National Research University - Higher School of Economics, Moscow
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What's going on

The state, higher education and society

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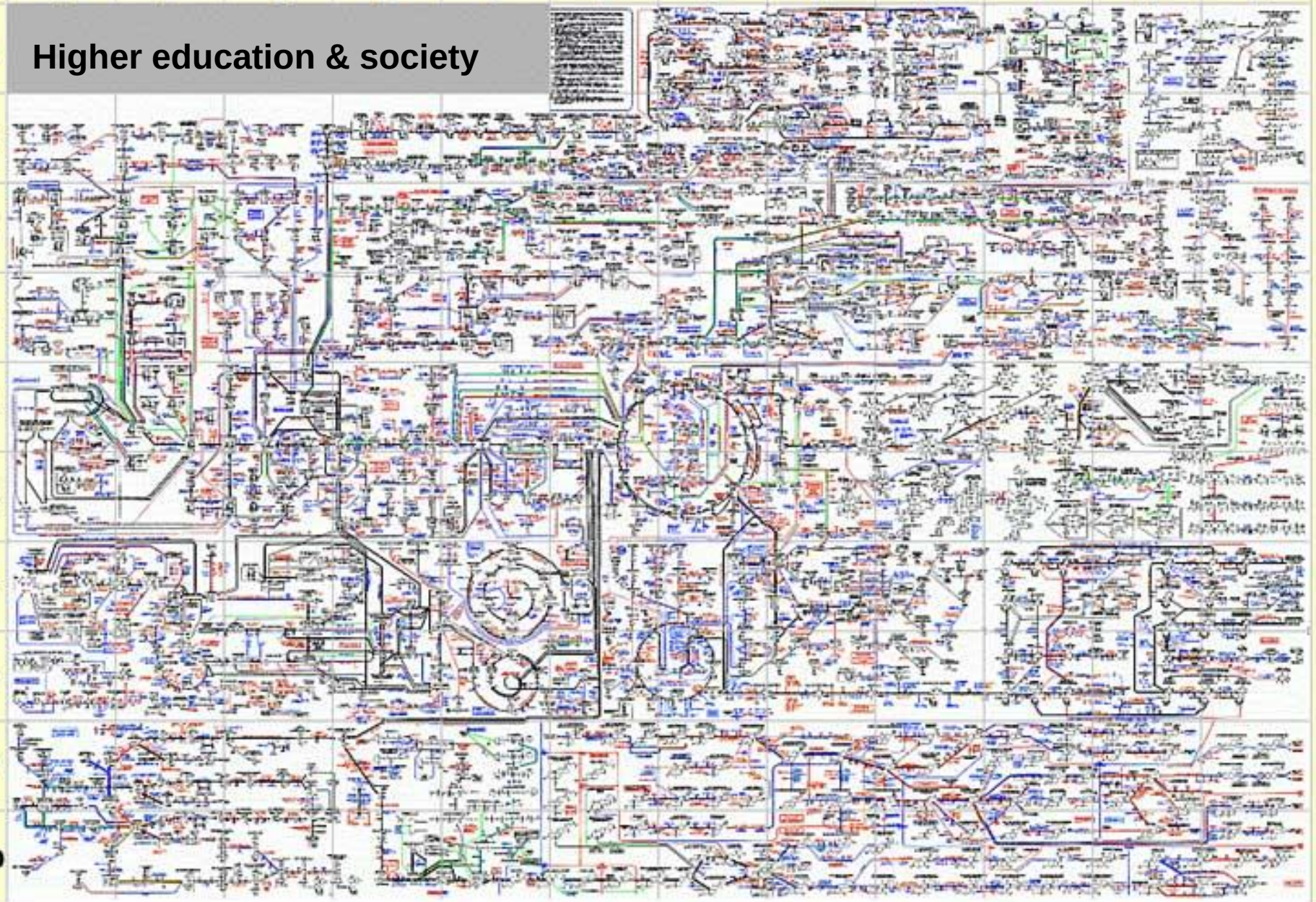
1. What drives the growth of higher education?
2. What drives the growth and spread of research?
3. What model of higher education dominates?
4. Will that model always be as dominant?
5. Does higher education create equality of opportunity?

The relationship between higher education and society:

how it works—a simple diagram

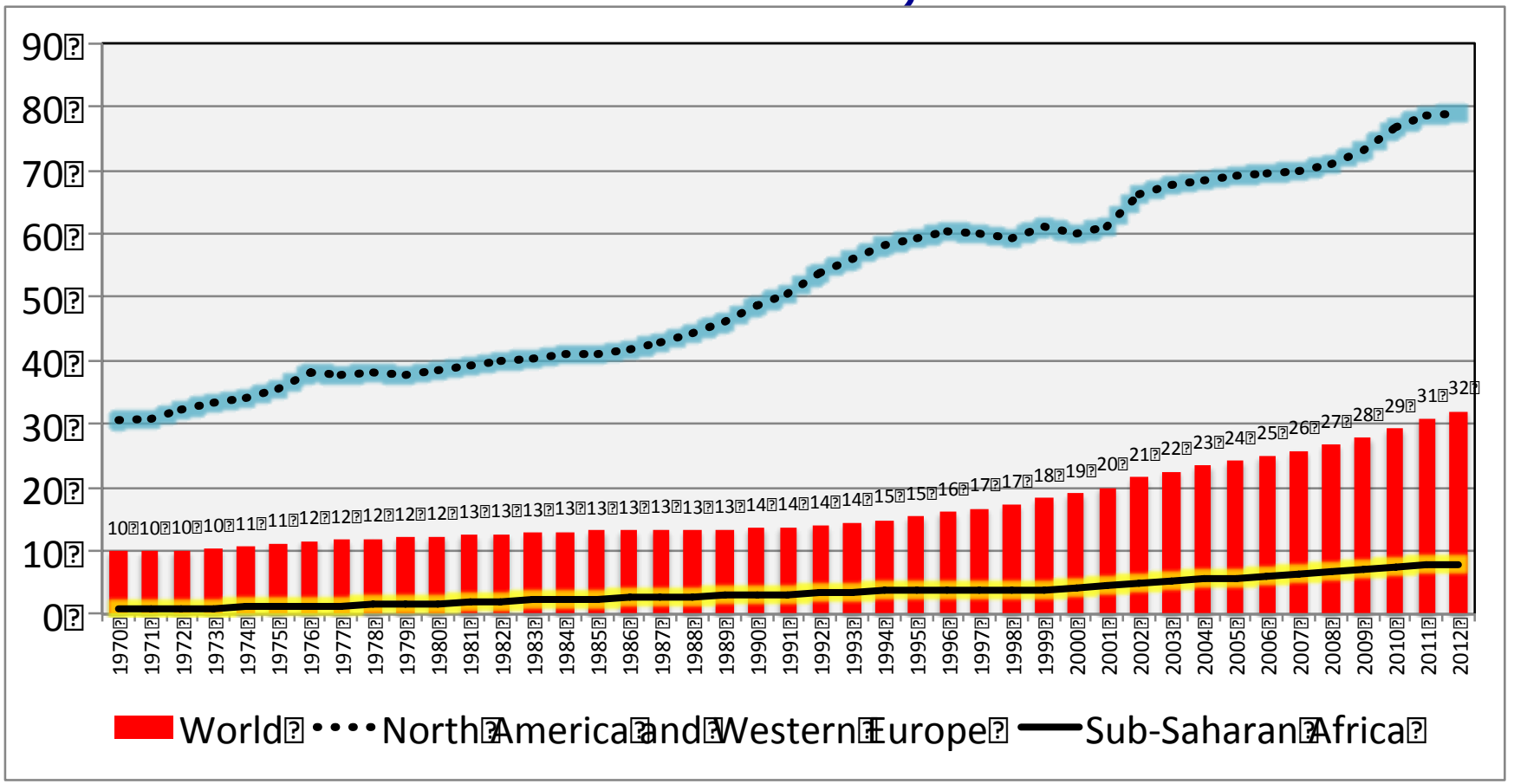
Higher education & society



1. What drives the growth of higher education?

Participation grows at 1% a year

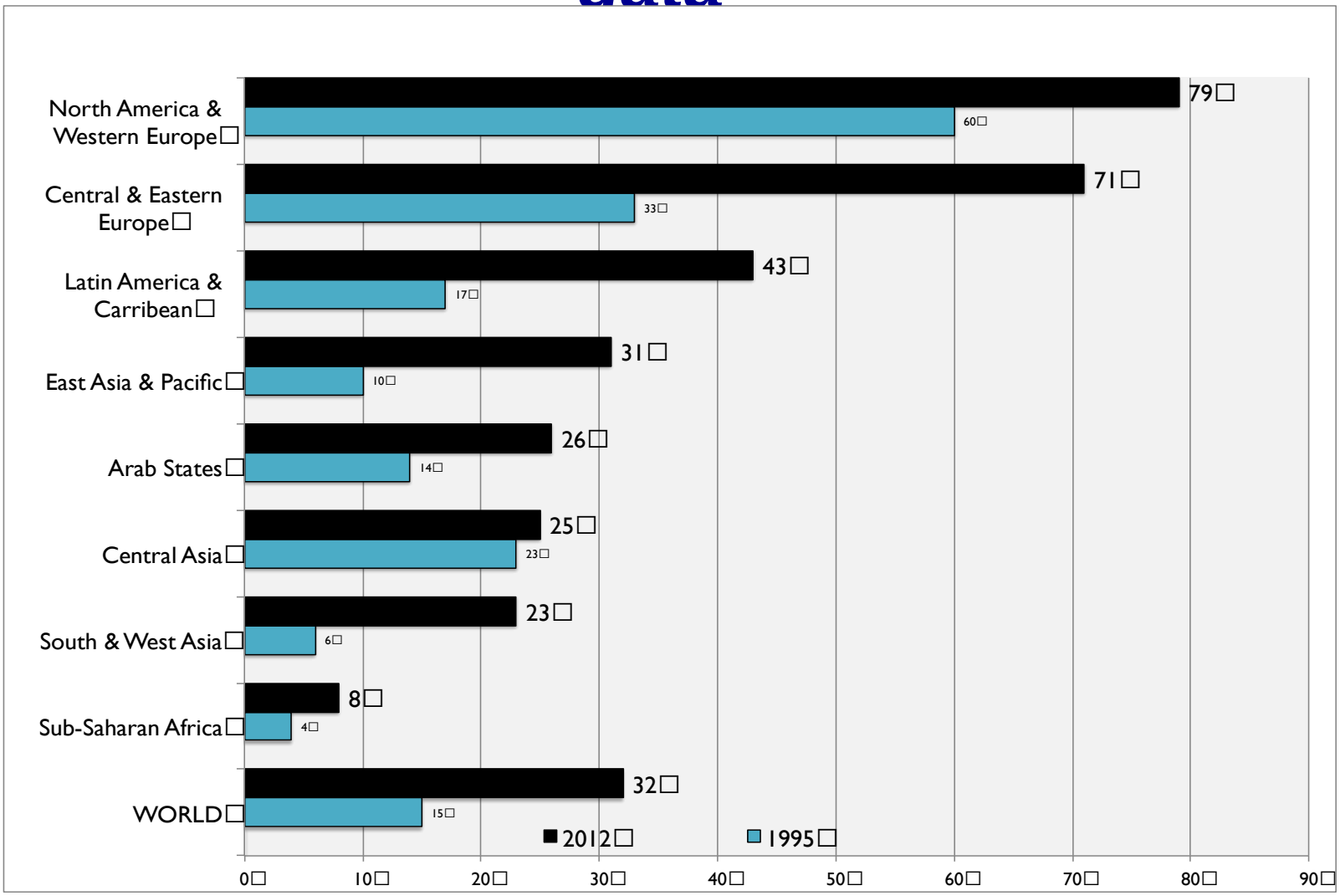
GTER World, North America/Western Europe, Sub-Saharan Africa, 1970-2012



UNESCO data 2015

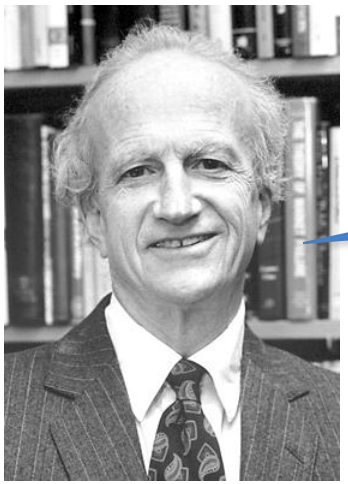
Growth in all regions

GTER by world region, 1995/2012, UNESCO data



What drives participation growth?

Economic development? Labour markets? States? Popular demand?



I say growth is fully explained by ECONOMIC demand. Don't listen to Marginson!

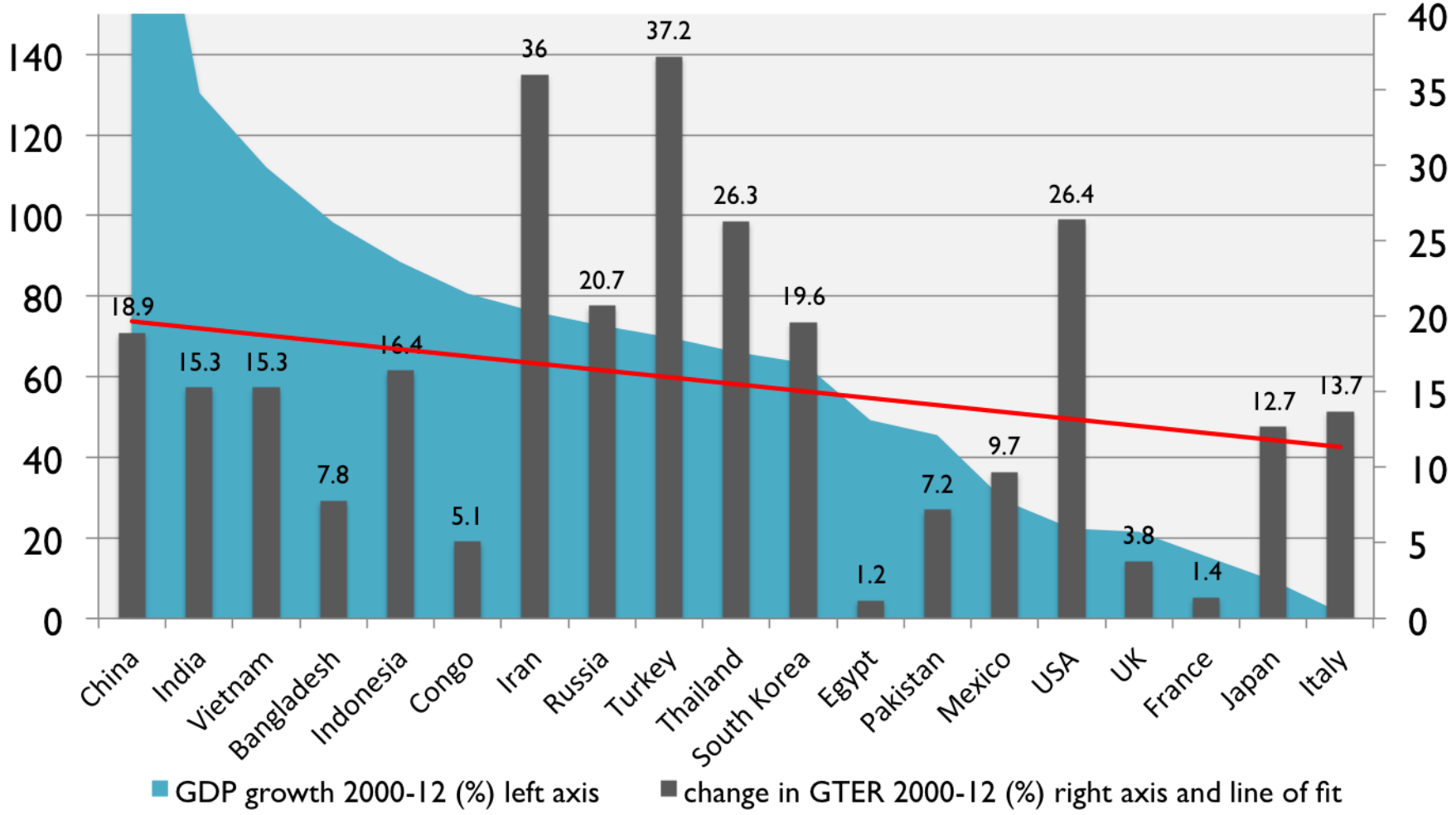
Gary Becker, author of *Human Capital* (1964)

"The rapid expansion of higher education in the 1960s does not coincide with especially large historical changes in occupational structures, job skill requirements, or labour market demands that would create a need for massive expansion of higher education"—John Meyer and Evan Schofer 2005

GDP growth and change in GTER 2000-12

constant 2005 USD for GDP, world's 20 highest population countries for which GTER data are available

Data for 2003-2012 in Egypt and Pakistan. GTER data for Germany n.a. China's GDP growth = 219%



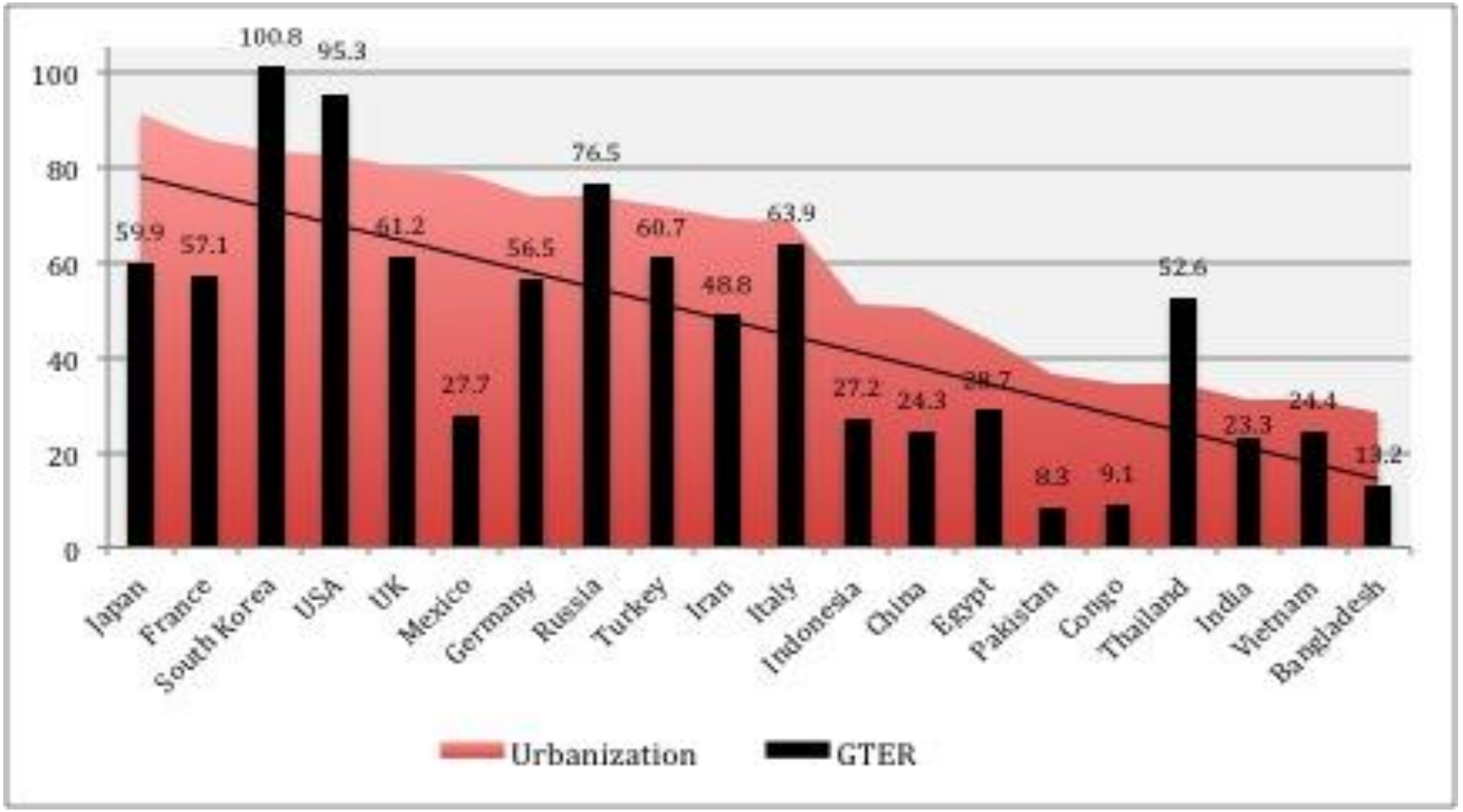
Martin Trow and the social drivers of participation

- “There will be continued popular demand for an increase in the number of places in colleges and universities. It seems to me very unlikely that any advanced industrial society can or will be able to stabilize the numbers”
- Despite “loose talk about graduate unemployment or of an oversupply … people who have gone on to higher education thereby increase their chances for having more secure, more interesting, and better paid work throughout their lives”
- Graduate unemployment is not a problem because of the “educational inflation of occupations” (Trow, 1974, pp. 40-41)

Urbanisation and the GTER, 2011

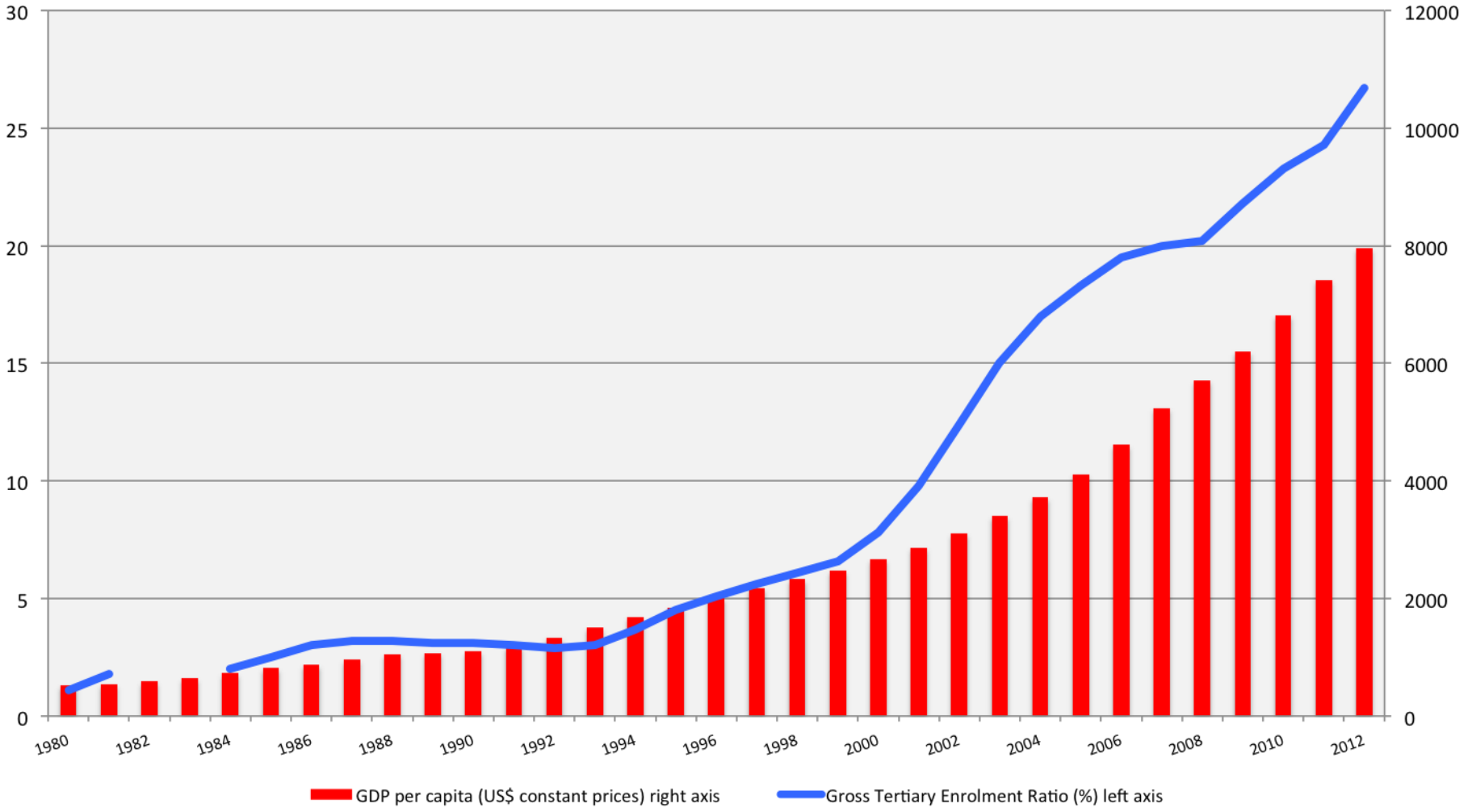
Proportion of population living in urban areas (%) and Gross Tertiary Enrolment Ratio (%), World's 20 largest nations by population, arranged in order of intensity of urbanization, 2011

GTER data not available for Brazil, Nigeria, Philippines and Ethiopia so next available countries used



Is the state the driver?

GTER and GDP per capita, China 1980-2012



States enable and faciliate the take-off of participation in tertiary education, but they never seem to reverse it. Once the flood gates of middle class demand are opened …

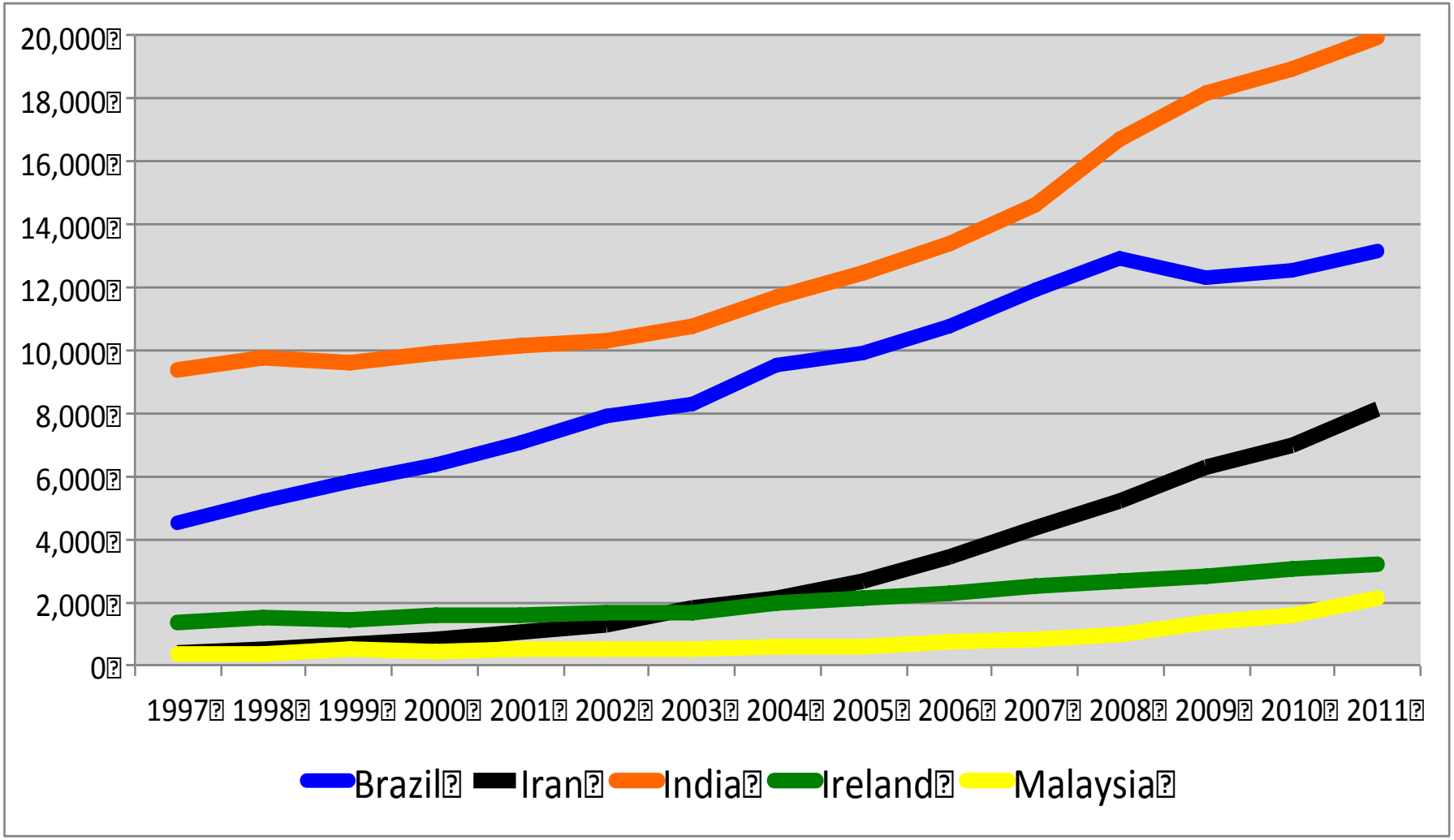
2. What drives the growth and spread of research?

Components of a national innovation system

Fast growing science systems

Journal papers per year, 1997-2011

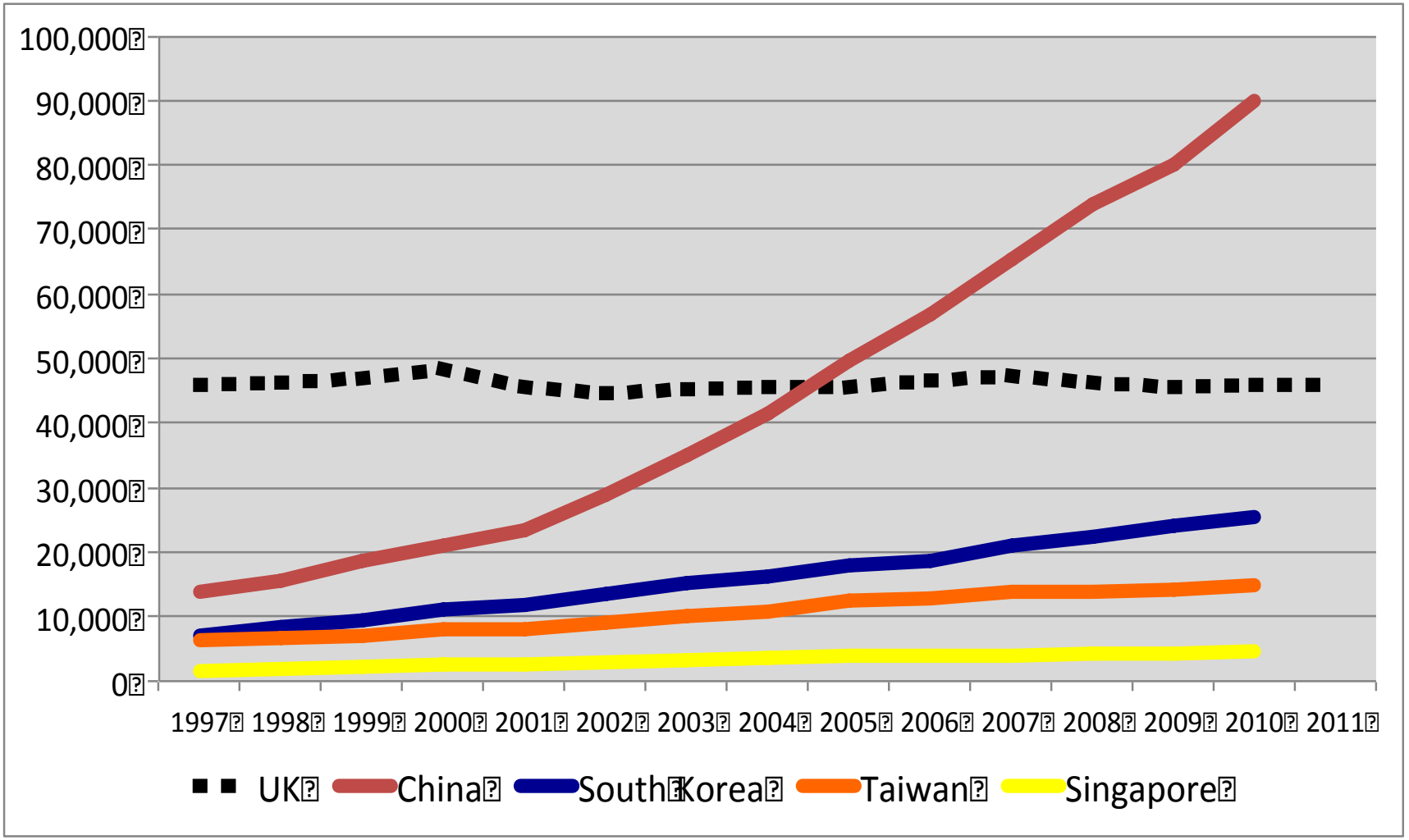
US National Science Foundation data, 2014



Growth of East Asian science

Journal papers per year, 1997-2011

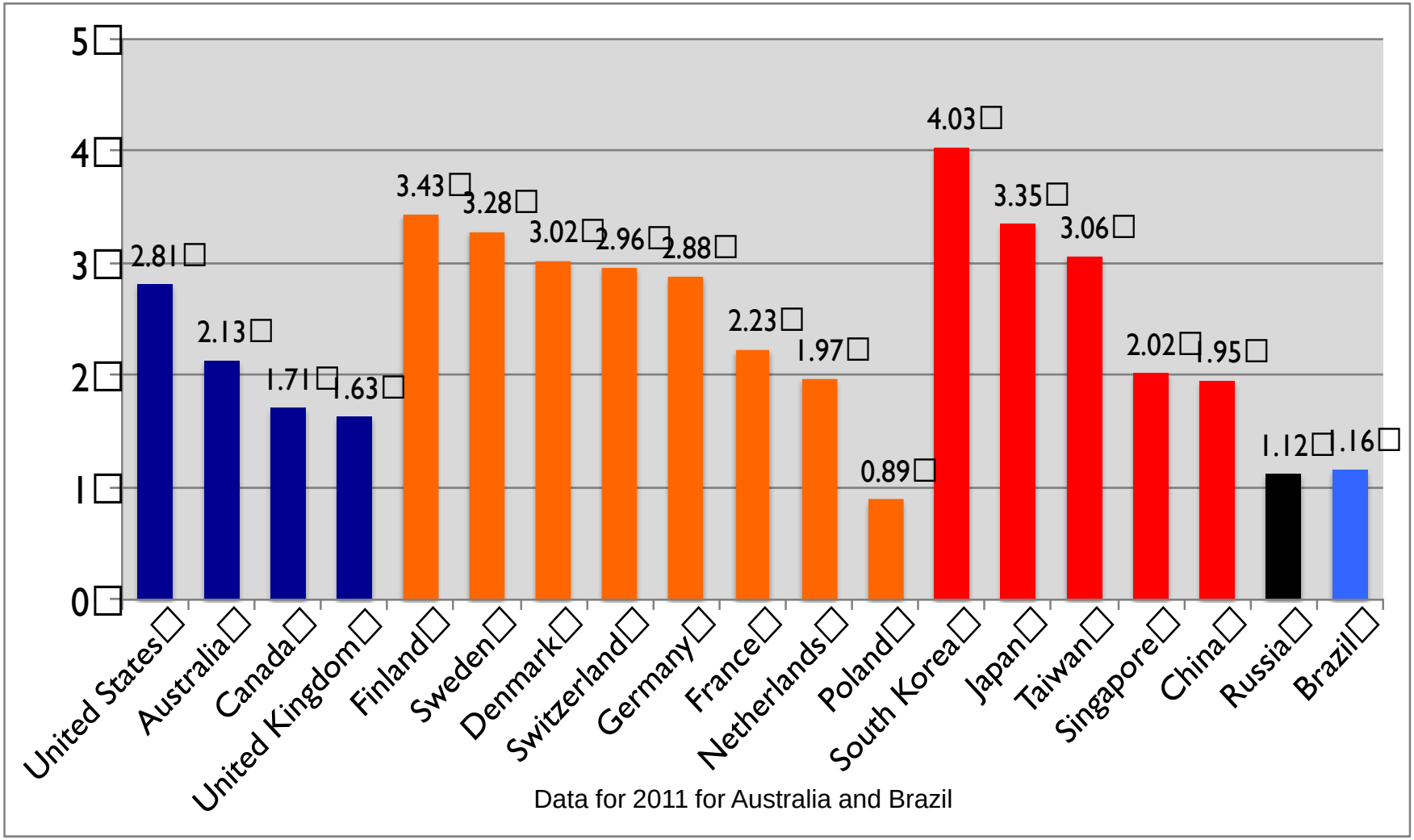
Source: US National Science Foundation data, 2014



States invest in research capacity

R&D as a proportion of GDP, 2012

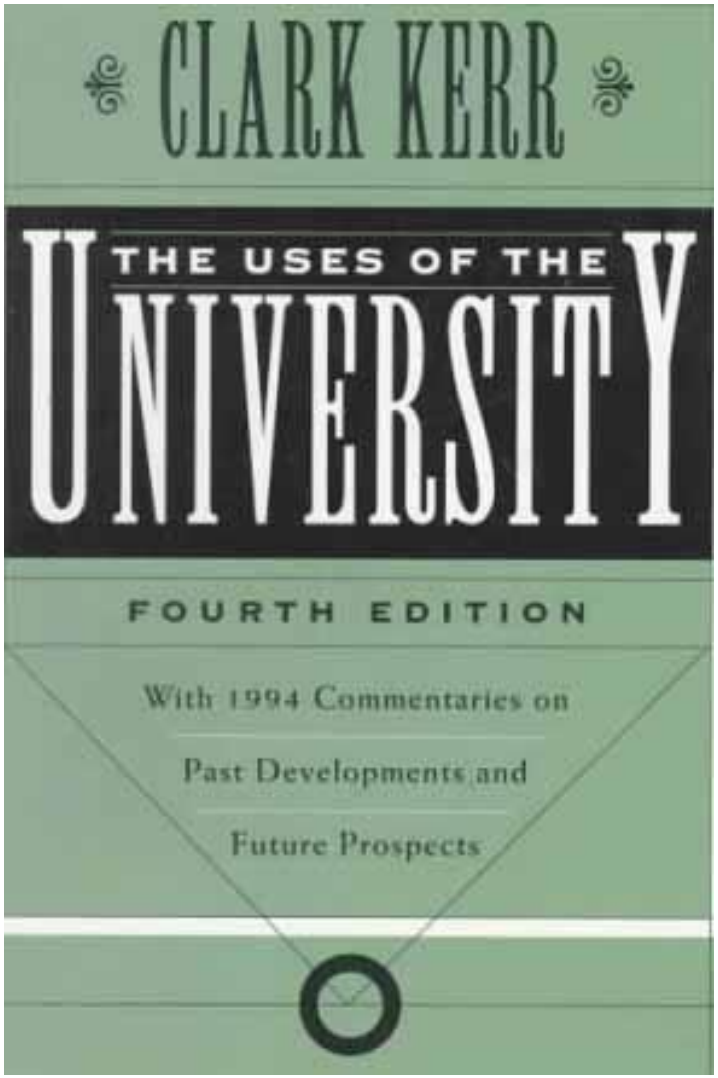
Selected countries, OECD data 2015

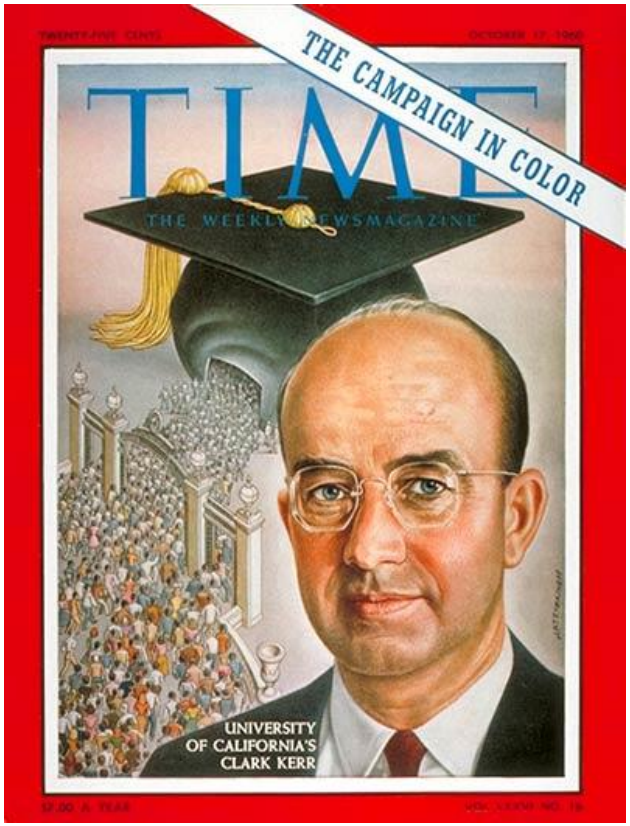


3. What model of higher education dominates?

Californian Master Plan 1960

- Excellence combined with access in a three-tier system, in which upward educational mobility was meant to be secured by the transfer function
  - University of California research campuses (top 12.5% of school leavers)
  - California State University campuses (top 33% of school leavers)
  - two-year Californian Community Colleges (everyone, open access)
- Principle of universal access was fundamental
- Clark Kerr's research 'multiversity' at the top of the hierarchy
- Facilitated by open society with fast-growing middle class
- Depended on taxpayer consent to growing funding of higher education, and on a system of public schooling that would be competent in all districts and for all social groups





Time cover story on Clark Kerr and the Californian Master Plan, 1960

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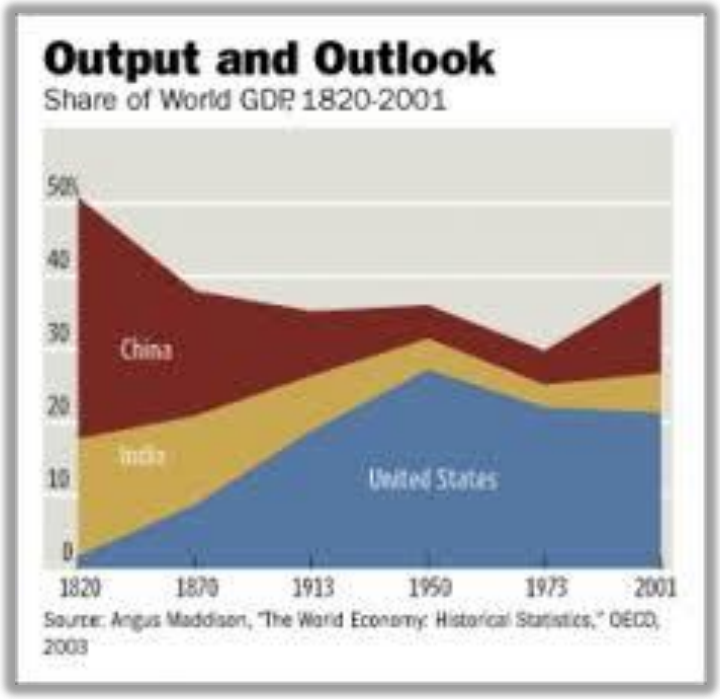
Shanghai Jiao Tong ranking indicators (ARWU)

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 *Nature* and *Science* 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%

Leiden Ranking top 15

Universities ranked 1-15 in world		Papers 2010-2013	% papers in top 10%	Number of papers in	
				top 1%	top 10%
1 Harvard U	USA	31,137	22.1	1026	6892
2 Stanford U	USA	14,102	21.9	442	3083
3 U Toronto	Canada	19,948	13.7	289	2738
4 U Michigan	USA	17,283	15.1	264	2616
5 U California, Berkeley	USA	11,804	21.8	360	2573
6 MIT	USA	10,040	24.8	400	2486
7 U California, Los Angeles	USA	14,002	17.4	301	2438
8 Johns Hopkins U	USA	14,850	15.8	293	2348
9 U Oxford	UK	12,935	17.8	293	2301
10 U Washington, Seattle	USA	13,716	16.6	267	2276
11 U Pennsylvania	USA	12,649	17.2	269	2178
12 U California San Diego	USA	11,707	18.1	276	2124
13 U Cambridge	UK	12,170	17.3	279	2100
14 Columbia U	USA	11,807	17.5	261	2064
15 U California, S. Francisco	USA	10,199	19.8	264	2017

4. Will that model always be as dominant?



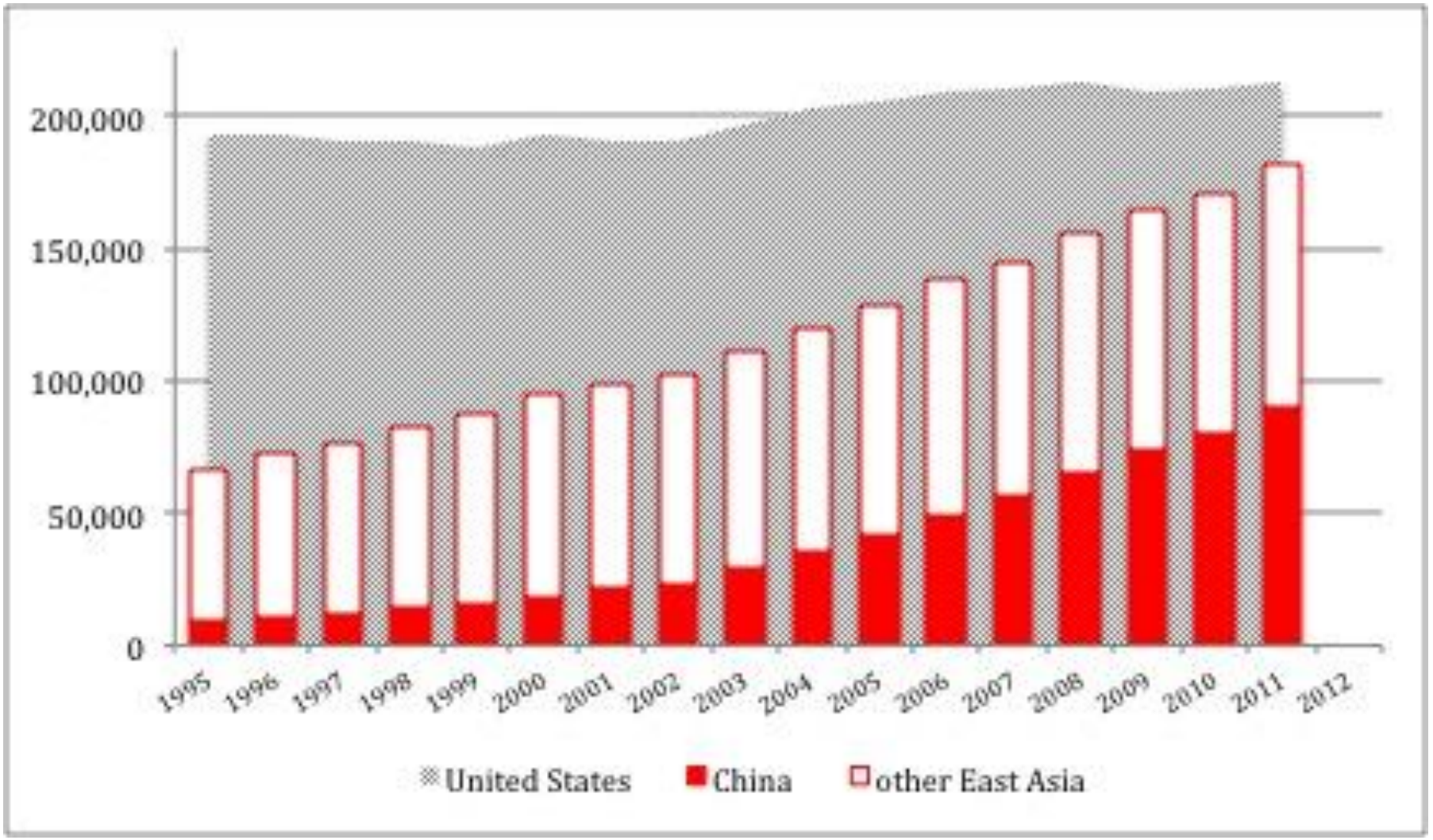
Stronger research universities in Europe

European universities in ARWU top 80 in 2004 (14)		European universities in ARWU top 80 in 2014 (19)	
27	Fed Instit Tech Zurich SWITZERLAND	19	Fed Instit Tech Zurich SWITZERLAND
39	U Utrecht NETHERLANDS	35	Paris 6 P&M Curie FRANCE
41	Paris 6 P&M Curie FRANCE	39	U Copenhagen DENMARK
45	TU Munich GERMANY	42	Paris 11 Sud FRANCE
46	Karolinska Instit SWEDEN	47	Karolinska Instit SWEDEN
48	Paris 11 Sud FRANCE	49 eq	Heidelberg U GERMANY
51	U Munich GERMANY	49 eq	U Munich GERMANY
57	U Zurich SWITZERLAND	53	TU Munich GERMANY
59	U Copenhagen DENMARK	56	U Zurich SWITZERLAND
63	Leiden U NETHERLANDS	57	U Utrecht NETHERLANDS
68	U Oslo NORWAY	60	Uppsala U SWEDEN
72	U Helsinki FINLAND	66	U Geneva SWITZERLAND
74	Uppsala U SWEDEN	67	Ecole Normale Superieure FRANCE
79	U Goettingen GERMANY	69	U Oslo NORWAY
		70	Ghent U BELGIUM
		73	U Helsinki FINLAND
		74	Aarus U DENMARK
		77	Leiden U NETHERLANDS
		78 eq	Stockholm U SWEDEN

Shanghai ARWU data (2014) for world top 80 research universities *(UK universities excluded)*

Annual science papers 1995-2012 USA, China and other East Asia

(Other East Asia = Japan, South Korea, Taiwan and Singapore)



WCU growth in Chinese systems

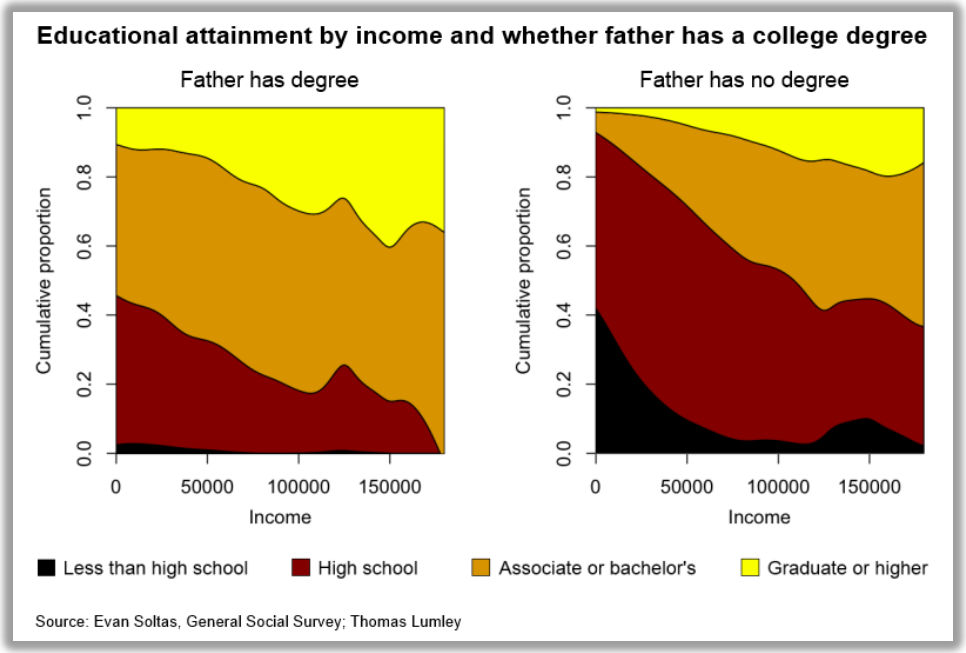
Shanghai ARWU top 500, 2004 & 2014

	2004	2014
China mainland	8	32
Hong Kong SAR	5	5
Taiwan China	3	7
Singapore	2	2
Total	18	46

Growth top 10% papers, 2006-09 to 2010-13

university	system	2006-09	2007-10	2008-11	2009-12	2010-13	*growth*
NU Singapore	SINGAPORE	1042	1094	1173	1264	1374	31.9%
Nanyang TU	SINGAPORE	568	640	776	910	1103	94.2%
Tsinghua U	CHINA	819	875	953	1031	1217	48.6%
Zhejiang U	CHINA	730	780	896	994	1182	61.9%
Peking U	CHINA	622	705	773	867	1026	65,0%
Shanghai JT U	CHINA	664	698	771	901	1020	53.6%
Fudan U	CHINA	469	536	638	727	891	90.0%
U S&T China	CHINA	503	509	536	576	675	34.2%
U Hong Kong	HONG KONG	558	578	622	643	661	18.5%
Seoul National U	KOREA	742	768	812	911	984	32.6%
National Taiwan U	TAIWAN	604	613	647	660	691	14.4%
MIT	USA	2091	2142	2260	2391	2486	18.9%
U Cambridge	UK	1796	1867	1975	2080	2100	16.9%
L Moscow State U	RUSSIA	144	144	158	155	166	15.3%

5. Does higher education create equality of opportunity?



Economic inequality

Income inequality = inequality of income from labor + inequality of income from capital (property, dividends, financial holdings etc)

Wealth inequality = inequality in capital possessed

- Most people earn majority of their income from labor. Only top 0.1% earn majority of their income from capital.
- Wealth is always much more concentrated than labor incomes. Top decile (10%) typically gets 25-30% of income from labor but 50-90% of income from capital.
- Concentration of wealth and income in hands of the top 10%, top 1%, and top 0.01%, are all increasing

The heyday of equality of opportunity: USA 1950s/1970s

Postwar growth and 'flat' wage structures, broad mobility, birth of mass HE systems

"During the decades that followed World War II, inherited wealth lost much of its importance, and for the first time in history, perhaps, work and study became the surest routes to the top."

~ Thomas Piketty, *Capital in the Twenty-first Century*, 2014, p. 241

Income shares top 1%/ lower 50%

Thomas Piketty, *Capital in the Twentyfirst Century*, 2014

	EUROPE 1910 High inequality	SCANDINAVIA 1970s/1980s Low inequality	EUROPE 2010 Medium-high	United States 2010 High inequality
TOP 1% share of labor income	6%	5%	7%	12%
TOP 1% share of capital holdings	50%	20%	25%	35%
TOP 1% share of total income	20%	7%	10%	20%
LOWER 50% share of labor income		35%	30%	25%
LOWER 50% share of capital holdings	5%	10%	5%	5%
LOWER 50% share of total income	20%	30%	25%	20%

“What primarily characterizes the United States at the moment is a record level of the inequality of income from labor (probably higher than in any other society at any time in the past, anywhere in the world, including societies in which skill disparities were extremely large) together with a level of inequality of wealth less extreme than the levels observed in traditional societies or in Europe in the period 1900-1910.”

~ Thomas Piketty, Capital in the Twenty-first Century, 2014, p. 265

If higher education generates human capital and earnings, is higher education to blame for earnings inequalities?

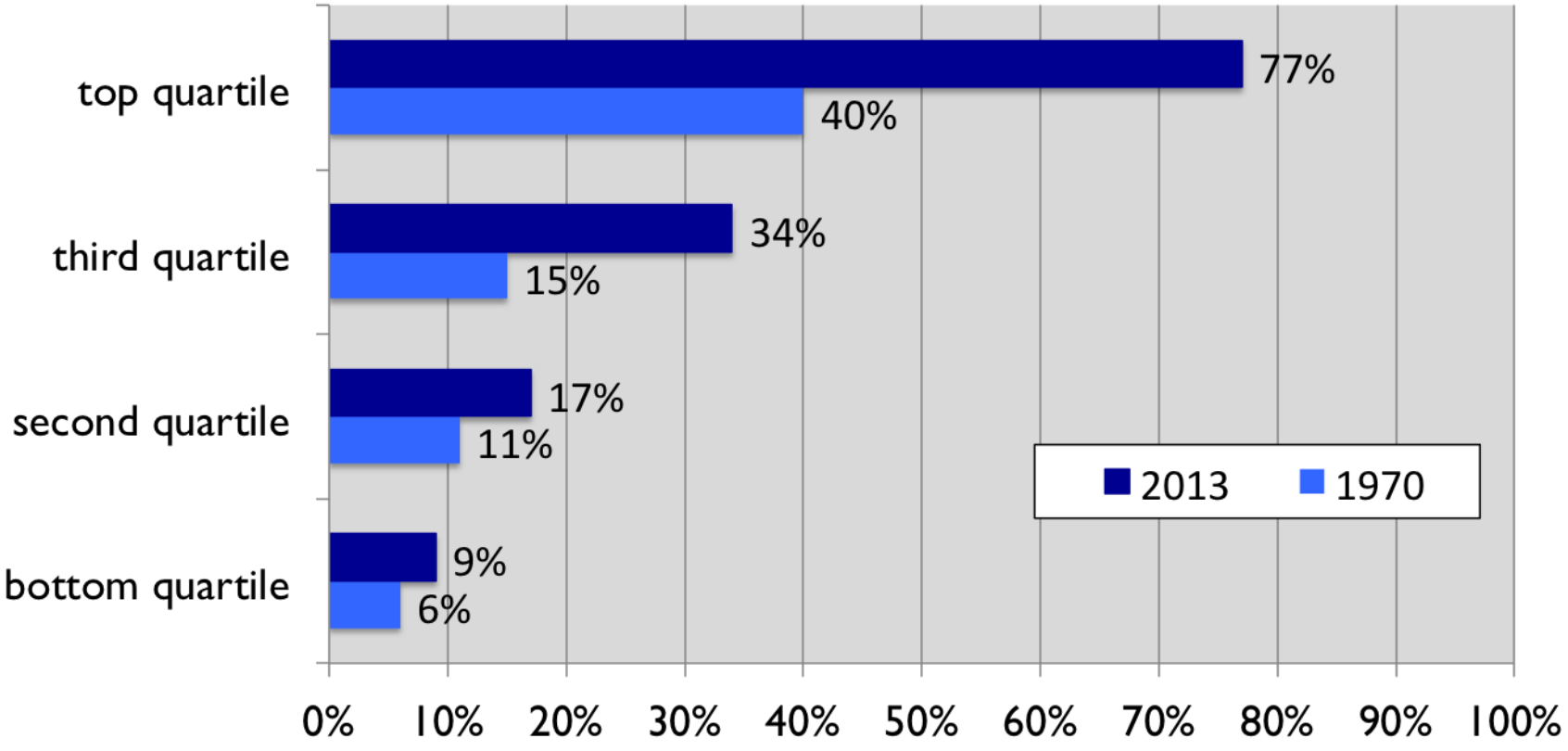
"Is it really the case that inequality of individual skills and productivities is greater in the United States today than in the half literate India of the recent past or in apartheid South Africa?"

"If that were the case, it would be bad news for US educational institutions, which surely need to be improved and made more accessible but probably do not deserve such extravagant blame" (Piketty 2014, p. 330)

Social inequality in achieved college degrees, USA 1970/2013

Bachelor degree by age 24, family income quartile

Source: The PELL Institute and Penn Ahead, 2015



Access to U.S. higher education hierarchy is income-stratified

Data from Soares 2007, p. 167

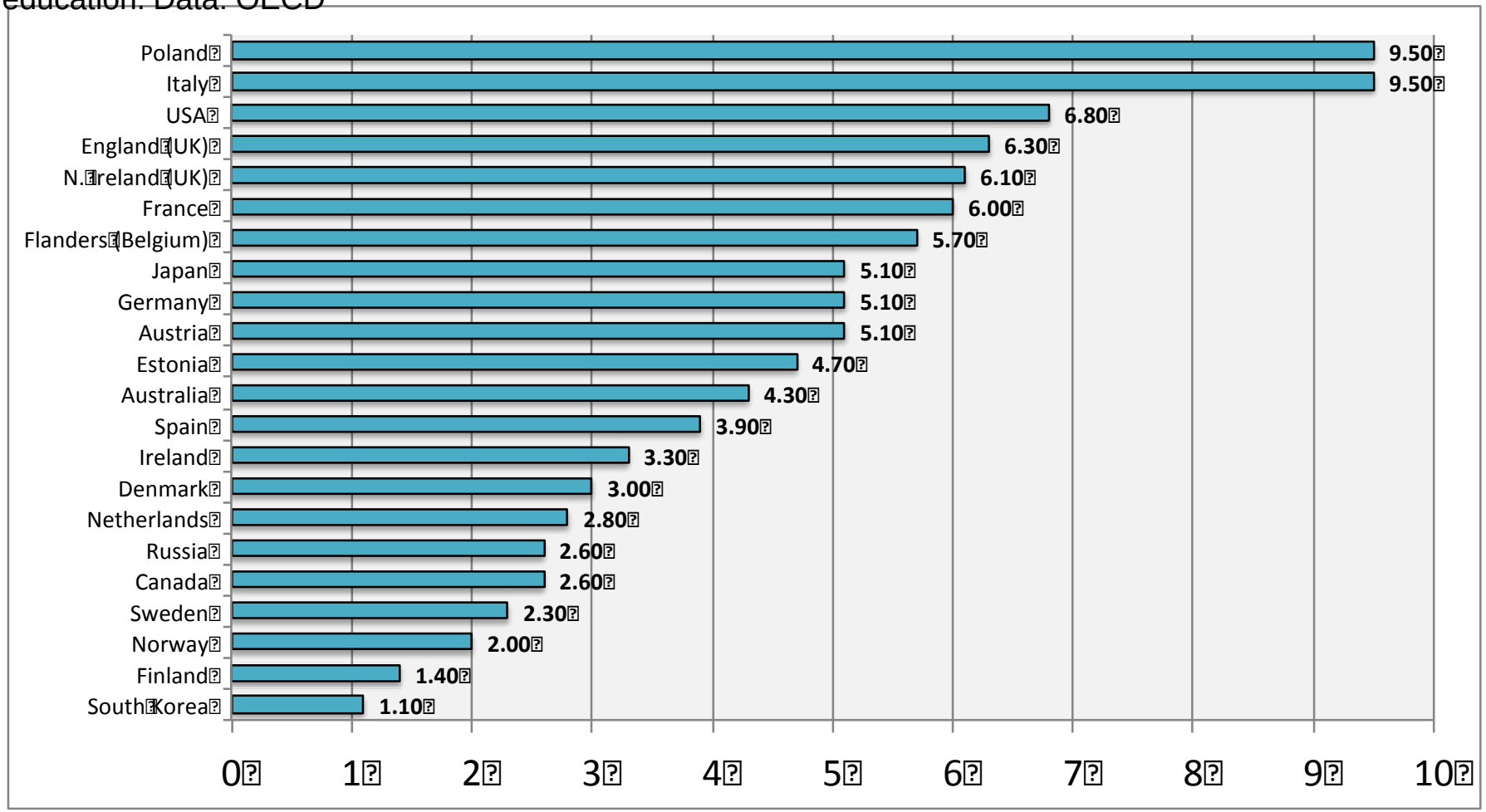
Category of institution	Proportion of all students drawn from the top 10% of American families in terms of family income
Tier 1	64%
Tier 2	44%
Tier 3	32%
Tier 4	21%
Tier 5	20%
Tier 6	11%
Tier 7	11%
University of California, Berkeley	28%

It is possible to sustain equality of opportunity in elite universities

- University of California Berkeley's intake is as academically strong as that of the Tier 1 private universities. But both UC Berkeley and UCLA now *each* have as many low-income students, and students from under-represented minorities, as the *whole* Ivy League
- Berkeley takes in many community college graduates
- Under the progressive tuition policy, 40% of undergraduates at Berkeley are subsidized by other students and pay no tuition
- 65% of all students receive at least some financial aid
- Half of all of Berkeley's students graduate with no debt. The average debt of $19,000 is just over two thirds of the national average of $27,000 (2013)

Social mobility? Advantage held by 20-34 year olds with tertiary-educated parents, 2012

For example in Poland, a 20-34 year old person with at least one tertiary-educated parent is 9.5 times as likely to participate in tertiary education, as a person whose parents had less than upper secondary education. Data: OECD



High upward mobility in China strengthens role of education

China has a fast-growing middle class and inherited capital plays a minor role

"With the rate of growth currently observed in emergent countries such as China, it seems clear that inheritance flows are for the time being quite limited. For working-age Chinese, who are currently experiencing income growth of 5-10 per cent a year, wealth in the vast majority of cases comes primarily from savings and not from grandparents, whose income was many times smaller."

~ Thomas Piketty (2014), *Capital in the 21st Century*, p. 429.

Mass higher education is key

- Mass public higher education is under-funded in many countries. In California, which long provided universal access, the community colleges now turn away 250,000 student a years
- Large private sectors (e.g. Indonesia and Brazil) are often poor quality, semi-regulated, with low upward transfer rates
- Many for-profits are diploma mills (e.g. Philippines). US for-profits receive $32 billion p.a. in subsidies and graduate 18%. The money would be better spent on struggling public community colleges.
- Many politicians see MOOCs as the provider of cheap access. *Much of what is called 'participation' is scarcely that.*
- *Only states can ensure good quality higher education for all, though some state-provided mass education sectors are impoverished.*
- *Only adequate upward transfer opportunities can ensure that a differentiated system can maximise equality of opportunity*