

Comparing Research Outputs Between the United States (U.S.) and China

Using Bibliometrics

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Introduction

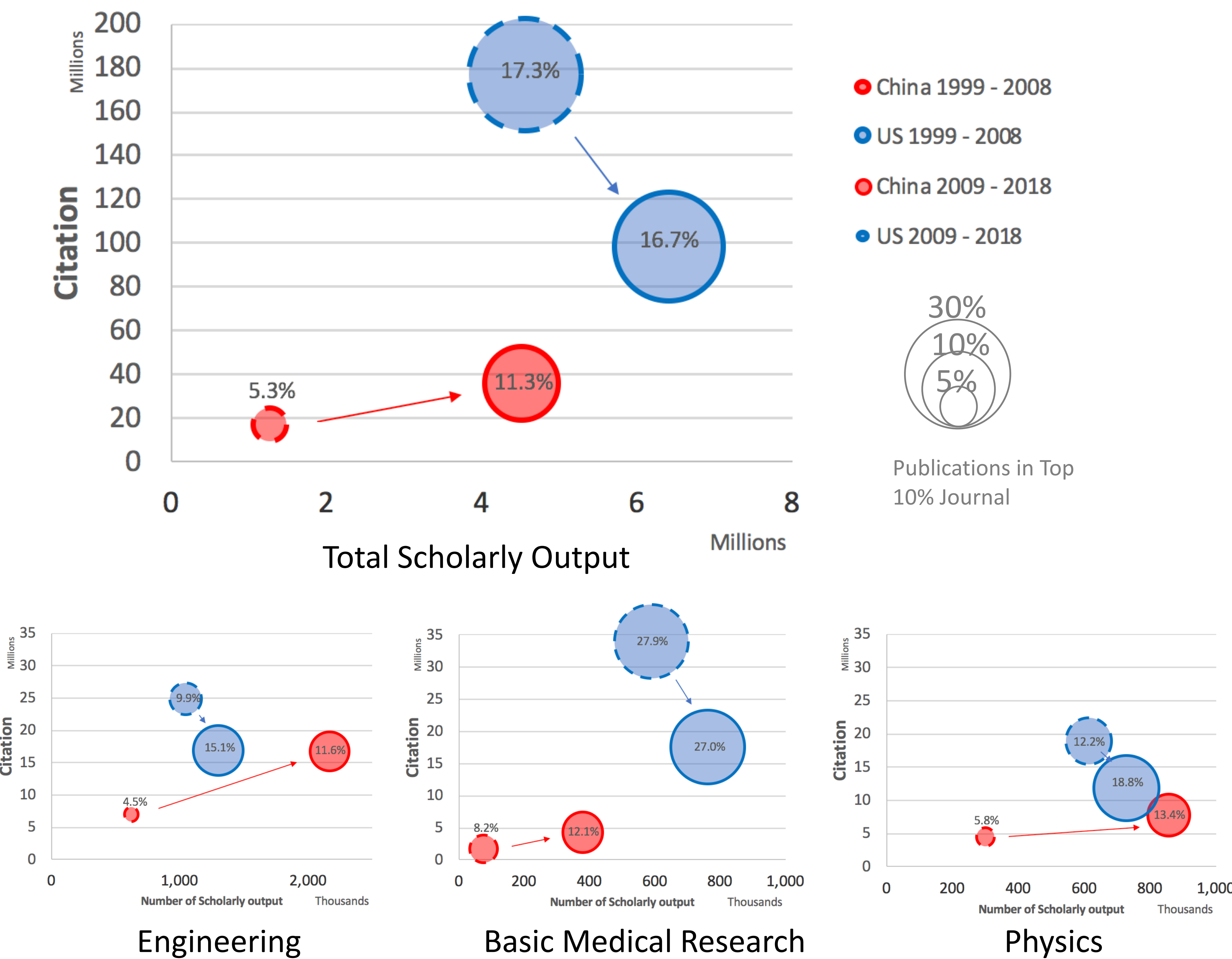
- Used carefully, bibliometrics information can be used by policy-makers and research funding agencies to make decisions on future endeavors.
- With bibliometrics information and other data, the authors conducted a comparative study of the research prowess of China versus the U.S.
- The research aims to find:
 - How do scholarly output and scholarly quality compare at this point for a number of research areas?
 - What might be driving any trends?

Methods and Data

- Useful partner metrics chosen to tell a more complete story
- Reference work used for student numbers and research funding

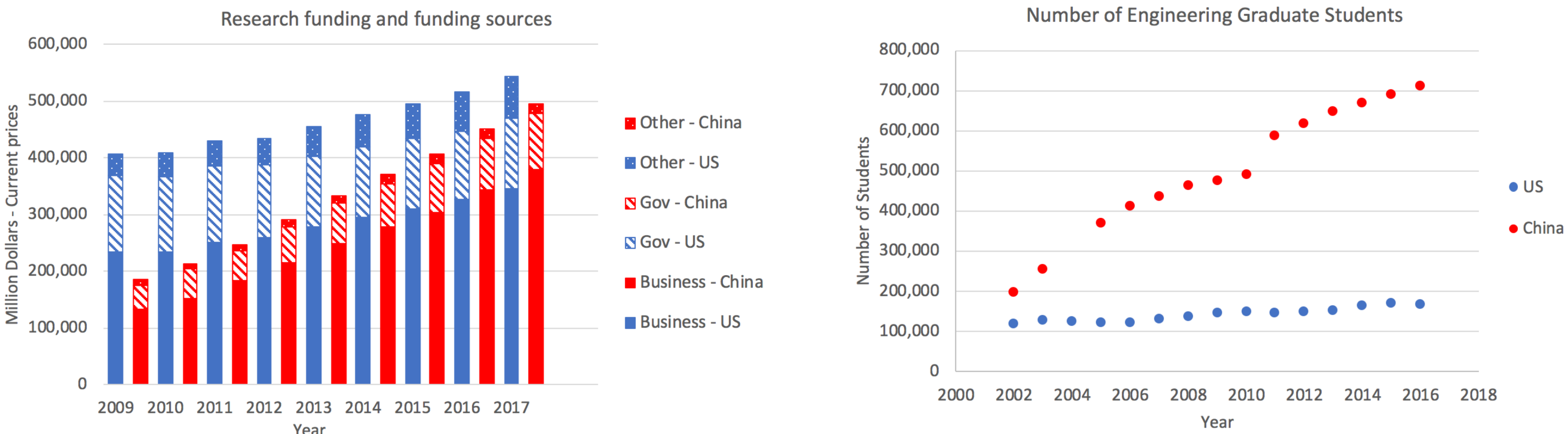
Data Type	Data Sources
Scholarly outputs	Scopus (SciVal)
Citations	
Publications in top journal percentiles	
Number of graduate students	National Science Foundation (U.S.); Ministry of Education (China)
Research funding	Organization for Economic Cooperation and Development (OECD)

Key Findings



* The scales in the x-axis and y-axis might be different

The significant increase in China's scholarly output and citation number can be a result of the **increase in funding** and **number of graduate students**. China's research funding from government and business sectors has surpassed the U.S. in 2017.



The U.S.

- maintains a normal trend in scholarly output and citation numbers (older articles have more time to build citations).
- is a leader in publishing high quality articles in all subject areas.
- is maintaining a lead in scholarly output in medicine and the biological sciences.

China

- is surpassing the U.S. in scholarly output in certain subjects, such as Engineering and Physics.
- has an increase in citation count despite the fact that older articles have had more time to build citations.
- is making progress with publishing in high quality journals.

Future Work

With additional study, we can:

Predict data drivers

- International R&D cooperation trends
- Political impacts on research trends
- Educational program trends
- Use of research facility
- R&D facility expansion

Identify

- Percentage of highly talented individuals
- Patent information
- High-tech business sector growth
- Scientific activities in business sectors

Bibliography

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China Institute for Science and Technology Policy at Tsinghua University. (2018). *China AI Development Report 2018* (p. 122). Retrieved from http://www.sppm.tsinghua.edu.cn/eWebEditor/UploadFile/China_AI_development_report_2018.pdf