

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY**

HEARING CHARTER

American Competitiveness: The Role of Research and Development

Wednesday, February 6, 2013

9:30 a.m. – 11:30 a.m.

2318 Rayburn House Office Building

Purpose

On Wednesday, February 6, 2013, the House Committee on Science, Space, and Technology will hold a hearing to examine the status of and outlook for America's science and technology enterprise, examining the impact of research and development (R&D) on the lives of the American people and looking ahead to potential breakthrough innovations for the future. Witnesses will discuss the historical context for American R&D, how it is divided between public and private investments, where the U.S. ranks globally on innovation and investment, and what the future may hold for American innovation.

Witnesses

- Mr. Richard Templeton, President and CEO, Texas Instruments
- Dr. Shirley Ann Jackson, President, Rensselaer Polytechnic Institute
- Dr. Charles Vest, President, National Academy of Engineering

Overview

The National Academies report "Rising Above the Gathering Storm"¹ in 2005 initiated a renewed policy debate on the nature of America's competitiveness stature and the increasing investment of other countries in both research and science education. Although the U.S. still remains the leader in annual total investments by both the public and private sectors, nations such as China and India are making substantial investments in R&D and promoting policies to attract innovative companies and educate a technically-trained workforce. The Science, Space, and Technology Committee will continue to take the lead on legislation to provide direction on federal R&D spending and STEM (science, technology, engineering and mathematics) education.

U.S. industry represents 62 percent of America's R&D investment, with more than three-quarters of industry R&D dedicated to development instead of research. By contrast, the federal government funds more than 60 percent of all basic research, characterized by longer-term activities that industry cannot afford due to the higher risks and expenses. The federal government supports approximately \$140 billion annually in R&D. More than half of the federal basic research is conducted by universities.

¹ <http://www.nap.edu/openbook.php?isbn=0309100399>

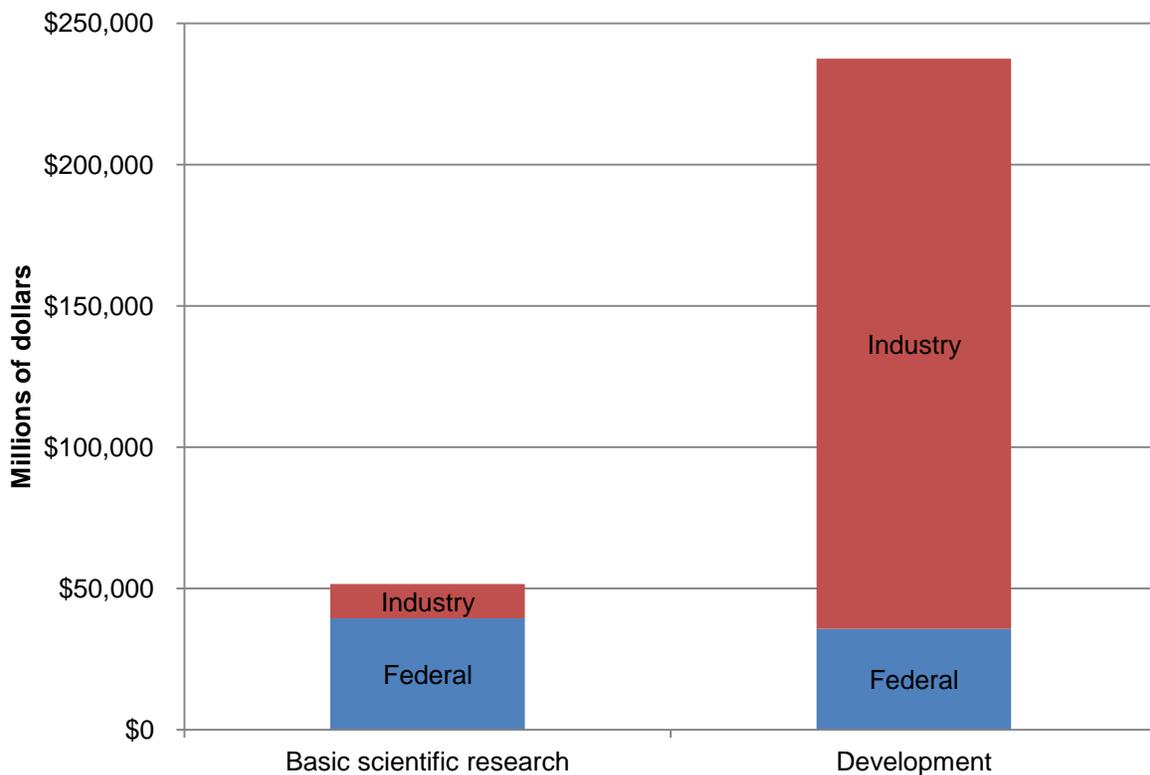
Federally-funded basic research has supported the creation of technological capabilities that impact the lives of Americans every day, such as magnetic resonance imaging, global satellite navigation, lasers, and broadband internet. Though the relationship between federally-funded R&D and technological innovation to the marketplace is complex, businesses that conduct or fund R&D have a much higher rate of innovation than those that do not.²

Tomorrow's innovations are expected to further transform the way we live. However, the future of specific technological innovations is particularly difficult to predict, especially how they might be fully utilized and when these innovations will become readily available and used by the American public.

This hearing will explore many science and technology policy issues, including specific recommendations for federal policies that ensure federal R&D innovations continue to drive American economic competitiveness.

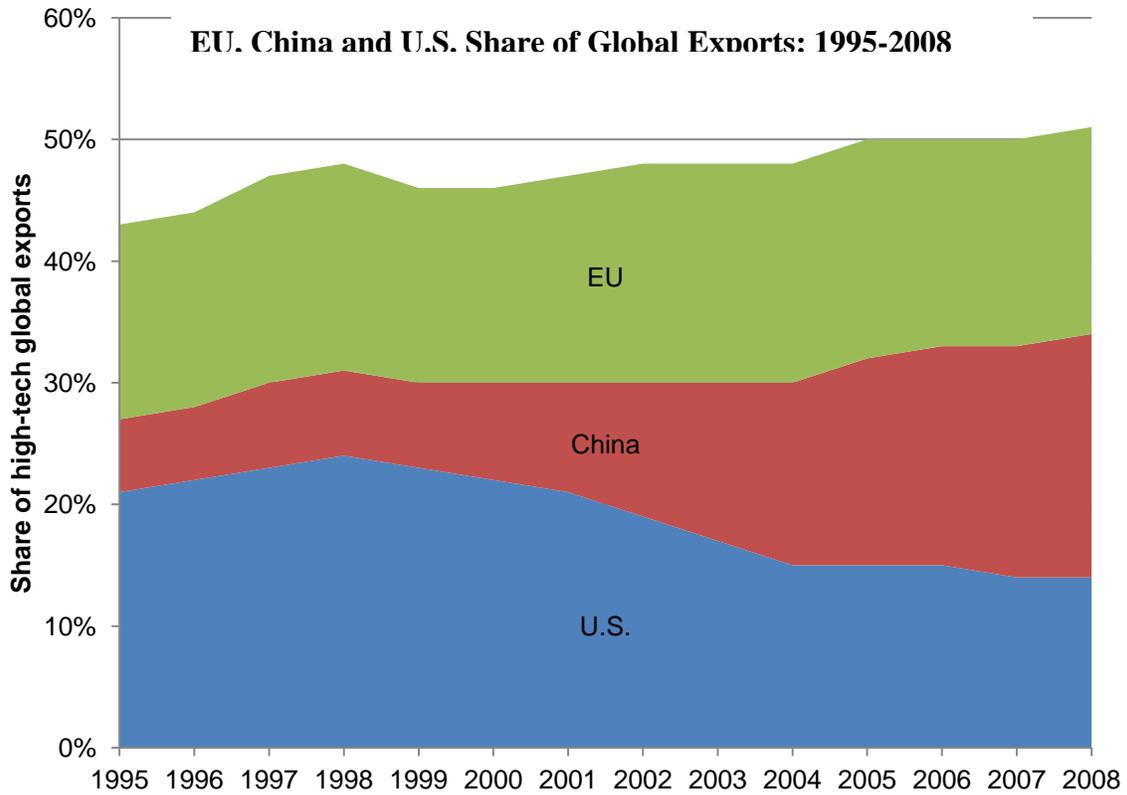
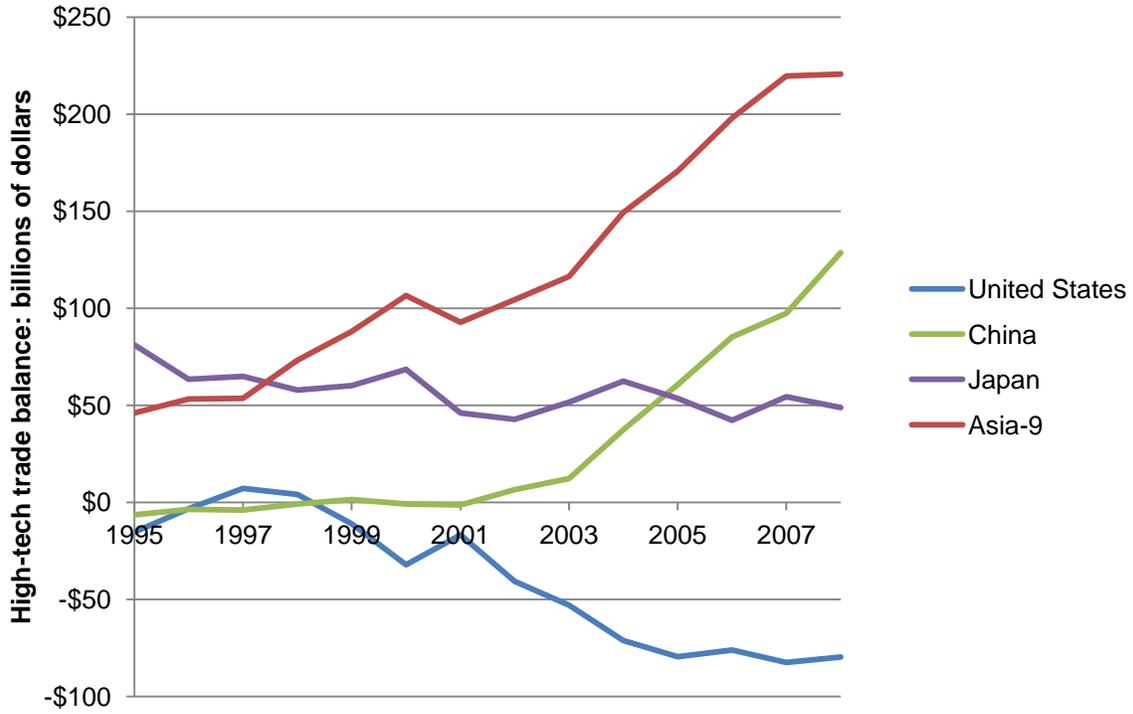
Some useful background information related to U.S. industry and federal R&D spending and U.S. exports and market share for hi-tech products are provided below. More information and context for this background information can be found at these websites: <http://www.innovationtaskforce.org/docs/Benchmarks%20-%202012.pdf> and <http://www.aaas.org/spp/rd/guihist.shtml>.

Public and Private Distribution of R&D



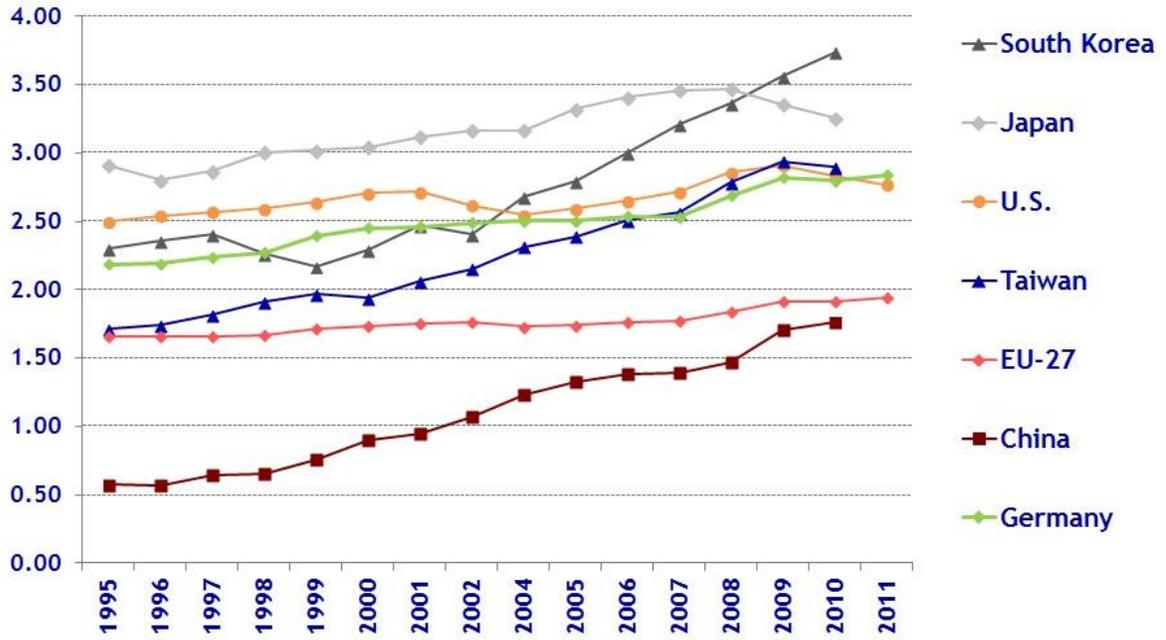
²Research, Development, Innovation, and the Science and Engineering Workforce; NSF 2012; <http://nsf.gov/nsb/publications/2012/nsb1203.pdf>

The High-Tech Trade Balance for Selected Nations



National R&D Investment

percent of GDP



Source: OECD, Main Science and Technology Indicators 2012.
 2011 data not available in all cases.
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