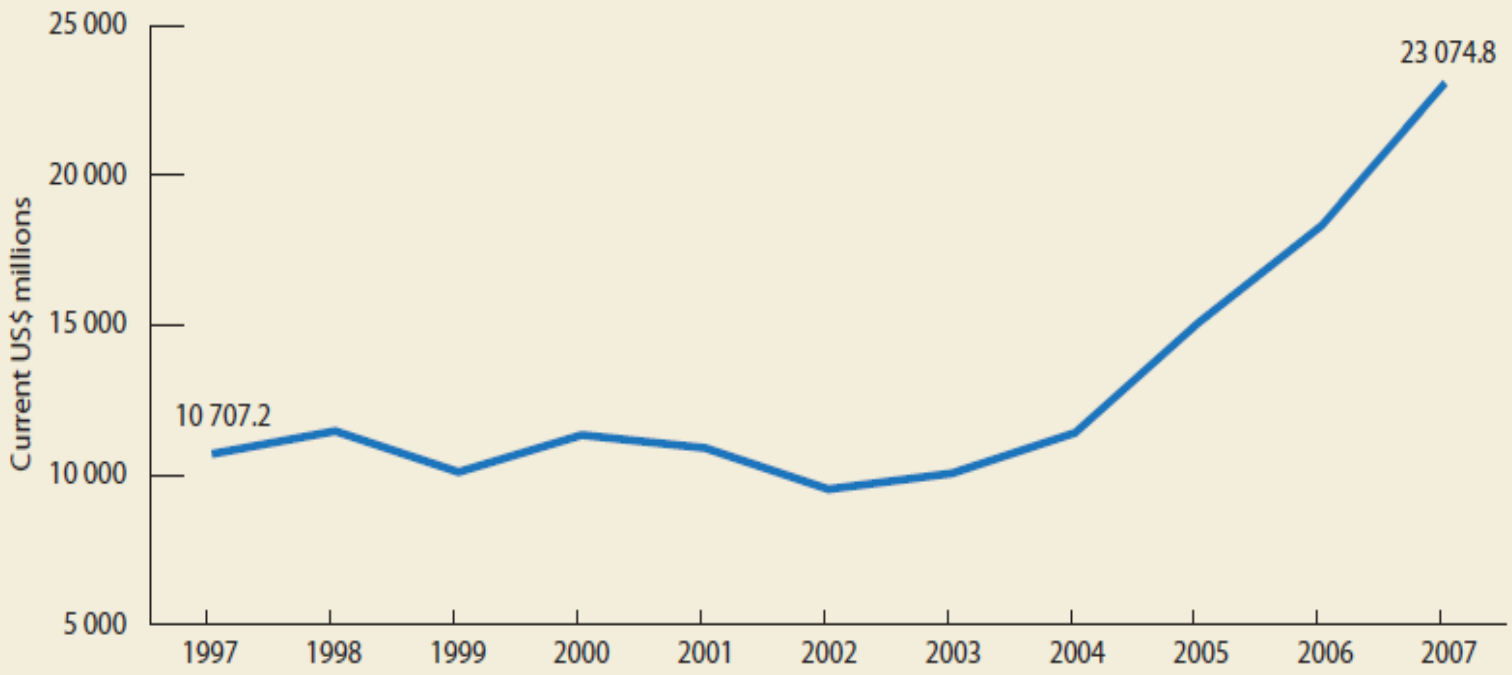
... as China surpasses the United States to become the world's leading exporter of IT goods



Source: OECD.

Gross Expenditure in R&D x 2 in 10 years in LA

GERD in Latin America, 1997–2007



Note: does not include data for Venezuela and Dominican Republic

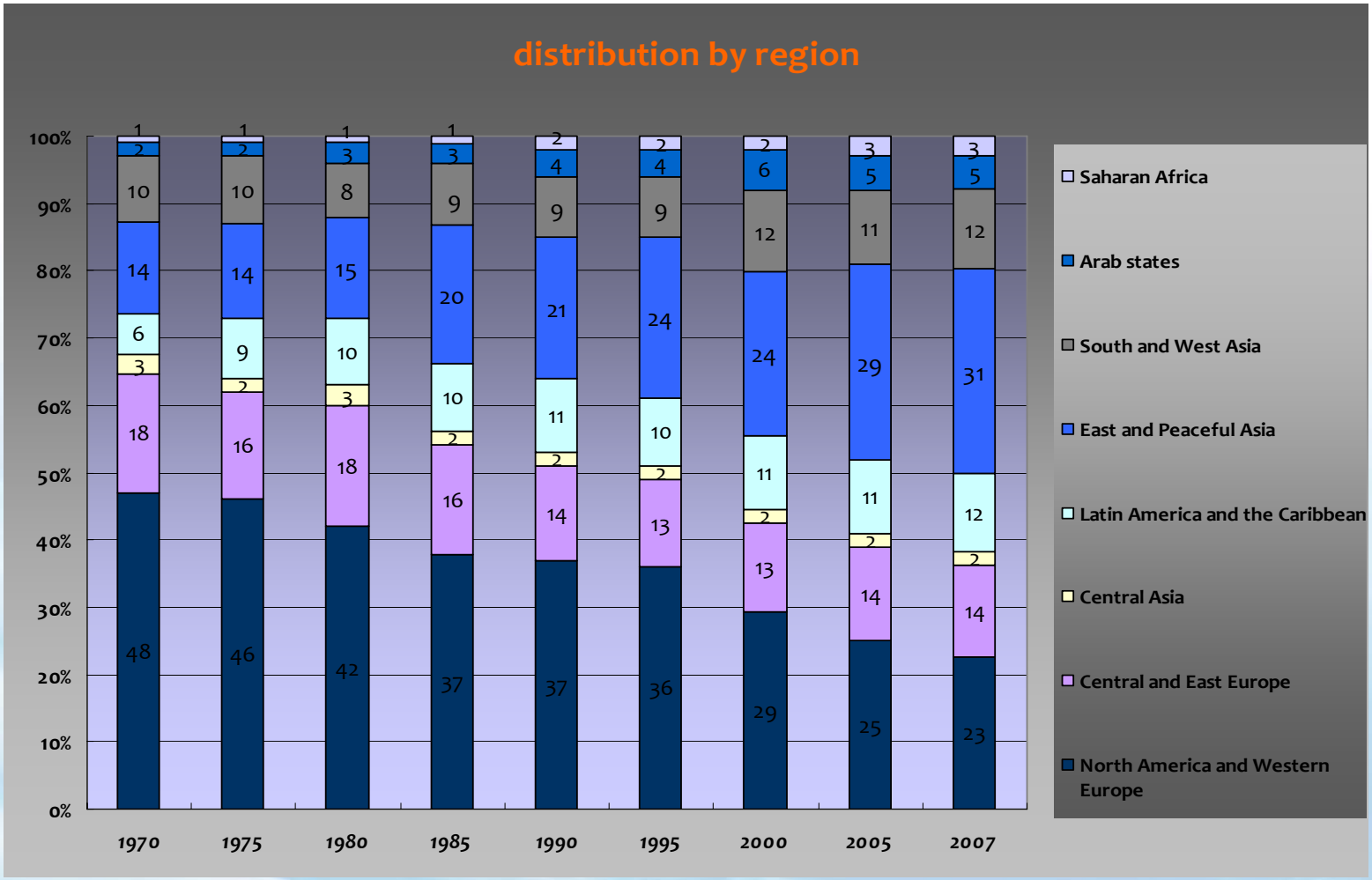
Source: RICYT (2009) *El Estado de la Ciencia*

The end of digital divide?

Internet users per 100 population, 2002 and 2008

	2002	2008
North America	59.06	74.14
Latin America and the Caribbean	8.63	28.34
Europe	24.95	52.59
Africa	1.2	8.14
Asia	5.79	16.41
Oceanla	43.62	54.04

Enrolment in higher education by region in percentage of enrollment of the World, 1970-2007

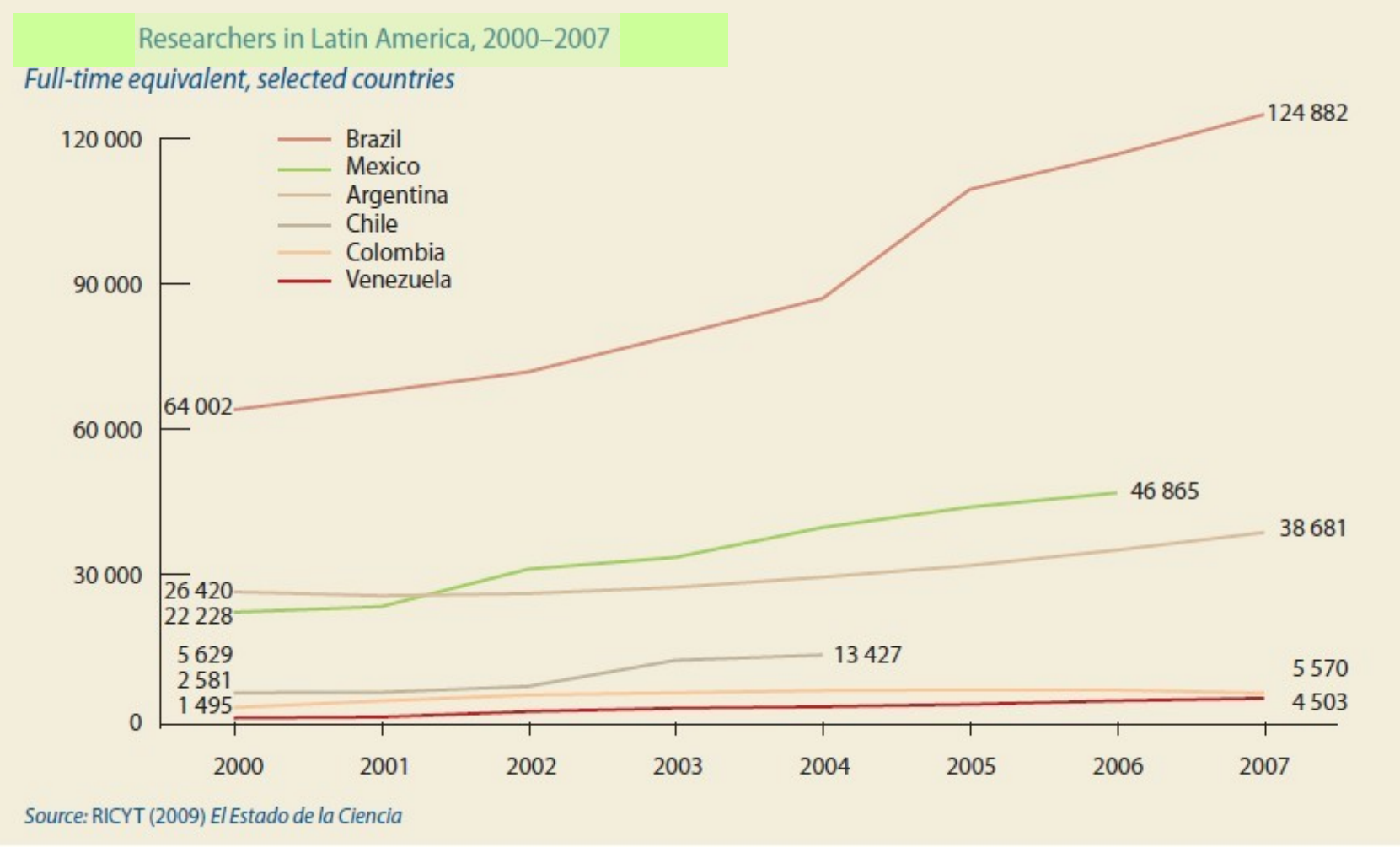


Source: Institute of statistics of UNESCO

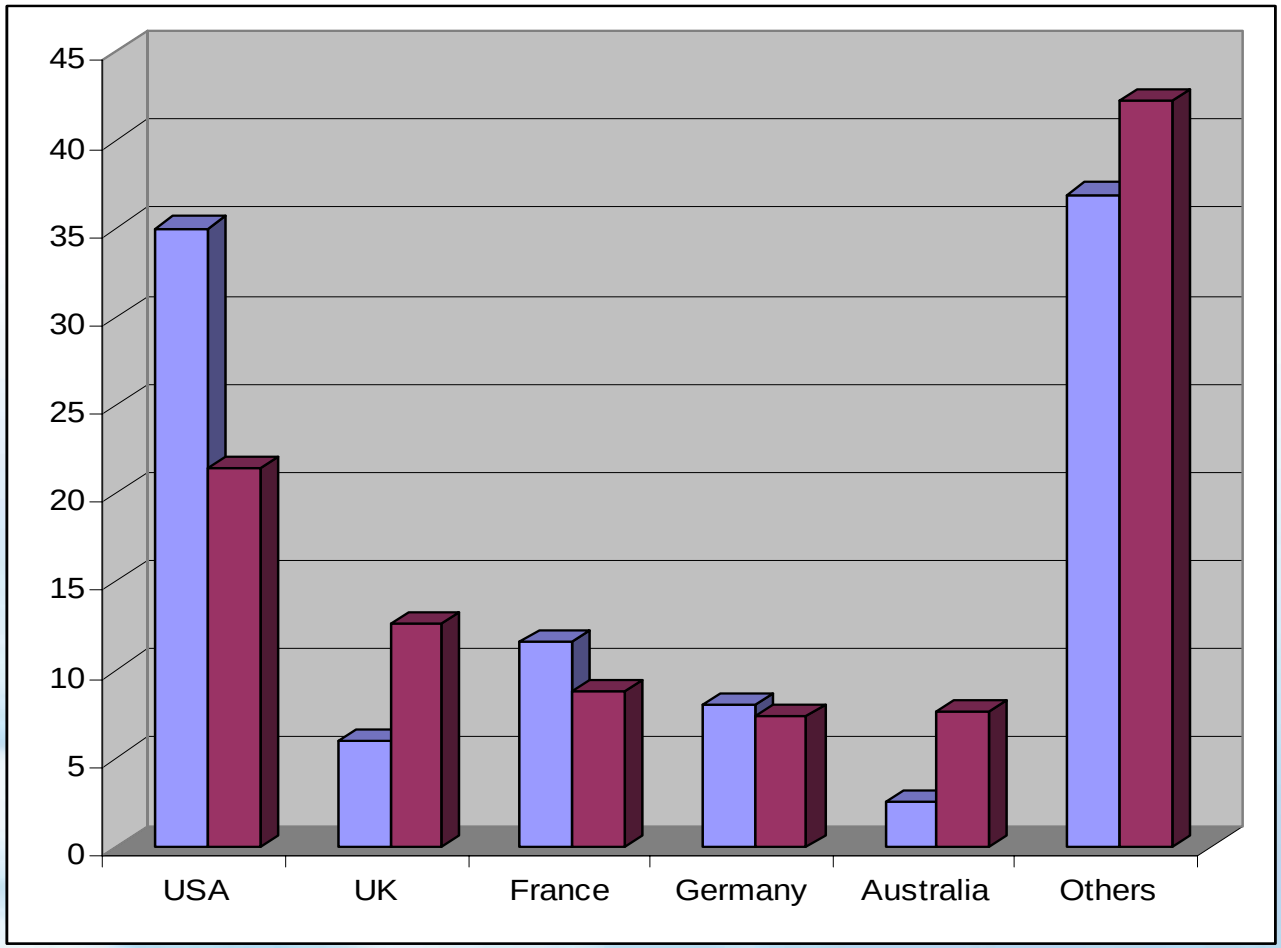
Key indicators on world researchers, 2002 and 2007

	Researchers (thousands)		World share of researchers(%)		Researchers per million inhabitants		GERD perr researcher (PPP$ thousands)	
	2002	2007	2002	2007	2002	2007	2002	2007
North America	1458.5	1579.8	25.1	21.9	4483.2	4624.4	204.2	252.8
Latin America and the Caribbean	169.9	252.1	2.9	3.5	317.1	442.5	130.0	137.4
Europe	1870.7	2123.6	32.2	29.5	2348.5	2638.7	127.5	147.9
Africa	129.0	158.5	2.2	2.2	150.2	164.3	53.1	64.6
Asia	2064.6	2950.6	35.5	40.9	554.2	745.9	103.6	125.2
Oceanla	118.0	145.1	2.0	2.0	3677.6	4208.7	95.1	125.9

Impressive growth of R&D staff in Latin America

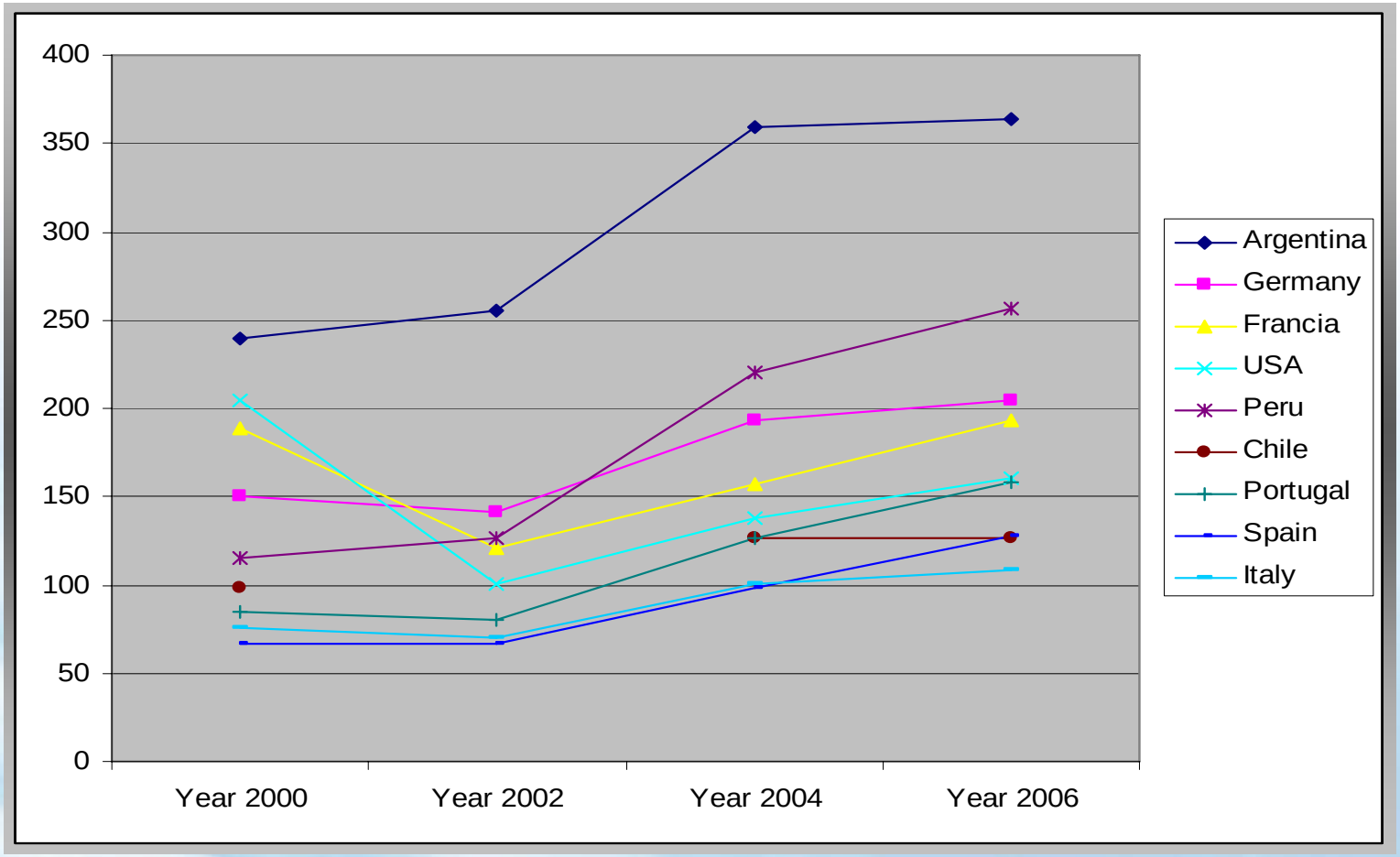


Major receiving countries of students in international mobility between 1990 (blue) and 2007 (purple)



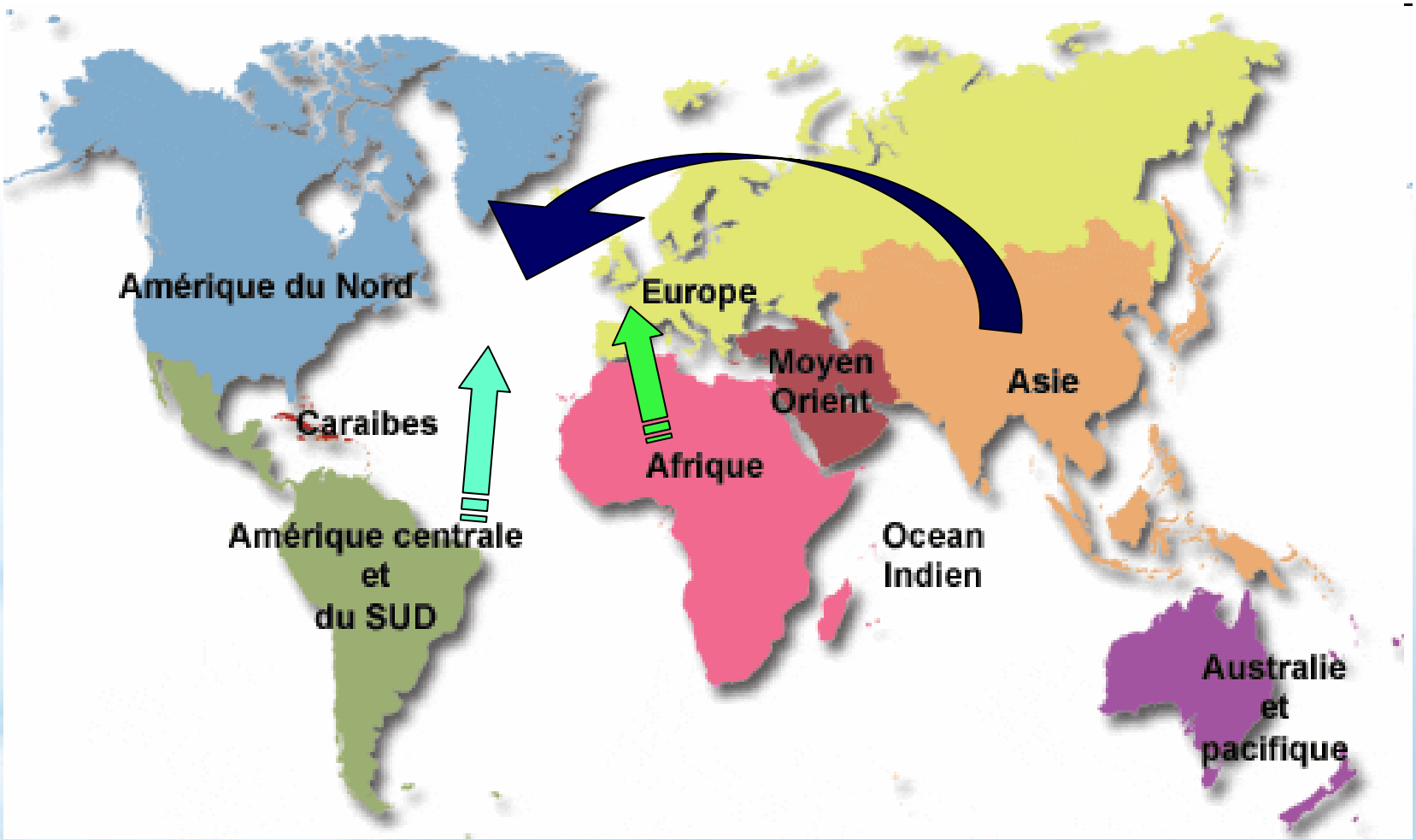
Source : Unesco (1990 and 2009)

Major countries of origin of foreign scientists in Brazil (2000-2006)

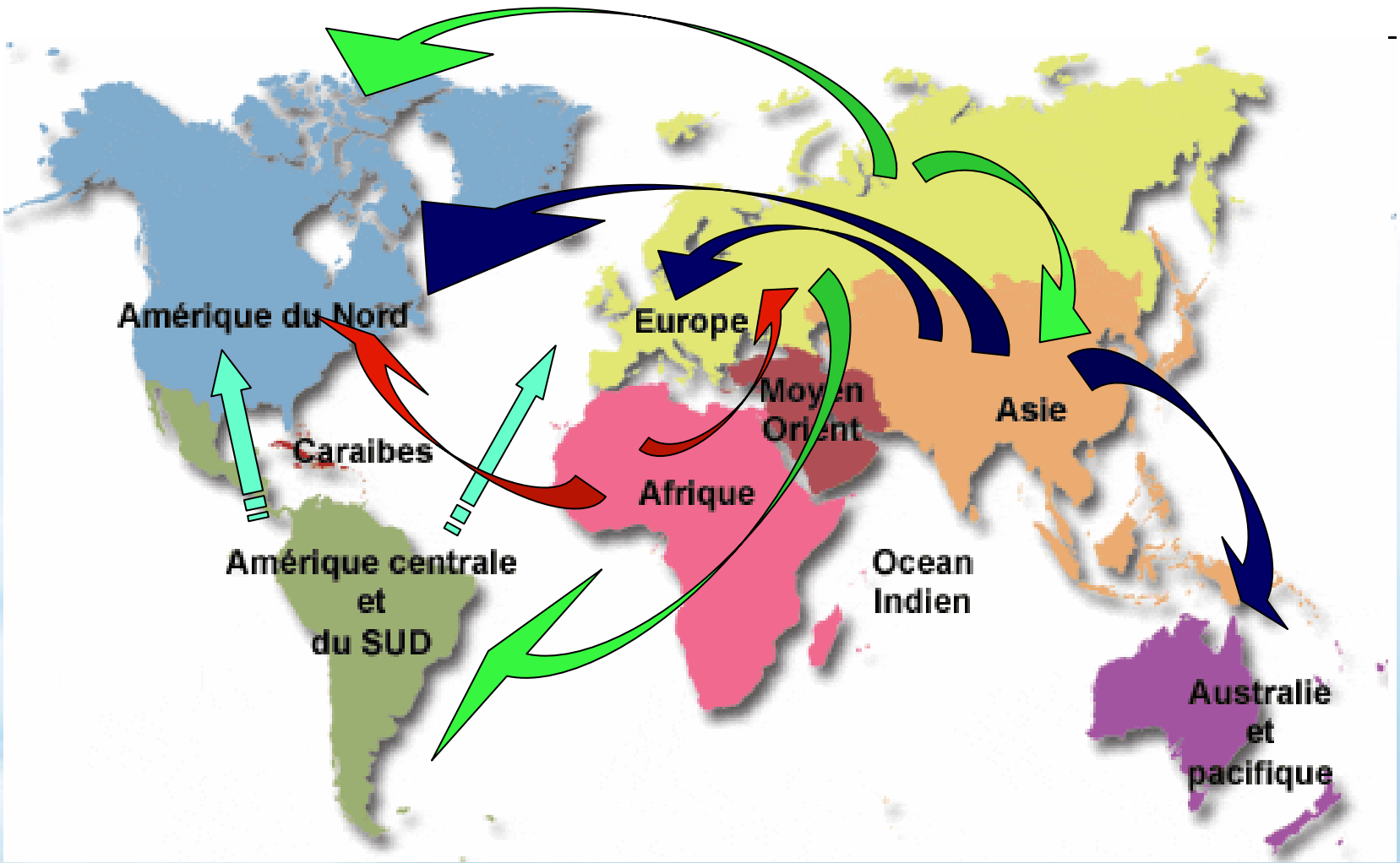


Souce: census 2006

Evolution of world skills flows from centre - periphery…



Evolution of world skills flows
… to the multipolar world



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Thank you