

Editorial

Science makes the pie bigger

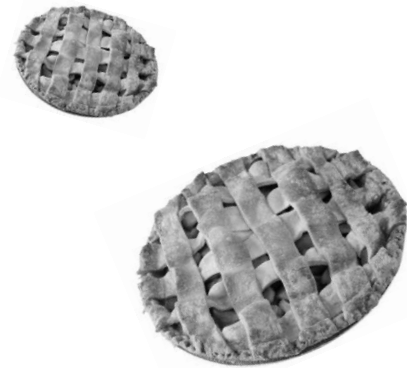
C. C. Chancey

University of Northern Iowa
Cedar Falls, Iowa 50614-0150 USA

How often do we hear nowadays that the economic pie is only so big—that it can't get any bigger? This observation usually is the opening for a discussion on how resources (collectively the pie), should be doled out. Of course, such discussions are by nature political, and they too often tend to become politicized in the present economic environment, at least in the U.S. Yet, modern history teaches a more optimistic lesson: science, technology and innovation do grow the economic pie.

Since 2004, the Bureau of Economic Analysis in the US Department of Commerce has collaborated with the National Science Foundation to produce estimates of how spending on scientific research and development (R&D) has affected growth in the US's gross domestic product (GDP).¹ The results of their analyses are clear and might be surprising:

- R&D accounted for 5 percent of real GDP growth between 1959 and 2004, and 7 percent between 1995 and 2004. This ramp-up in R&D's contribution helps explain the pick-up in economic growth and productivity since 1995.
- Information, communication and technology (ICT) and biotechnology-related industries accounted for two-thirds of the business sector's R&D contribution to GDP growth between 1995 and 2004.
- Recognizing R&D as investment boosted the level of state GDP the most in New Mexico (8.2 percent) and in Maryland (6.2 percent) be-



tween 1998 and 2002.

- In 2004, the value added of majority-owned foreign affiliates of U.S. multinational corporations (MNCs) rose by \$26 billion, or 3.1 percent, with R&D capitalization. The value added of majority-owned U.S. affiliates of foreign MNCs rose by \$28 billion, or 5.5 percent. For U.S. parent companies, value added increased by \$148 billion, or 6.7 percent.

Science, the well-spring of R&D, can only flourish if the education of new scientists flourishes. The evidence of the last 60 years is clear but also rare. Very few societies in the history of the world have managed to create on-going scientific subcultures. The western scientific revolution of the last 400 years is not a normal occurrence, but the exception.

We must be careful not to destroy the scientific enterprise by neglect. It is a hard lesson in this time of tight budgets, but science is the only road to a bigger pie—a result that improves the lives of all citizens.

¹ US NSF Press Release 07-129, "Research and Development Bolsters U.S. Economic Growth" See www.nsf.gov/news/news_summ.jsp?cntn_id=110139