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Documenting China's Higher Ed Explosion

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In many discussions about the international standing of American higher education, China is the 800-pound gorilla -- the emerging scientific and technological superpower whose newfound focus on building a first-class postsecondary system poses a major threat to the national economic competitiveness and individual well being in the United States. Although some commentators have pooh-poohed the seriousness of the "China threat,"^[1] warnings about the Asian giant's push to better educate its citizenry have become standard fare in reports like "Rising Above the Gathering Storm"^[2] and other warnings^[3] about America's declining scientific and economic advantage.

For all the hyperbole, facts about what's actually happening on the ground in China can be hard to come by. A new study by economists at universities in Canada, New Zealand and China aims to document what its title calls "the higher educational transformation of China and its global implications," collecting in one place statistics and other information about enrollments, demographic changes, numbers of colleges and faculty publishing, among other categories.

Taken together, the evidence appears to support the conventional view of a postsecondary system very much on the move, with potentially significant implications for colleges and higher education leaders elsewhere in the world. But it is too early in China's higher education explosion to fully justify the tremulous reactions it is provoking around the world, suggests the study, which was published by the National Bureau of Economic Research^[4] (Its authors are Yao Li and John Whalley, of the economics department at the University of Western Ontario's Social Science Centre; Shunming Zhang, of the School of Economics and Finance at Victoria University of Wellington; and Xiliang Zhao, of the department of economics at China's Xiamen University.)

In pure bulk, the numbers behind China's expansion are startling. Between 1999, shortly after the country's leaders decided to focus on expanding access to and improving the quality of higher education as tools to propel the former Third World economy into the leading ranks of the world's powers, and 2005, the number of undergraduate and graduate students earning degrees from China's colleges and universities quadrupled, rising to 3.1 million from 830,000. Enrollments grew even faster over that period, with the number of new entering students growing to nearly 5 million in 2005.

Much of the growth has occurred in scientific and engineering fields, prompting much of the concern that has gripped the American technology community and stimulated calls for heightened federal investment in the sciences. China has also taken significant strides in recent years to shrink the educational gap that separates its urban centers from its enormous rural populations, with rural students making up 53 percent of newly admitted students in 2005, up from below 47 percent in 1998.

Although China's higher education system has continued to expand, growing to nearly 1,800 institutions in 2005 from about 1,000 in the late 1990s, much of that growth has occurred among short-term colleges and vocational schools. Among universities, the more pervasive trend in recent years, according to the NBER study, has been in consolidation, shifting away from an emphasis on having all institutions increase their enrollments to having a smaller number of elite universities. "In many of China's major cities there has ... been consolidation of universities, with, say, 4 or 5 small universities in the city consolidated into a large single entity as a way of improving their ranking," the report notes.

That shift from quantity to quality (or at least quality-based quantity) has also revealed itself in Chinese universities' expectations for faculty members in terms of scholarly publishing, dramatically changing the relationships between institutions and professors, with significantly heightened stakes. "Indicators of educational attainments in terms of international rankings across countries, publications of papers, and citations feed directly into annual performance indicators for Chinese faculty in an ongoing process which goes substantially beyond the once in a lifetime tenure system outside China," the authors write. "It is not uncommon for an annual target of three international publications to be set for faculty members, with termination of employment to occur on non-fulfillment."

Those heightened expectations have changed the global playing field in scholarly publishing, particularly in the sciences, where expansion of China's higher education system has been particularly focused. The country's share of all published Asian science and engineering articles grew from 14.54 percent in 1998 to 22.43 percent in 2003, accelerating at an average annual rate of 9 percent. And in 2004, according to another recent study^[5] cited in the NBER report, "China is now one of the largest producers of scientific output as measured by its share in the world total of peer reviewed scientific articles, ranking fourth, with 6 percent of the world's output, in 2004. That trailed the European Union (at 38.1 percent) and the United States, at 32.8 percent, but China's output had doubled from 1997 while the others declined. China is also a growing presence in terms of patent activity, though it still trails the United States, Europe and Japan by huge proportions.

The elevated demands on professors' publishing isn't the only major change in the relationship between China's universities and its teaching faculty. After generations of Chinese academics worked on the equivalent of lifelong employment contracts, some of the country's elite institutions have abandoned tenure for all but full professors, with "associate professors in arts and sciences and lecturers in all subjects ... offered employment contracts up to 12 years," the authors write. Beyond the top institutions, "it is now common for

researchers and scholars in many Chinese universities to receive only 3-year contracts," often receiving quotas in terms of minimum scholarly publication in specific journals within precise time periods.

Such a structure, the article speculates, "will likely produce pressures in the wider international community outside China for changes elsewhere because of the competitive pressures which will be created.... Institutions in the OECD and elsewhere will likely have to react and eventually adapt."

Whether China ultimately sets the agenda for the United States and other countries on faculty productivity and other accounts, the Asian nation is already mimicking certain aspects of the American higher educational experience, some of which it may come to rue.

The NBER study reports that a 2005 survey by the Chinese Academy of Social Sciences found that Chinese households were spending more on education than on any other consumption category, overwhelming pension and housing expenditures, and that for rural families, the proportion of per capita income had doubled, to a full third, from 1996 to 2003.own student loan problems.

And it appears that the Chinese have their own problems with the increasingly nettlesome American subject of student loans. According to the study, China has focused on student loans to help ensure access for lower income students, but there have been "difficulties in implementation," the authors write. "Chinese banks have been reluctant to lend money to poor students, and often ask them to return the loan before they graduate. If poor students cannot return funds before they graduate, they are not authorized to receive certificates of graduation and degrees and their chance of finding good jobs is small."

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