

Production of doctorates in selected Asian countries

It can hardly be disputed that science and technology have made the advanced countries of the West what they are today. Many developing countries recognized the importance of science and technology as soon as they became independent and formulated science (or science and technology) policies. One important element of a nation's scientific enterprise is the production of qualified manpower. In this brief note, we look at the production of doctorates in five Asian countries, viz. India, China, Japan, South Korea and Taiwan since 1975. The raw data were obtained from *Science and Engineering Indicators 2002* (ref. 1). Gangan Prathap has drawn attention to the decline in the production of engineering doctorates in India². This note shows that India has produced a much larger number of doctorates in science (4466 degrees awarded in 1997) including mathematics, computer science and agricultural sciences than any of the other four countries. This raises the question if India is producing more Ph Ds in science than the other Asian countries, why has India's scientific output declined relative to the other countries? Are we producing far more science Ph Ds than we need? However if we consider doctorates in both science and engineering, both Japan (5769 degrees awarded in 1997) and China (4983 degrees in 1997) are doing better than India (4764 degrees in 1997).

Figures 1 and 2 give data on the numbers of doctorates produced in science and engineering, and science alone (including

mathematics, computer science and agricultural sciences) respectively.

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2. Gangan Prathap, *Curr. Sci.*, 2002, **83**, 1056.

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1. National Science Board, *Science and Engineering Indicators 2002*, National Science Foundation, Arlington, VA, USA. [<http://www.nsf.gov/sbe/srs/seind02/append/c2/at02-39.xls>]

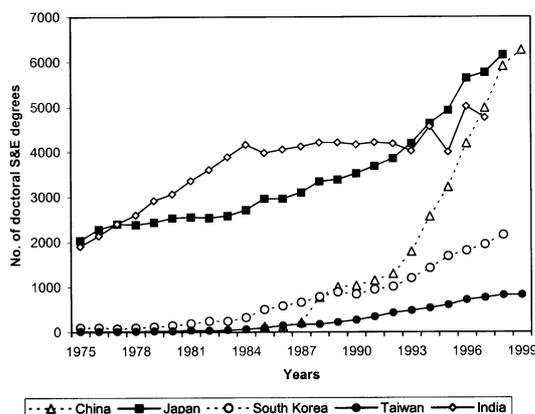


Figure 1. Doctoral S&E degrees in selected Asian countries 1975–99.

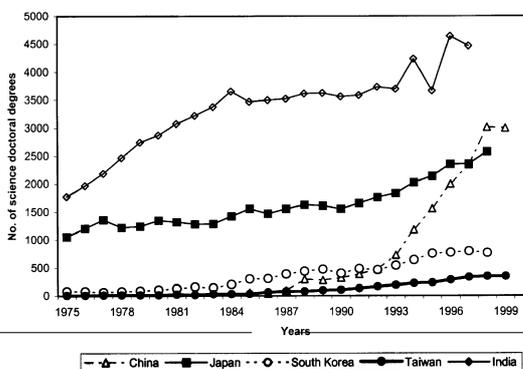


Figure 2. Doctoral science degrees in selected Asian countries 1975–99.