

The Impact of Asian Science

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Published science

Sources:

- **ISI Science Citation Index**
- **United Nations population statistics**
- **World Bank economic indicators databases**

ISI's Science Citation Index

The caveats:

- Peer-reviewed journals
- English language abstracts and keywords
- Authors from multiple countries
- So... certain national or regional journals are excluded

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This presentation will cover...

- The impact of Asian science in terms of the amount published and how it is growing in different regions and countries of Asia
- The subject areas that predominate in different countries
- The patterns of publishing (journals, collaborations)

Total database records (SCI)

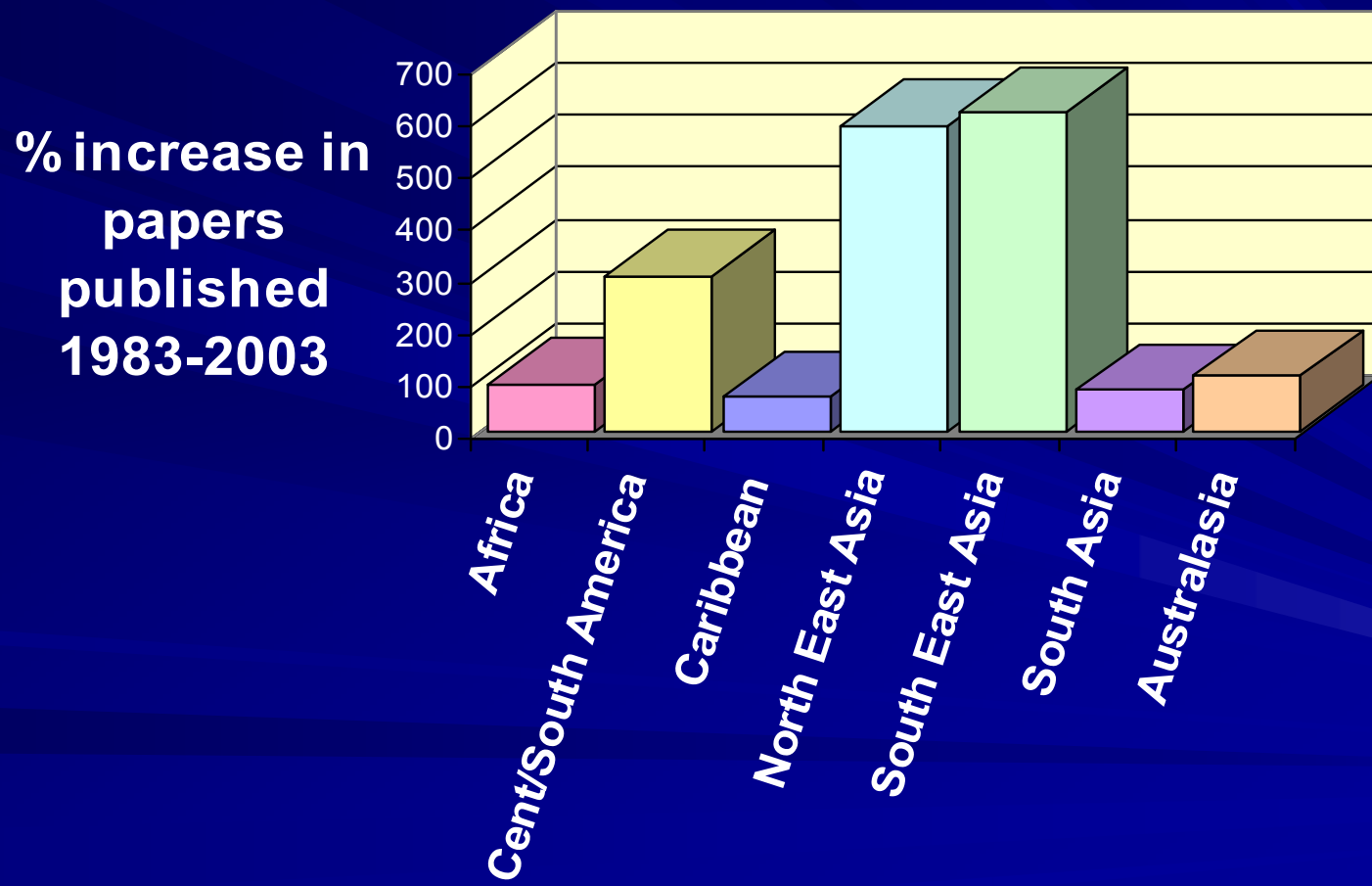
- 1983: 672,417
- 1993: 754,305
- 2003: 1,111,397

'Western' science output

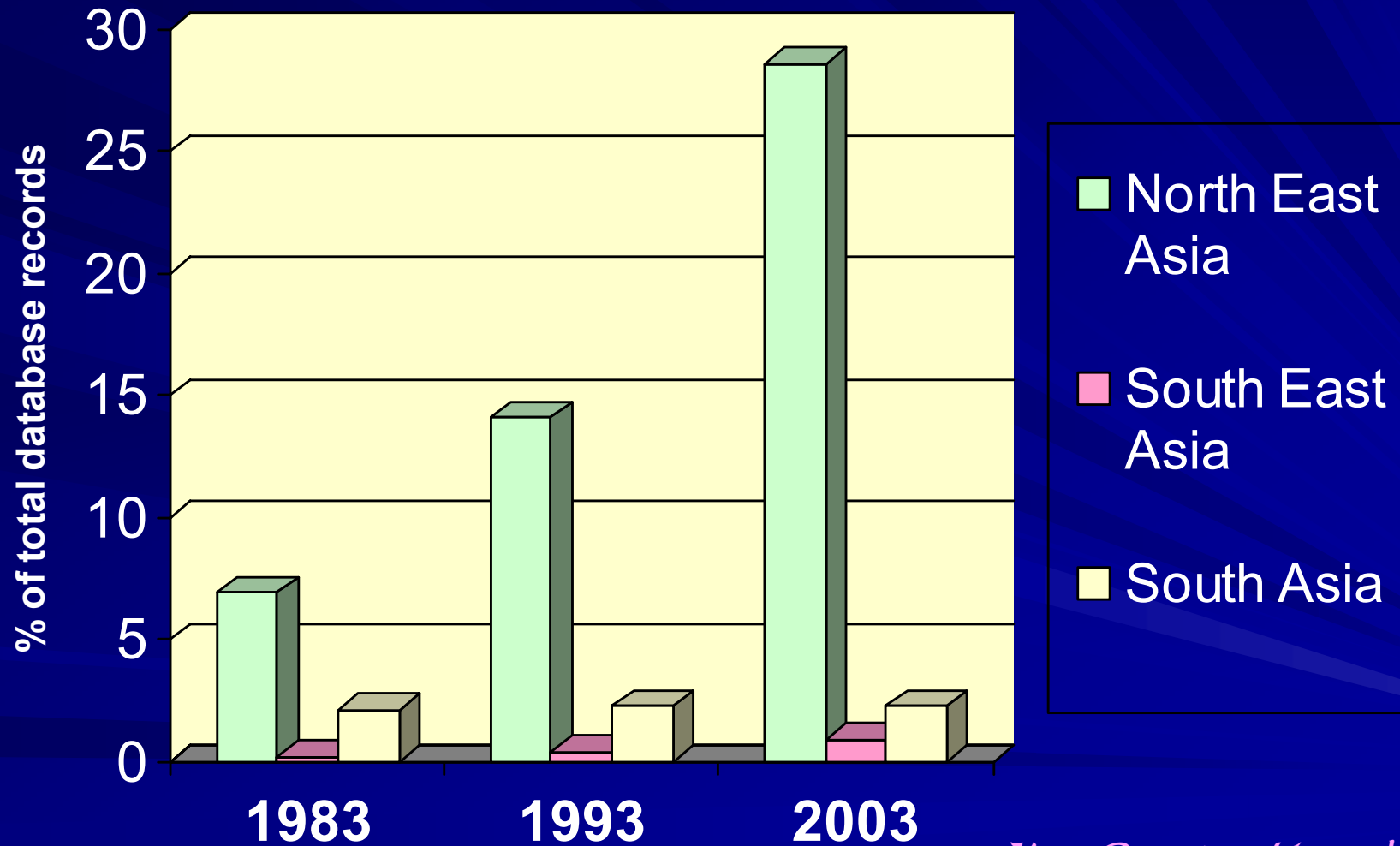
Publications from North America and Western Europe account for:

- 1983: 75% of total records
- 1993: 70% of total records
- 2003: 50% of total records

Growth in science output from various world regions 1983-2003

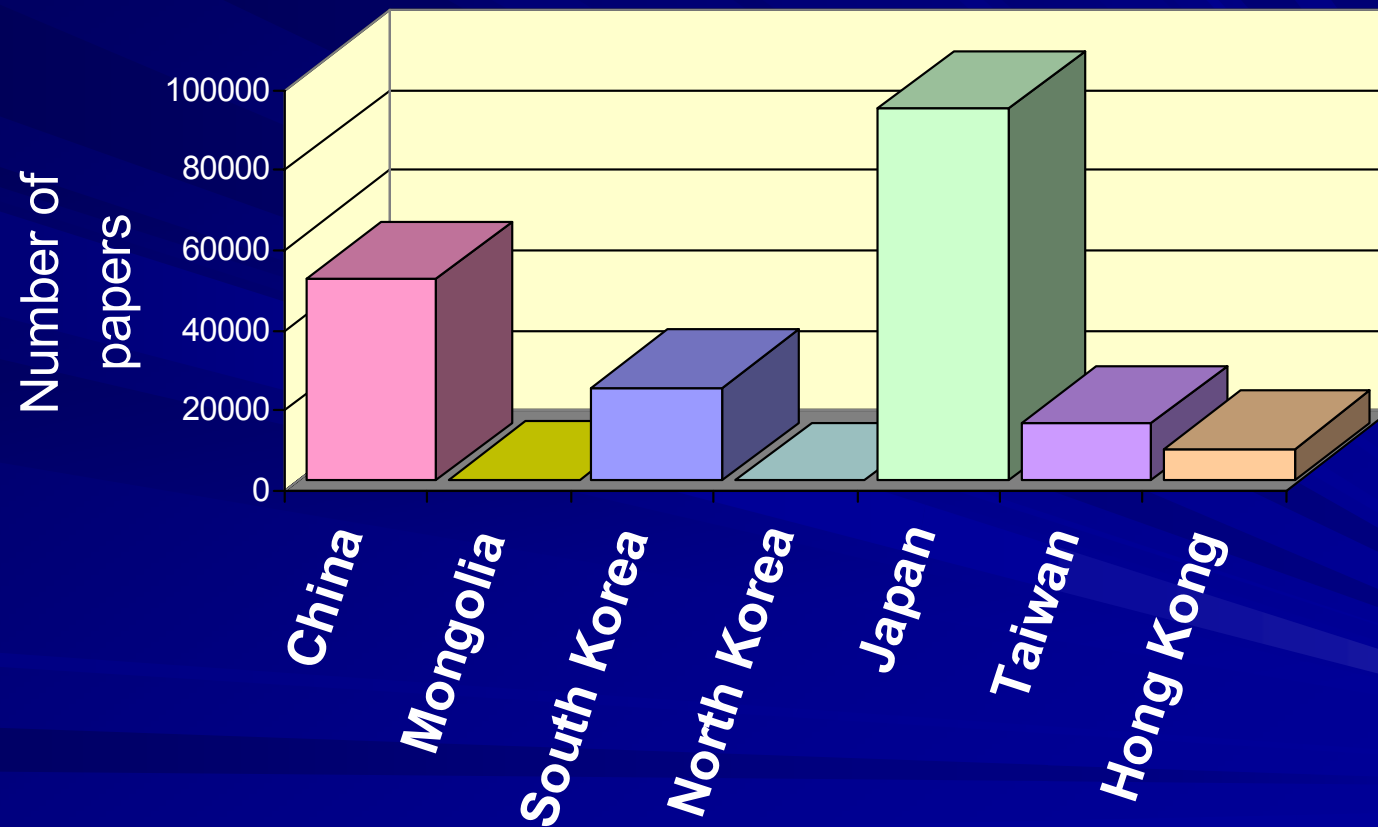


Growth in Asian science articles published 1983-2003

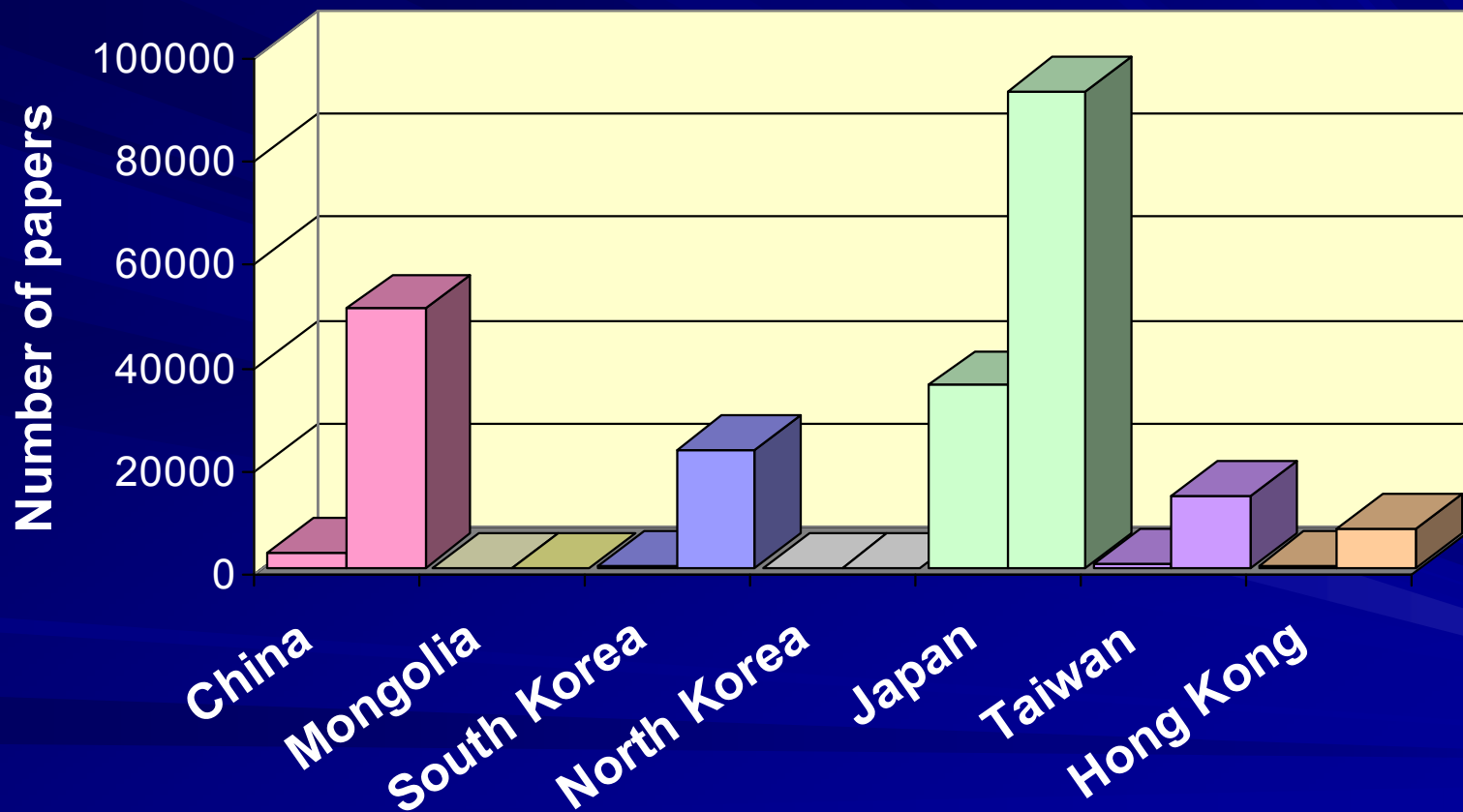


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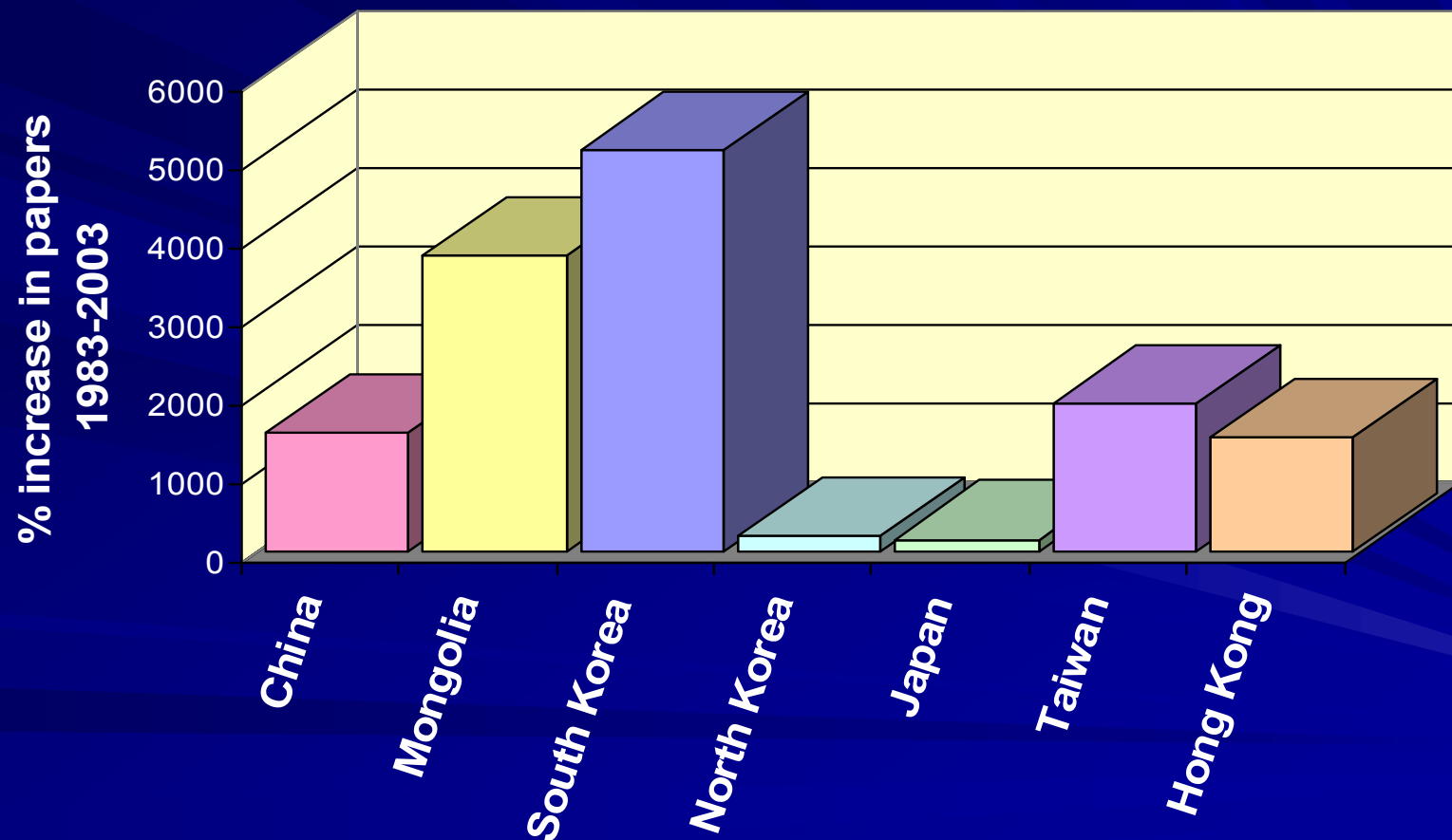
North East Asia: papers published 2003



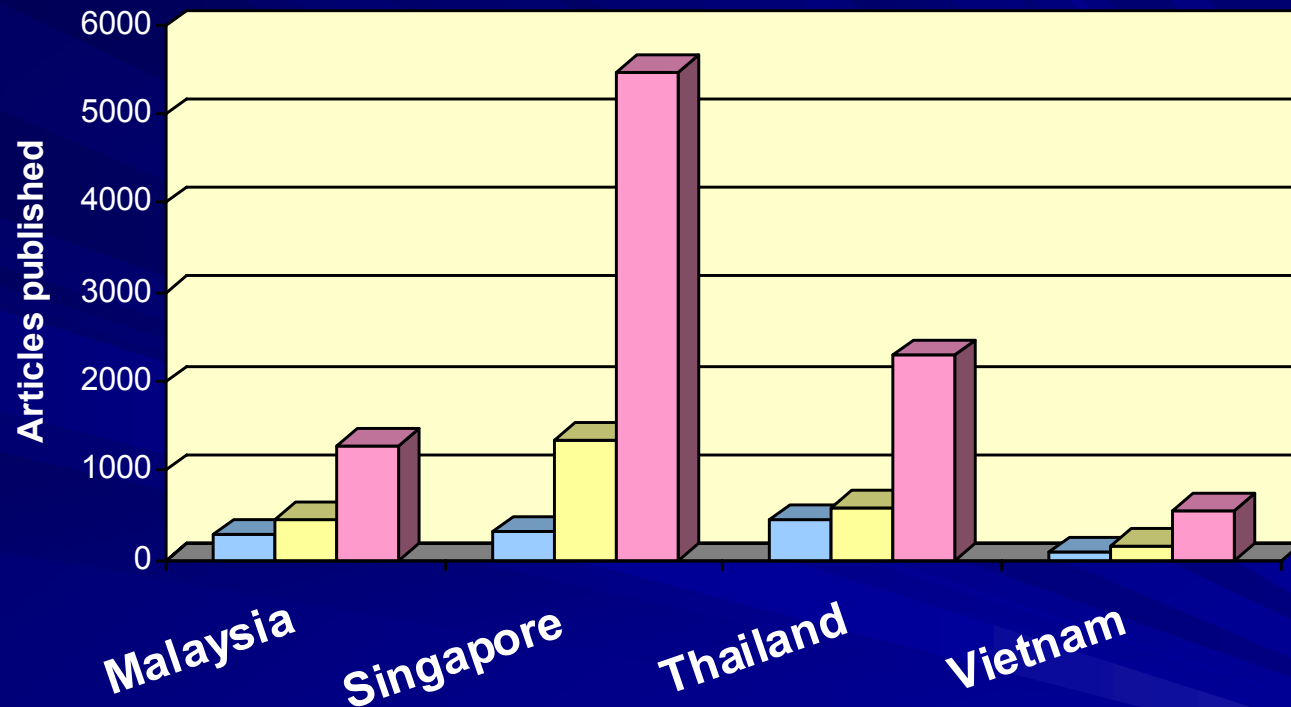
North East Asia: papers published 1983/2003



North East Asia: % increase in papers published 1983-2003



South East Asia: articles published 1983-2003



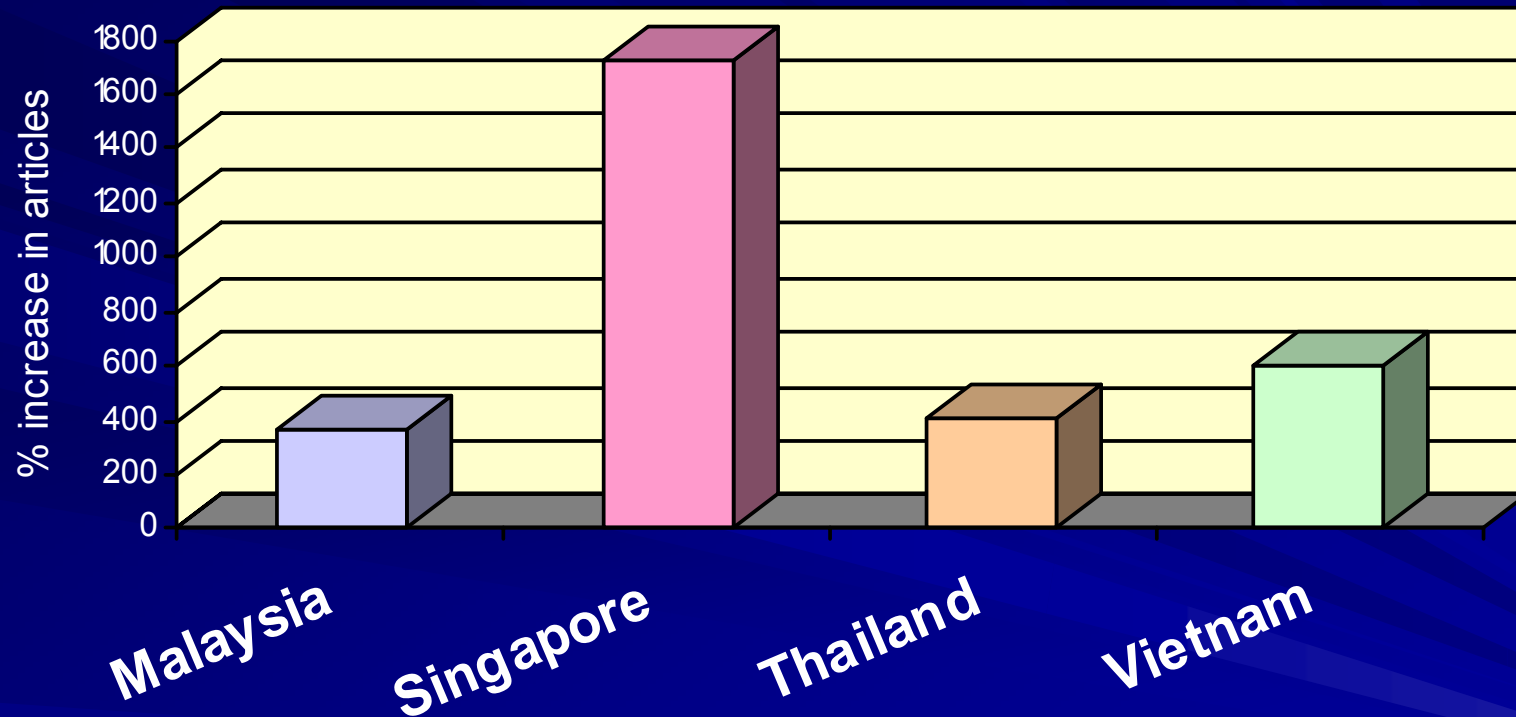
■ Articles 1983

■ Articles 1993

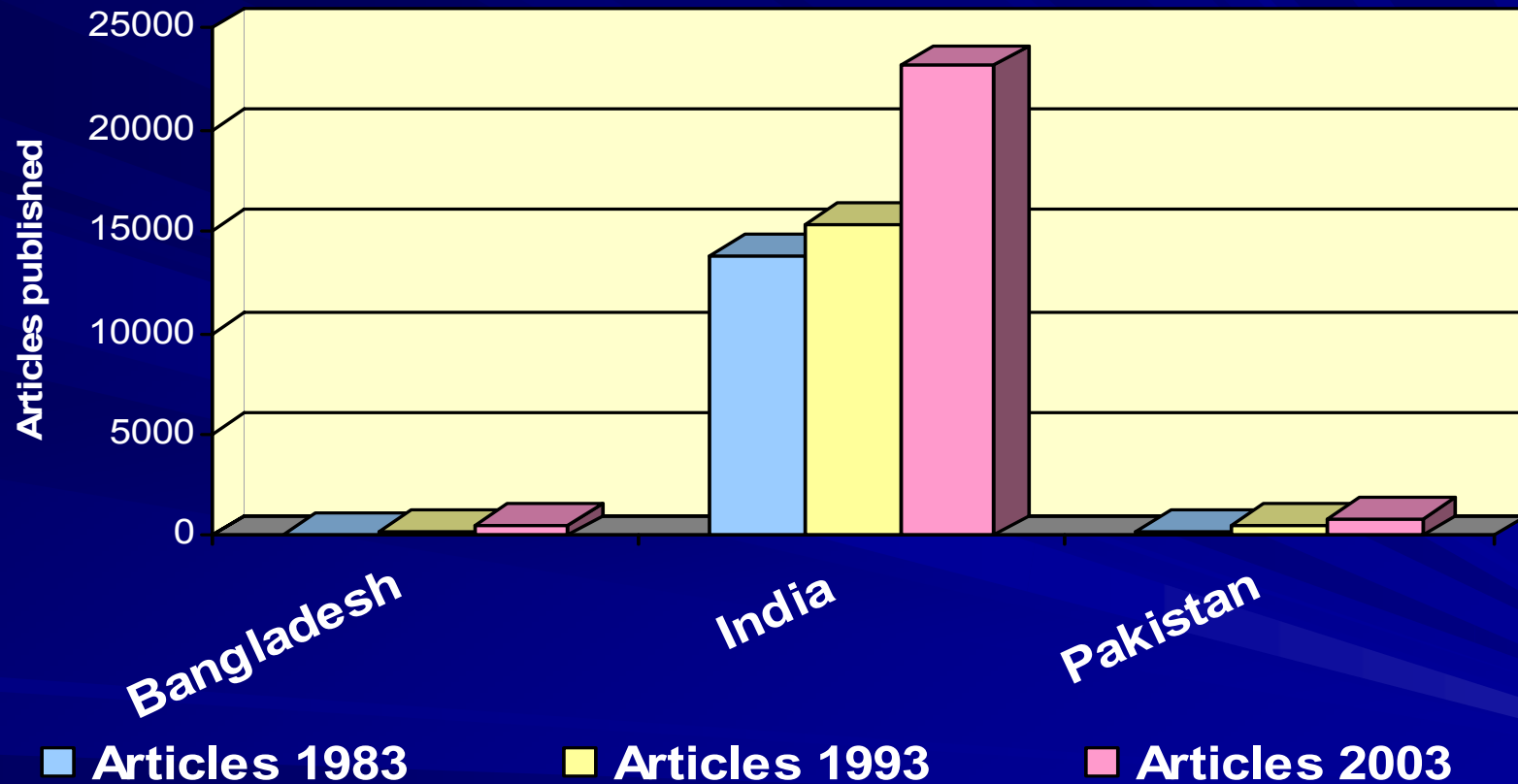
■ Articles 2003

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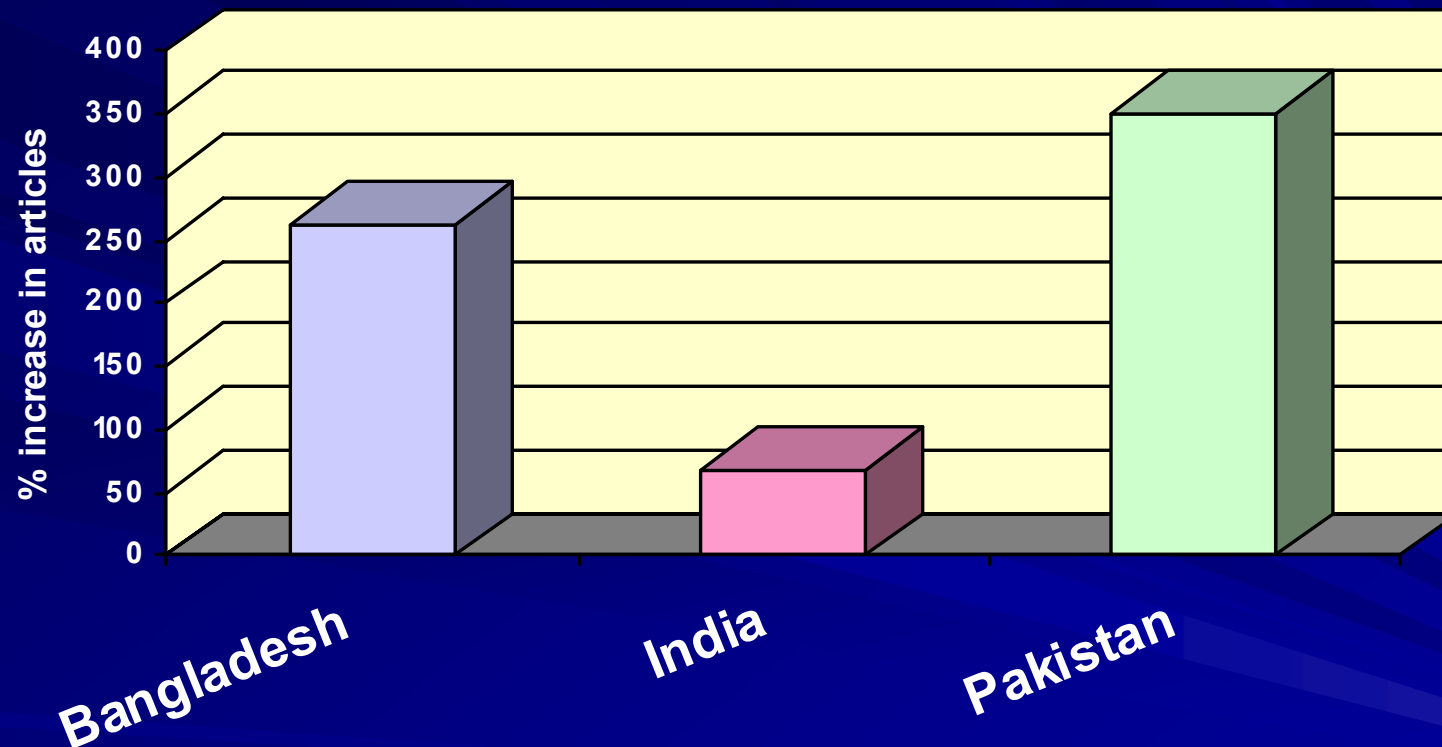
South East Asia: growth in articles published 1983-2003



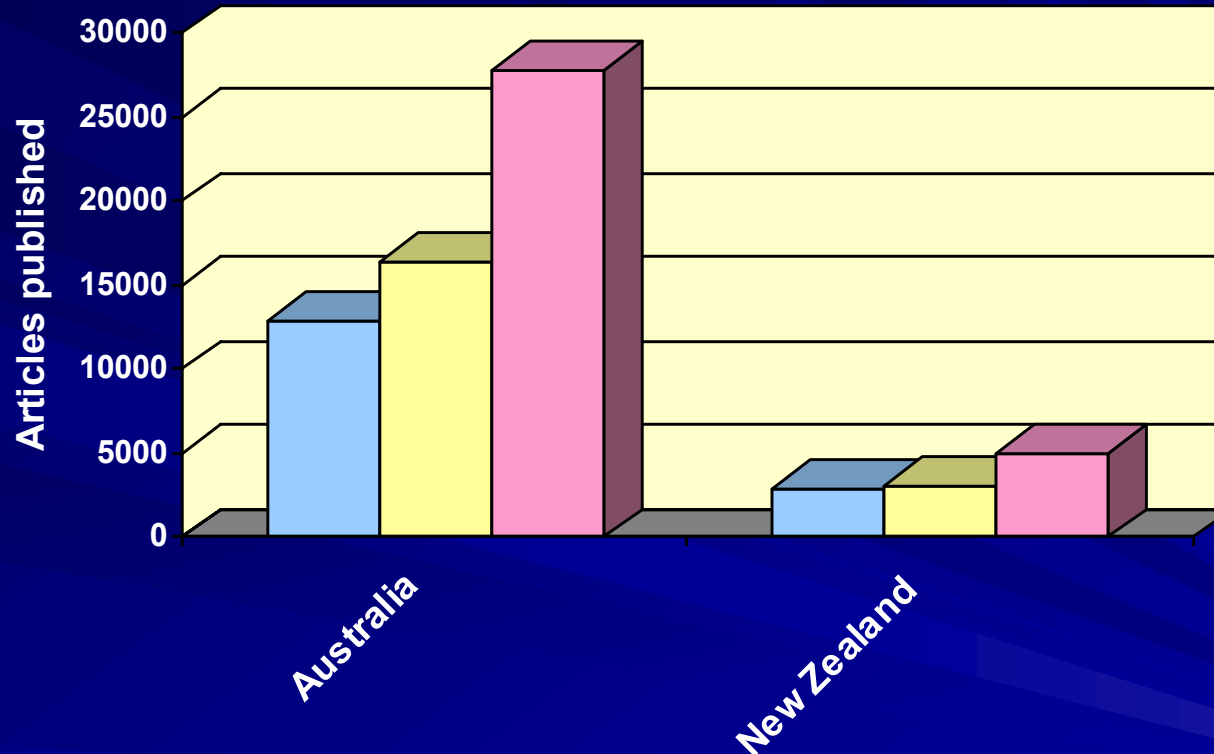
South Asia: articles published 1983-2003



South Asia: Growth in articles published 1983-2003



Australia and New Zealand: articles published 1983 to 2003



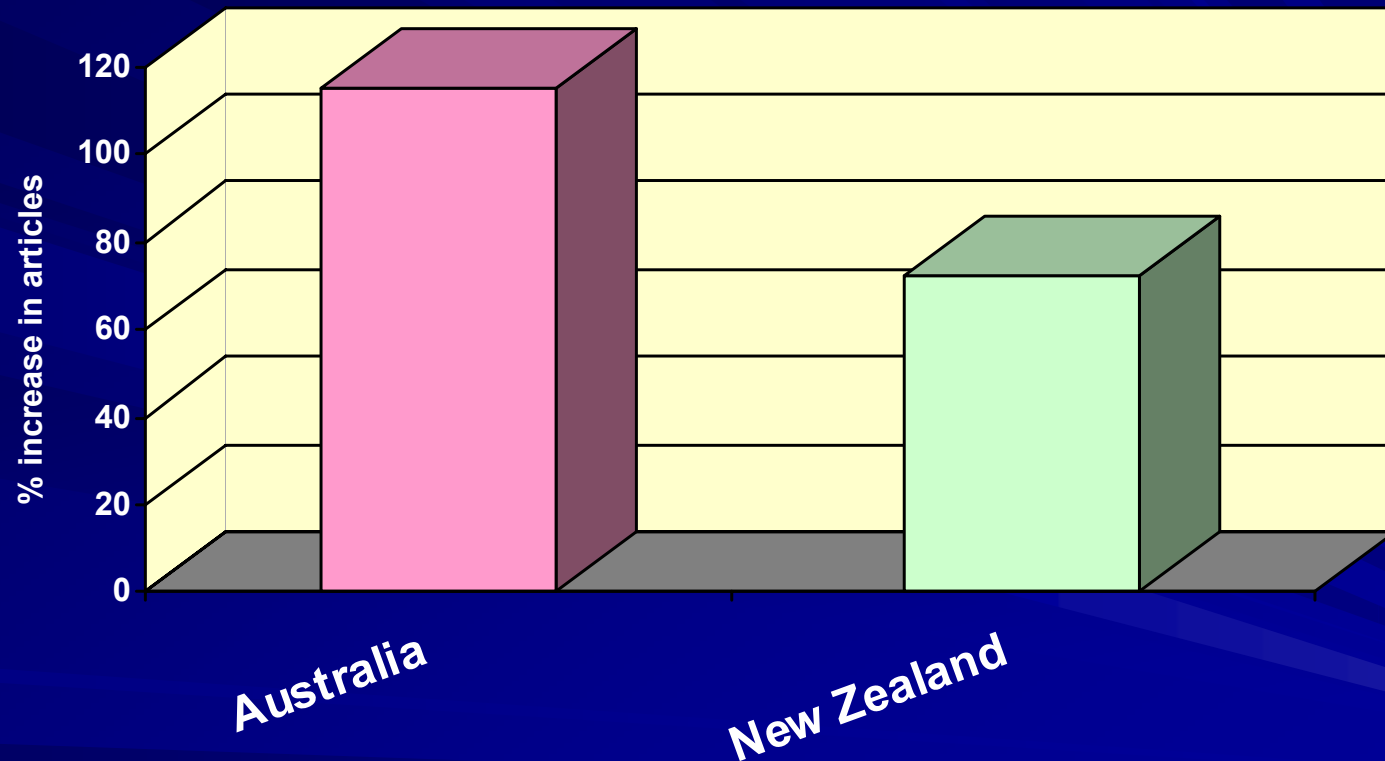
■ Articles 1983

■ Articles 1993

■ Articles 2003

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Australia and New Zealand: Growth of articles 1983 to 2003



Two things to note, then....

- Research output in absolute terms:

- Japan: 92K
- China: 50K
- Australia: 28K
- India: 23K
- South Korea: 23K

■ % growth in research output over two decades:

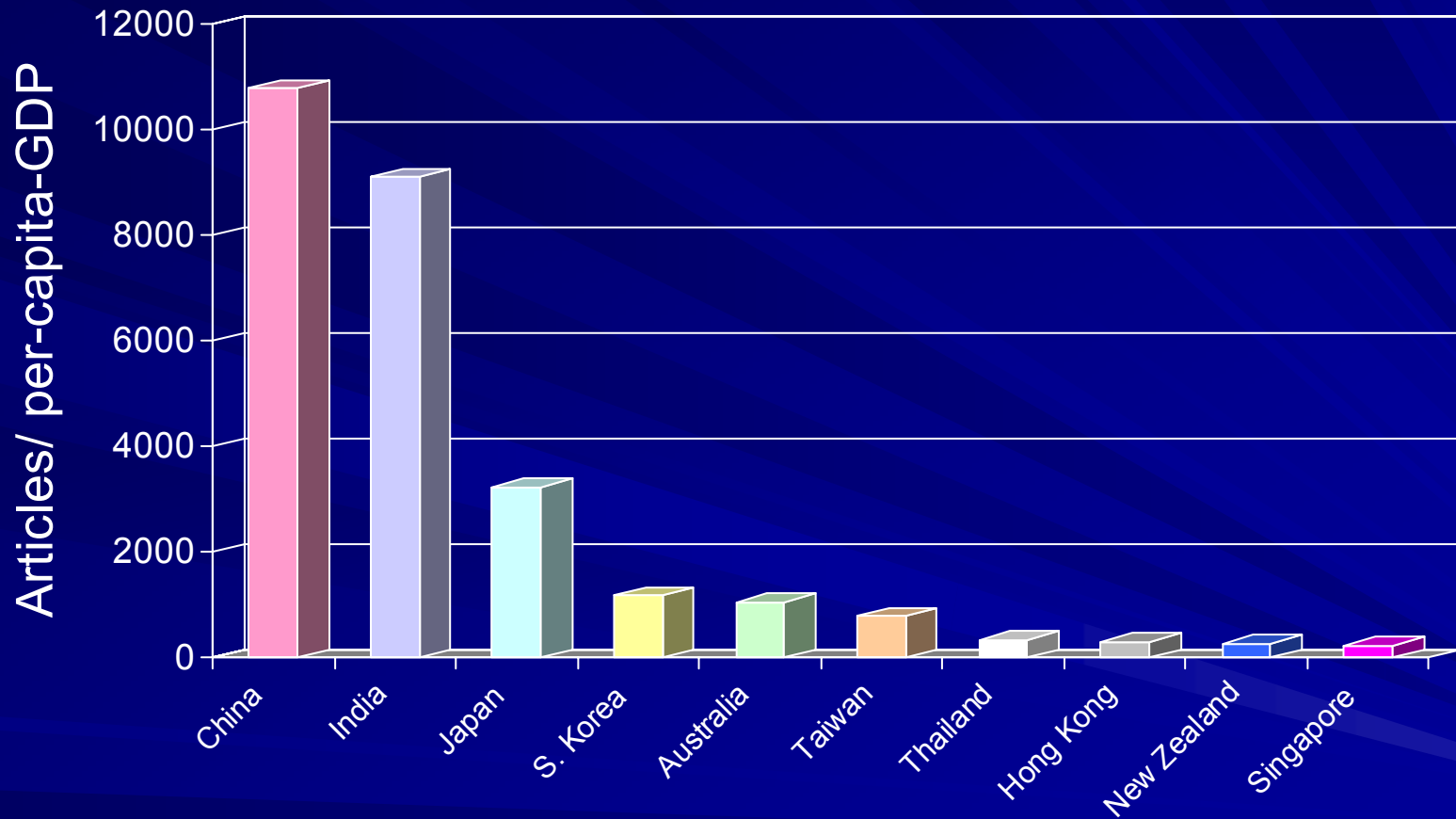
The big hitters...

China	1500% increase	3000	50,000
Taiwan	1900%	700	14,000
South Korea	440%	400	23,000

The up-and-coming league...

Hong Kong	1500%	500	8,000
Singapore	1700%	300	5,500
Thailand	400+%	450	2,300

Lastly, on this topic, productivity



What kind of science?

The 'big hitters':

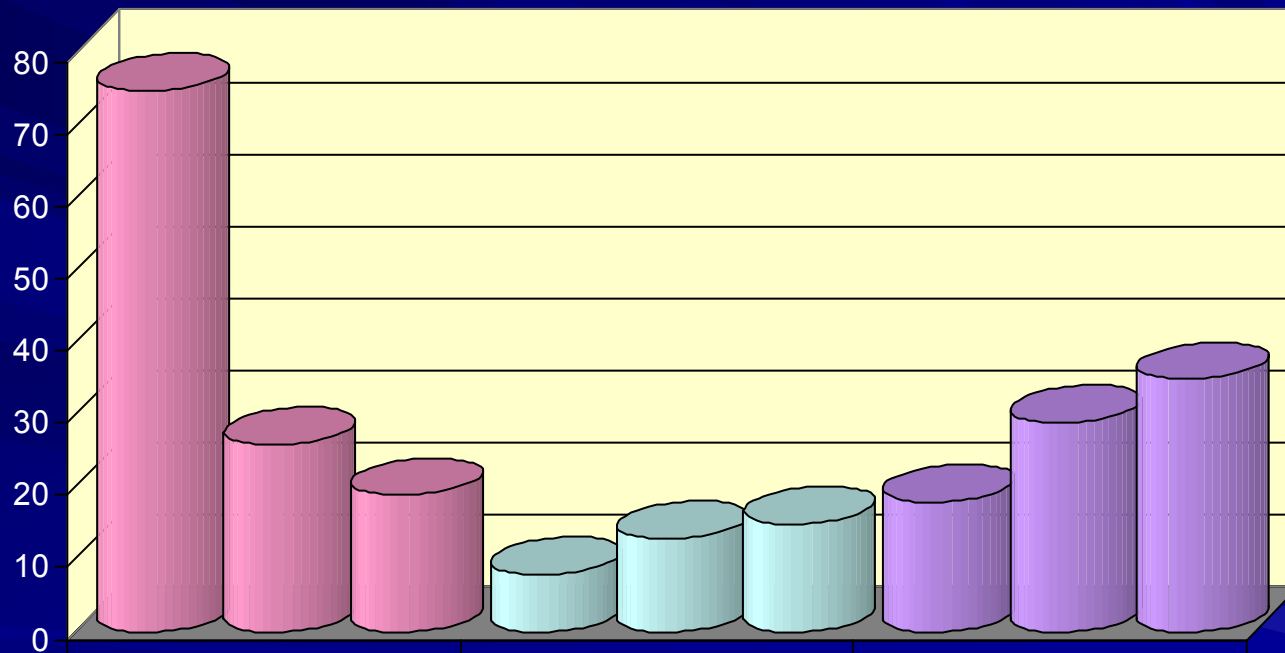
- China: physical sciences, engineering, materials science
- Japan: electronics, life sciences, medical sciences
- India: chemistry, agriculture, materials science
- Aust/NZ: life sciences, medical sciences, geological sciences

The tiger economies:

- Malaysia, Taiwan, Singapore:
electronics, materials science,
physical sciences
- South Korea:
engineering, life sciences,
materials science
- Thailand:
life sciences, medical sciences

Patterns of publishing by Asian scientists

Spanish-speaking Latin America:
origin and destiny of papers



% papers in L.Am journals

Number of non L.Am instns

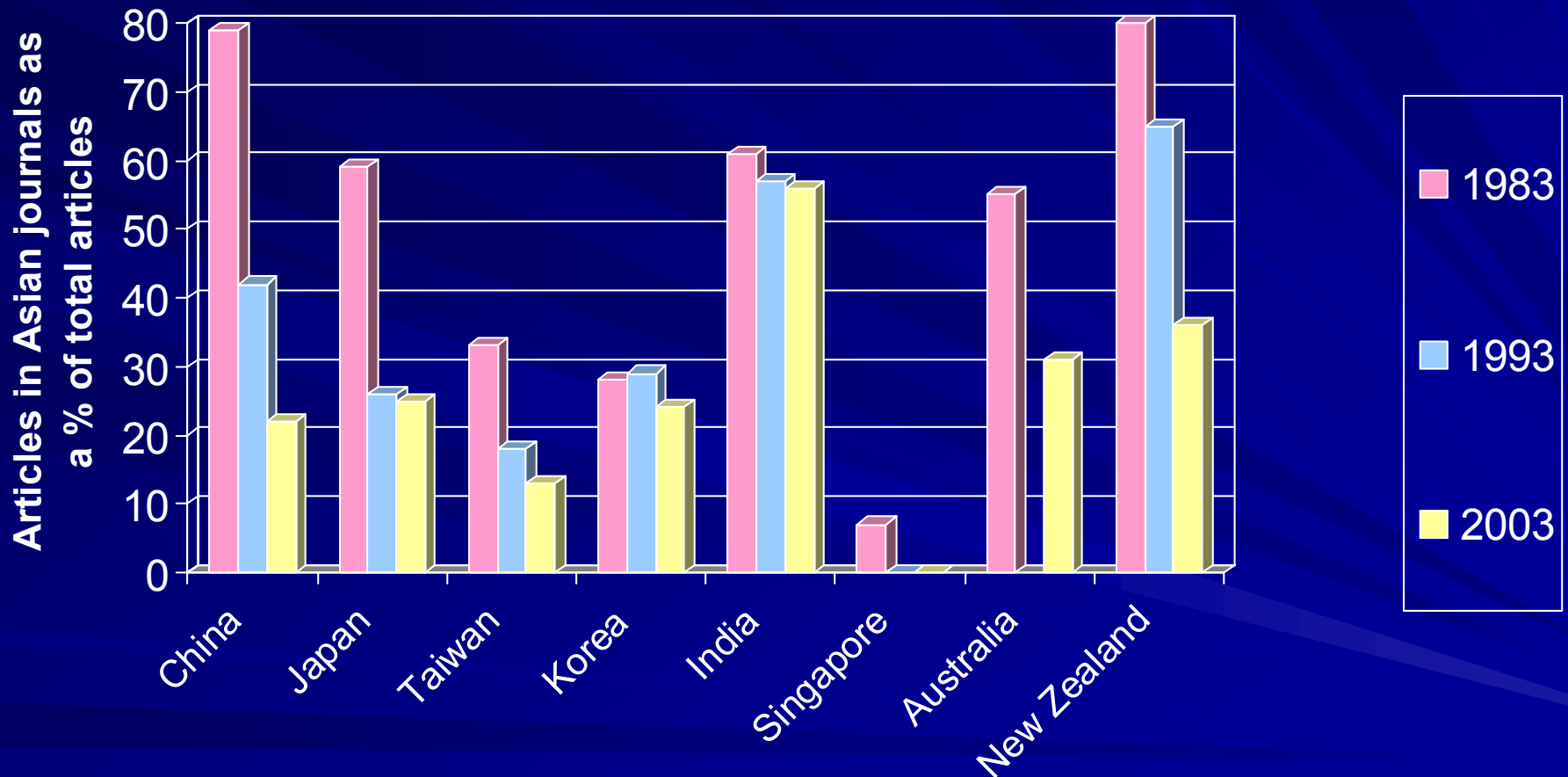
% papers from non L.Am instns

Where is this science being published?

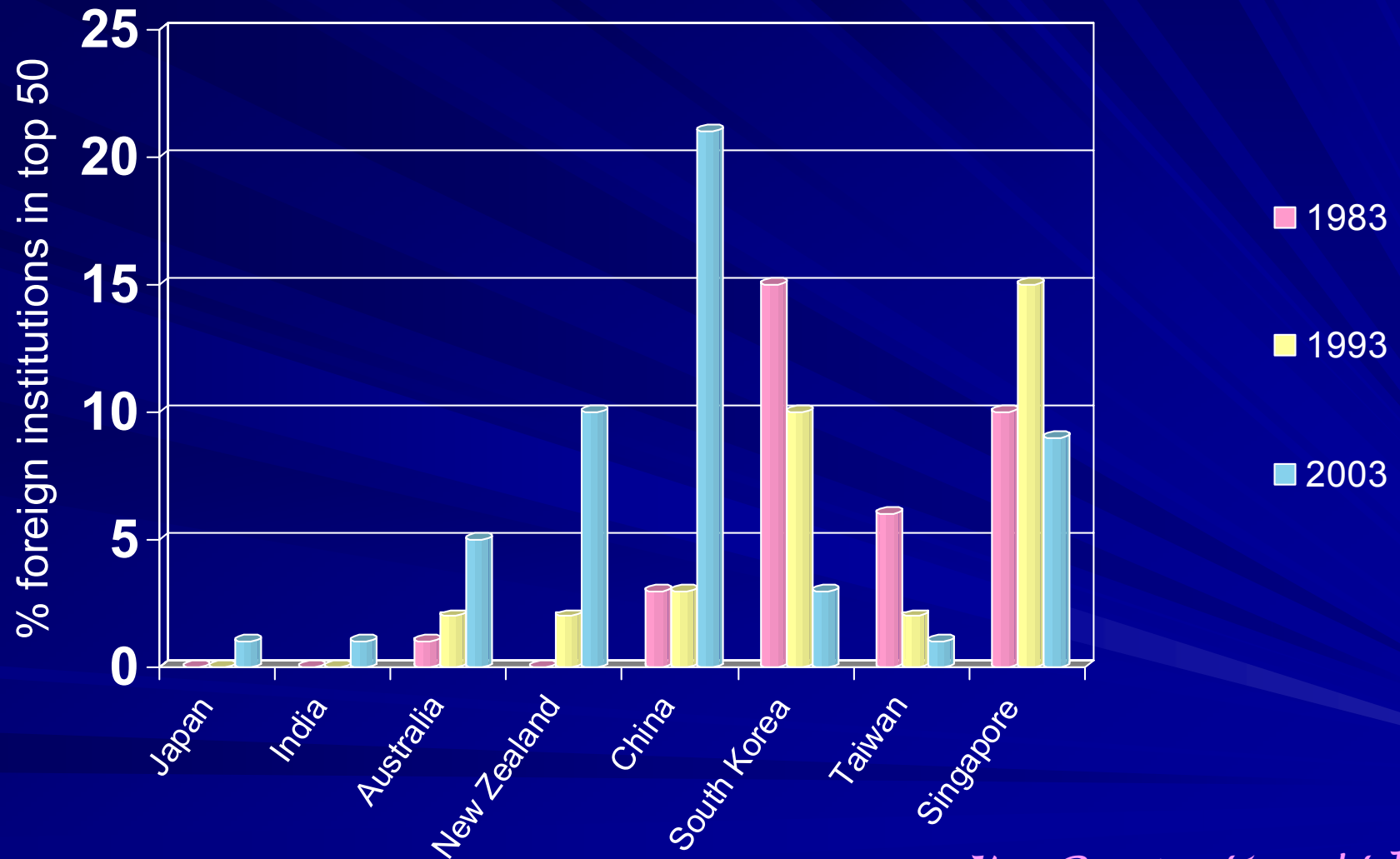
- Mainly in non-Asian journals even for countries that have substantial domestic scholarly publishing programmes
- 'Western' journals in the top 50 journals for each country:

Japan:	29
India:	29
Australia:	34
New Zealand:	31
South Korea:	40
China:	41

Representation in Asian journals



Patterns of collaboration



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