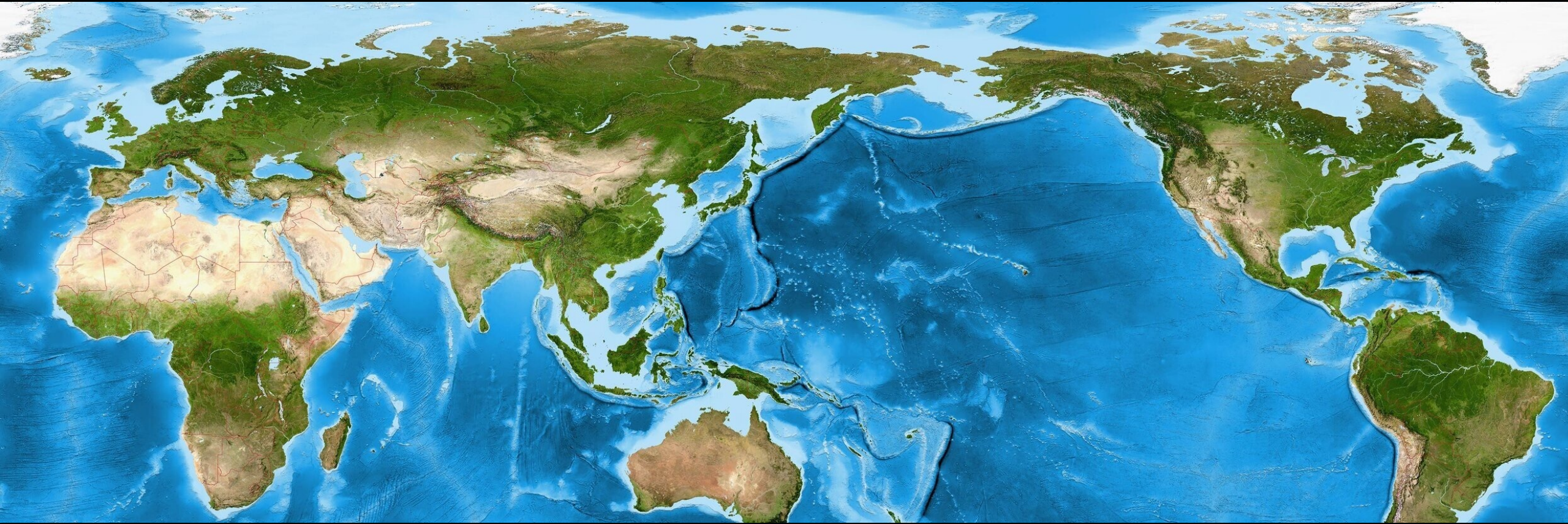


AS EURO-AMERICAN DOMINATION WEAKENS:

EAST ASIAN HIGHER EDUCATION IN THE MULTIPOLAR WORLD

Simon Marginson, University of Oxford



International Symposium, Graduate School of Education, Tohoku University, 15 December 2023

THE WORLD IS ALWAYS EMERGING AND CHANGING

‘All things are in flux, like a river . . . Everything flows’

‘Whoever cannot seek the unforeseen, sees nothing. The known way is an impasse.’

~ attributed to Heraclitus of Ephesus (544-484 BCE)



EAST ASIAN HIGHER EDUCATION IN THE MULTIPOLAR WORLD

- Positionality
- Higher education and modernisation
- The climate-nature emergency
- Trajectory of globalisation
- Multi-polarity in education and science
- Weakening of Western domination
- Challenges for higher education
- Higher education in East Asia



POSITIONALITY



HIGHER EDUCATION AND MODERNISATION



THE CLIMATE-NATURE EMERGENCY

GLOBAL SEPTEMBER 2023 TEMPERATURE
0.5C ABOVE PREVIOUS RECORD





THE CLIMATE-NATURE EMERGENCY

WEST ANTARCTIC ICE MELT WILL RAISE
GLOBAL SEA LEVELS 3-5 METRES BY 2100

DESTABILISED STATES,
POPULISM AND INTENSIFIED
NATIONALISM



INTENSIFIED GEO- POLITICAL CONFLICT



GLOBALISATION AS
AMERICANISATION



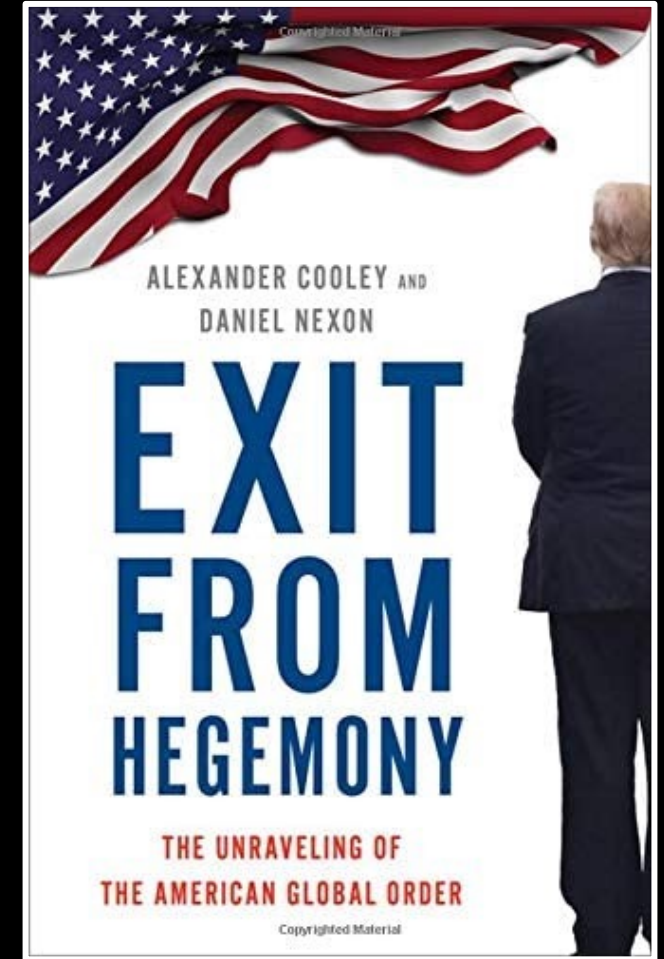
MULTI-POLARITY
AND AMERICAN
RETREAT FROM
GLOBALISATION

**Globalization
and the
AMERICAN
CENTURY**



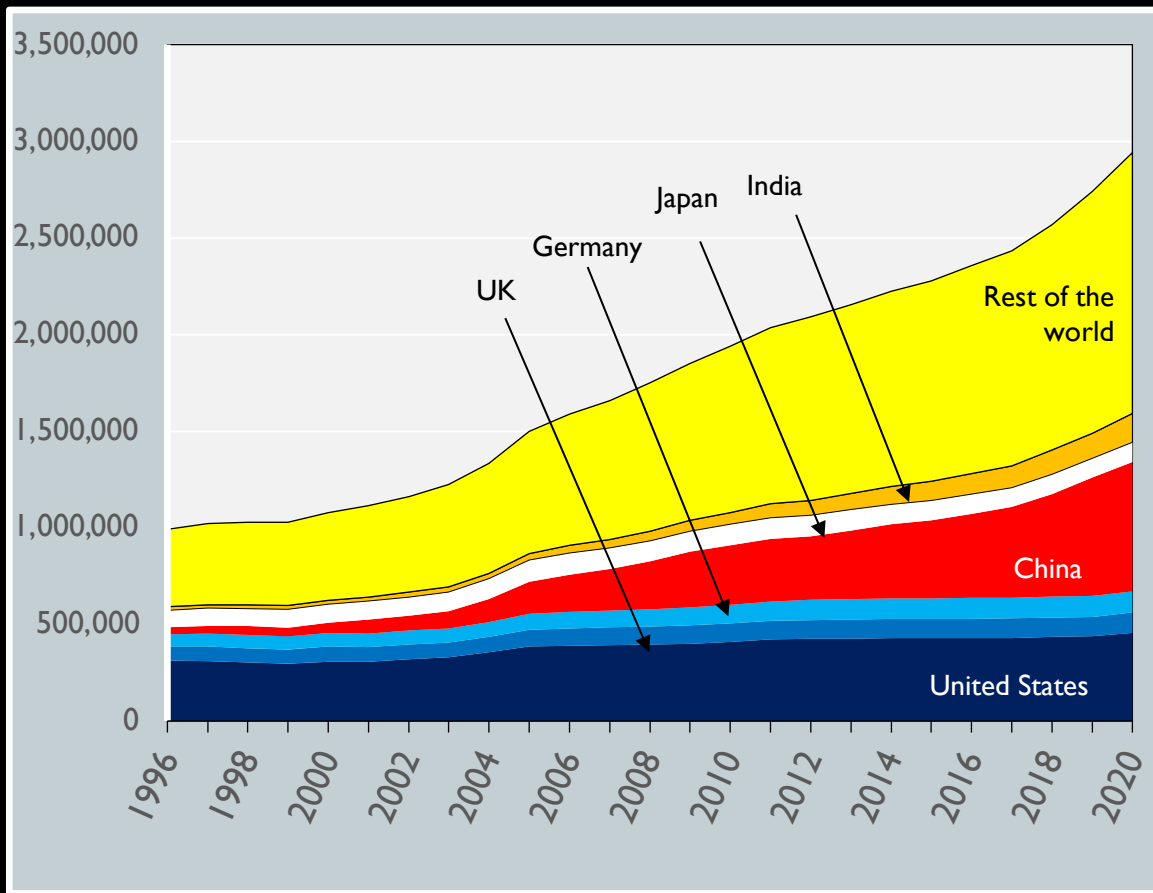
ALFRED E. ECKES, JR.
& THOMAS W. ZEILER

Published in 2010



Published in 2022

GROWTH OF SCIENCE PAPERS IN SCOPUS BY COUNTRY 1996-2020



SPREAD OF RESEARCH TO MORE COUNTRIES 1987-2017

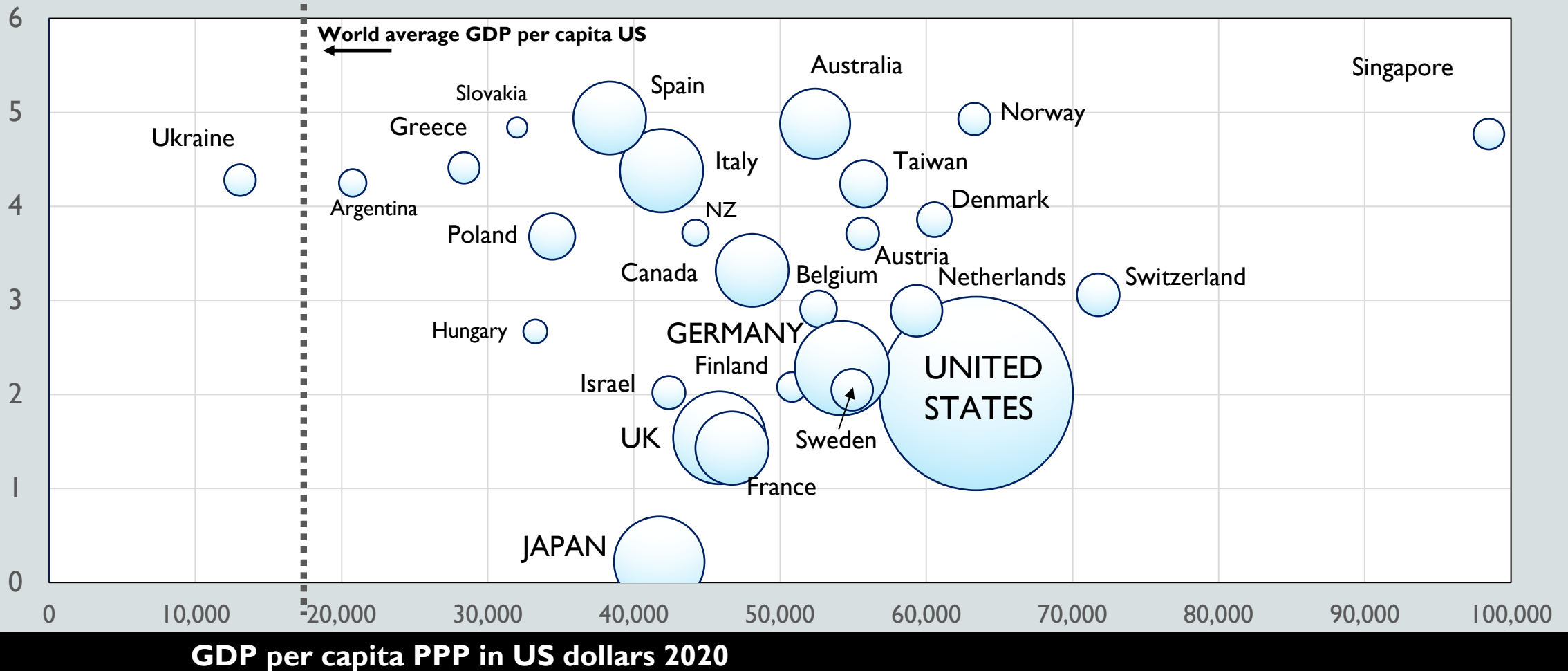
	1987 WoS	1997 Scopus	2007 Scopus	2017 Scopus
Producing 50% of world science	3 USA, UK, Germany	4 USA, Japan, Germany, UK	5 USA, China, Japan, Germany, UK	6 China, USA, India, Germany, Japan, UK
Producing 90% of world science	20 countries	23 countries	26 countries	32 countries

LONGER ESTABLISHED AND SLOWER GROWING SCIENCE SYSTEMS 2000-2020

NATIONAL OUTPUT OF SCIENCE PAPERS GREW SLOWER THAN THE WORLD AVERAGE RATE OF 5.15% PER YEAR BETWEEN 2000 AND 2020 - COMPARED TO WORLD AVERAGE GDP PER CAPITA PPP (US \$17,083 IN 2020)

Science systems with 5,000 papers or more in 2020. Scopus data, fractional counting (NSF 2021). Current price GDP, PPP = purchasing power parity (World Bank 2022).

**Growth
p.a.(%)
science
papers**

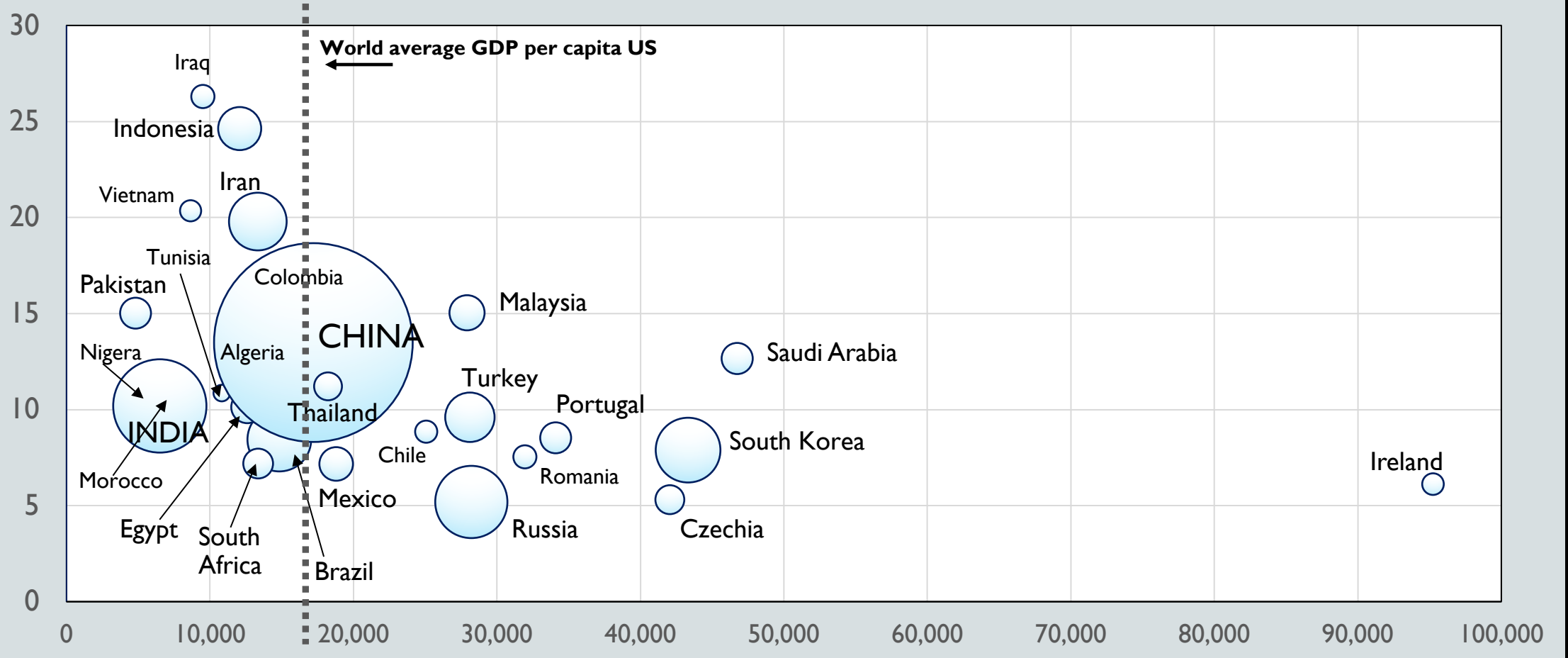


RECENTLY EMERGED AND FASTER GROWING SCIENCE SYSTEMS 2000-2020

NATIONAL OUTPUT OF SCIENCE PAPERS GREW FASTER THAN THE WORLD AVERAGE RATE OF 5.15% PER YEAR BETWEEN 2000 AND 2020 - COMPARED TO WORLD AVERAGE GDP PER CAPITA PPP (US \$17,083 IN 2020)

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**Growth
p.a.(%)
science
papers**



GDP per capita PPP in US dollars 2020

TOP UNIVERSITIES IN STEM RESEARCH, LEIDEN RANKING

PAPERS IN TOP 5% BY CITATION RATE, 2018-2021, IN (1) PHYSICAL SCIENCES & ENGINEERING, (2) MATHEMATICS & COMPUTING:

University	System	(1) Physical sciences & Engineering	University	System	(2) Mathematics & Computing
Tsinghua U	CHINA	1,054	Tsinghua U	CHINA	402
Zhejiang U	CHINA	783	U Electron S&T	CHINA	402
Shanghai JT U	CHINA	736	Harbin IT	CHINA	265
Harbin IT	CHINA	720	Xidian U	CHINA	263
Huazhong U S&T	CHINA	687	Huazhong U S&T	CHINA	259
U Science & Technol	CHINA	649	Shanghai Jiao Tong U	CHINA	228
Tianjan U	CHINA	635	Zhejiang U	CHINA	228
U Chinese Acad Sci	CHINA	621	Beihang U	CHINA	228
MIT	USA	614	Southeastern U	CHINA	228
Xi'an Jiaotong U	CHINA	593	Nanyang TU	SINGAPORE	220
Hunan U	CHINA	582	Northwestern Poly. U	CHINA	219
Nanyang TU	SINGAPORE	557	Wuhan U	CHINA	212
Central Southern U	CHINA	551	MIT	USA	193
National U Singapore	SINGAPORE	538	Beijing IT	CHINA	190

TOP UNIVERSITIES IN OTHER SCIENCE FIELDS

PAPERS IN TOP 5% BY CITATION RATE, 2018-2021, IN (1) BIOMEDICINE & HEALTH SCIENCES (2) LIFE & EARTH SCIENCES

University	System	(1) Biomedicine & Health Sciences
Harvard U	USA	3,027
U Toronto	CANADA	1,154
Johns Hopkins U	USA	1,104
Stanford U	USA	1,017
U Pennsylvania	USA	1,009
U Calif San Francisco	USA	921
U Oxford	UK	829
U College London	UK	816
U Michigan	USA	792
Yale U	USA	732
U Calif San Diego	USA	709
U Texas HSC Houston	USA	699
Cornell U	USA	692
U Washington Seattle	USA	675

University	System	(2) Life & Earth Sciences
China Agriculture U	CHINA	343
Zhejiang U	CHINA	335
U Chinese Acad Sci	CHINA	288
Wageningen U	NETHERLANDS	287
Northwest Agr. & For. U	CHINA	285
China U Geoscience	CHINA	261
Harvard U	USA	241
U Calif Davis	USA	236
Cornell U	USA	235
Nanjing Agricultural U	CHINA	233
ETH Zurich	SWITZERLAND	232
Tsinghua U	CHINA	224
U Florida	USA	217
U Oxford	UK	215

PUSH-BACK AGAINST
GLOBAL DIVERSIFICATION





IS A GLOBAL MORAL ORDER
POSSIBLE, IN GENERAL AND
IN HIGHER EDUCATION?

EAST ASIA 2022: ECONOMY, DEMOGRAPHY, EDUCATION, SCIENCE

Systems	Population (millions)	GDP PPP (US\$ billions) *	GDP per person PPP (US\$) *	Gross Tertiary Enrolment Ratio (%) **	Science papers in Scopus 2020
China PRC	1,412.2	30,327.3	21,476	72	669,744
Hong Kong	7.3	507.2	69,049	104	-
Macau	0.7	38.5	55,345	115	-
Japan	125.1	5,702.3	45,573	62	101,014
Vietnam	98.2	1,321.3	13,457	42	8,213
South Korea	51.6	2,585.0	50,070	100	72,490
Taiwan *	23.9	1,685.4	72,485	90	28,153
Singapore	5.6	719.1	127,565	97	12,221
Mongolia	3.4	48.4	14,230	64	210



PPP = Purchasing Power Parity. All data from World Bank except Taiwan, and science output from Scopus. Scopus papers for China include Hong Kong and Macau SARs. Various sources for Taiwan data, Scopus for its science papers

* GDP data for Taiwan only 2023

** Tertiary Enrolment Ratio 2020 in Japan; 2021 in South Korea, Singapore, Taiwan

FACTORS THAT SUGGEST EAST ASIA COULD BECOME THE WORLD'S STRONGEST REGION IN HIGHER EDUCATION AND SCIENCE



- Aggregated size and resources of countries in the region
- Focused investment and education-building strategies of East Asian states, resting on social consensus about education
- Outstanding educational quality of incoming tertiary students
- Potential to hybridise Western modernisation and facility in global English with indigenous cultural traditions
- Understanding of the potential of higher education to step up in key areas of need, including social collectivity, harmony with nature, moral order and global unity in diversity

EDUCAITONAL PLATFORM FOR HIGHER EDUCATION IN EAST ASIA

PISA 2022 MATHS, SCIENCE AND READING AT AGE 15

System	Mathematics mean	System	Science mean	System	Reading mean
Singapore	575	Singapore	561	Singapore	543
Macao SAR	552	Japan	547	Japan	516
Taiwan	547	Macao SAR	543	Ireland	516
Hong Kong SAR	540	Taiwan	537	South Korea	515
Japan	536	South Korea	528	Taiwan	515
South Korea	527	Estonia	526	Estonia	511
Estonia	510	Hong Kong SAR	520	Macao SAR	510
Switzerland	508	Canada	515	Canada	507
Canada	497	Finland	511	United States	504
Netherlands	493	Australia	507	New Zealand	501
Ireland	492	Ireland	504	Hong Kong SAR	500
Belgium/Denmark/UK/Poland	489	New Zealand	504	Australia	498

FACTORS THAT SUGGEST EAST ASIA COULD BECOME THE WORLD'S STRONGEST REGION IN HIGHER EDUCATION AND SCIENCE

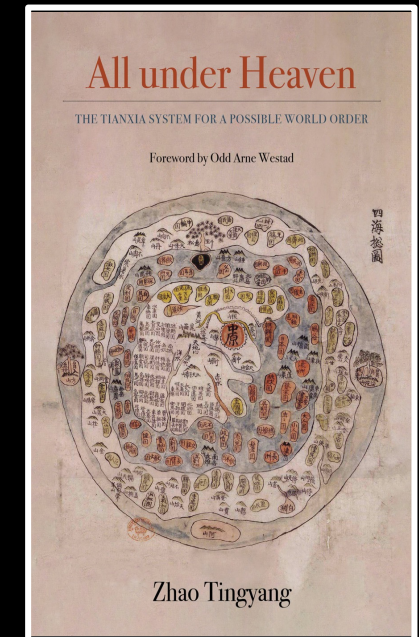
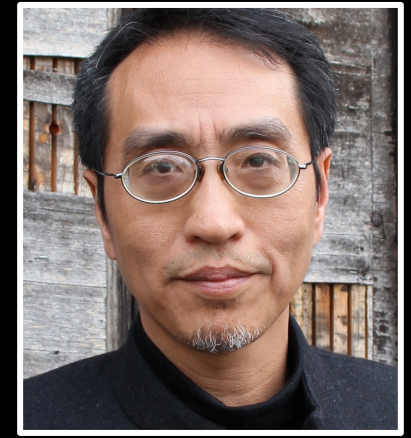


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- Understanding of the potential of higher education to step up in key areas of need, including social collectivity, harmony with nature, moral order and global unity in diversity
- Cultural commonalities within the East Asian region, but ...

TIANXIA AS AN VOLUNTARY INCLUSIVE GLOBAL
ORDER BASED ON UNITY IN DIVERSITY
THE ECOLOGICAL PERSPECTIVE, THE WORLD AS A WHOLE

‘... with respect to the political, only nation-states are deemed significant. It is for this reason that the world has only been exploited as a “common” resource and treated as a domain to be fought over and abused ... This is especially the case within ideologies of hegemonic nation-states, where other nation-states and even the high seas are conceived of as just so much territory to be dominated’

- Zhao Tingyang 2021, pp. 185, 187



FACTORS NECESSARY TO ACHIEVE POLITICAL REGIONALISATION

- Geographical contiguity - proximity and integration
- Deep *cultural convergence*, a common language helps
- Roughly equivalent levels of economic development
- All countries benefit from regional cooperation
- No one country is absolutely dominant
- Common positioning in world geo-politics
- *The political will* to form and sustain the region
- A common narrative, the regional story
- Regional institutions and a regional layer of governance



Higher education is nested in states and political regionalisation rests on integration between them. East Asia has common cultural elements (Sinic and Buddhist traditions plus Western modernisation) but there is no political will to regionalise



Dicksonia Antarctica, Otways, Victoria. Australia 2009

ご聴取ありがとうございました