

Rising to the Challenge

U.S. Innovation Policy for the Global Economy



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National Academy of Sciences
Washington, DC
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The Global Innovation Imperative

"America's future economic growth and international competitiveness depend on our capacity to innovate."



*Barack Obama
January 2011*

The Global Innovation Imperative

“the direction of China's science and technology development is innovation, innovation and innovation”



Xi Jinping
April 2014

The Global Innovation Imperative

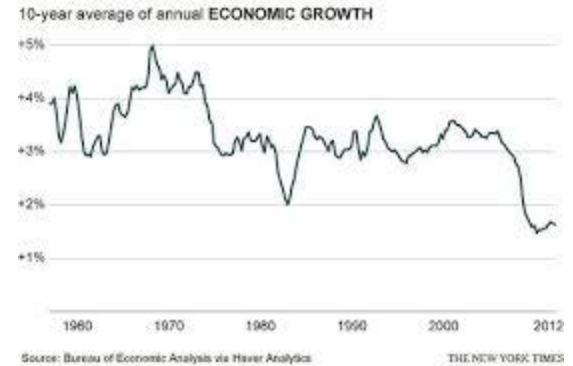
“Of course our biggest ambitions
have got to be for innovation”



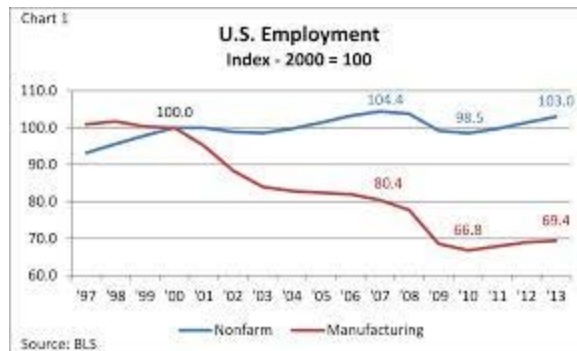
*David Cameron
Davos 2015*

The Challenges

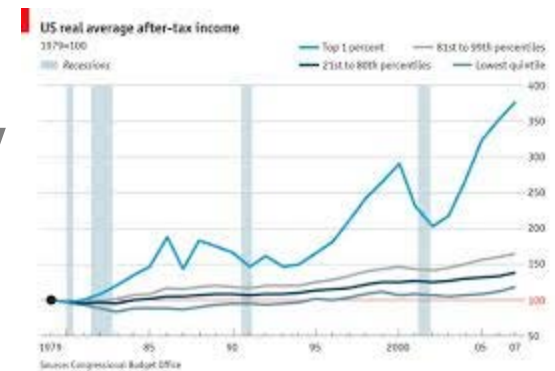
Economic growth



Jobs



Income Inequality



The Academies' Study of Comparative National Innovation Policies

- Review national innovation policies
- Better understand their programs, goals, instruments, mechanisms, funding levels, achievements, and current challenges
- Examine implications for U.S. policy
- Develop recommendations



What are Leading Nations Providing?

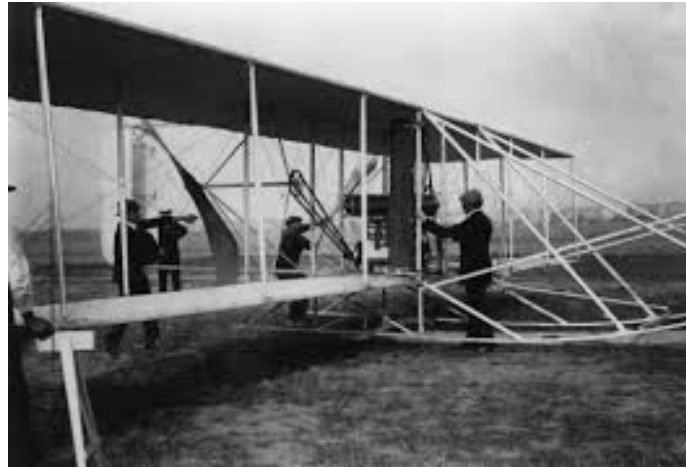
- High-level focus on growth
- Support for universities
- Funding for research
- Support for innovative small businesses
- Government-industry partnerships to bring new products and services to market

What are Leading Nations Providing?

ITRI is the sole source of R&D
for small firms in Taiwan*



What are Leading Nations Providing?



Gebrüder-Wright-Strasse

What are Leading Nations Providing?



Rising to the Challenge: U.S. Assets

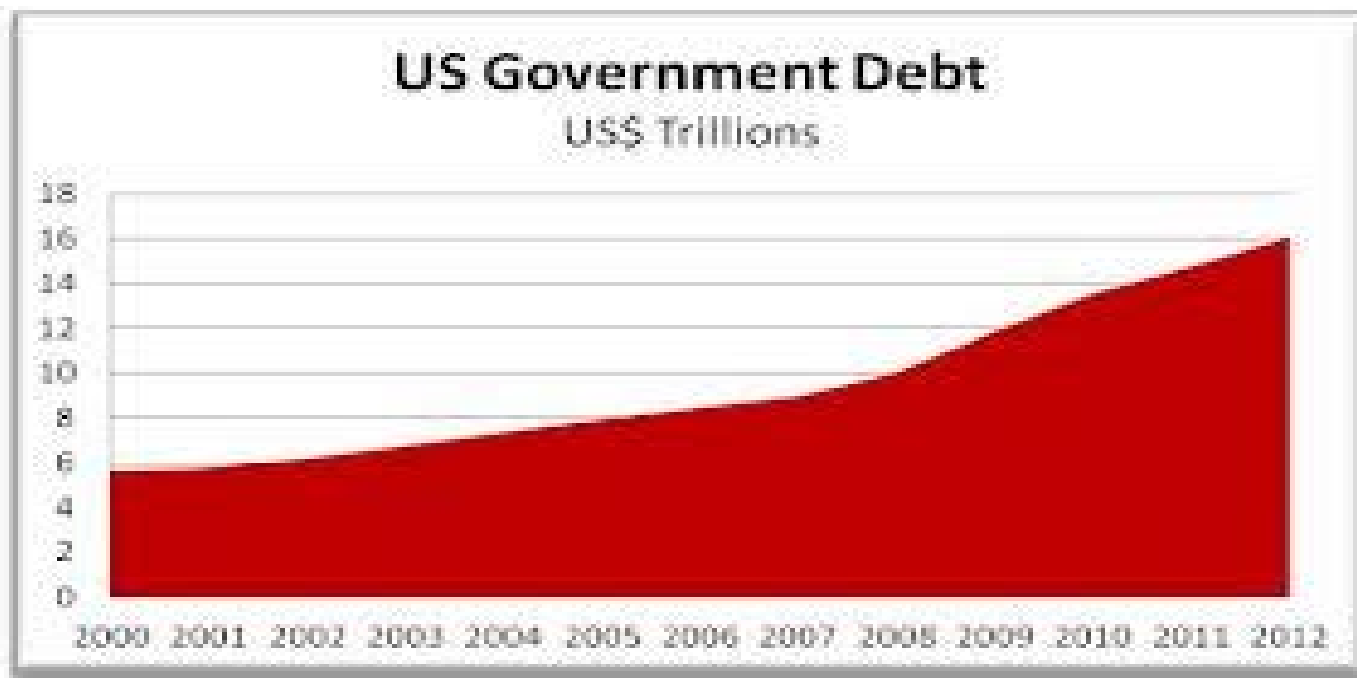
The U.S. has some of the world's best framework conditions:

- An open and flexible innovation system
- Strong IP laws
- Constructive bankruptcy laws
- Well-developed capital markets
- Extensive worker mobility



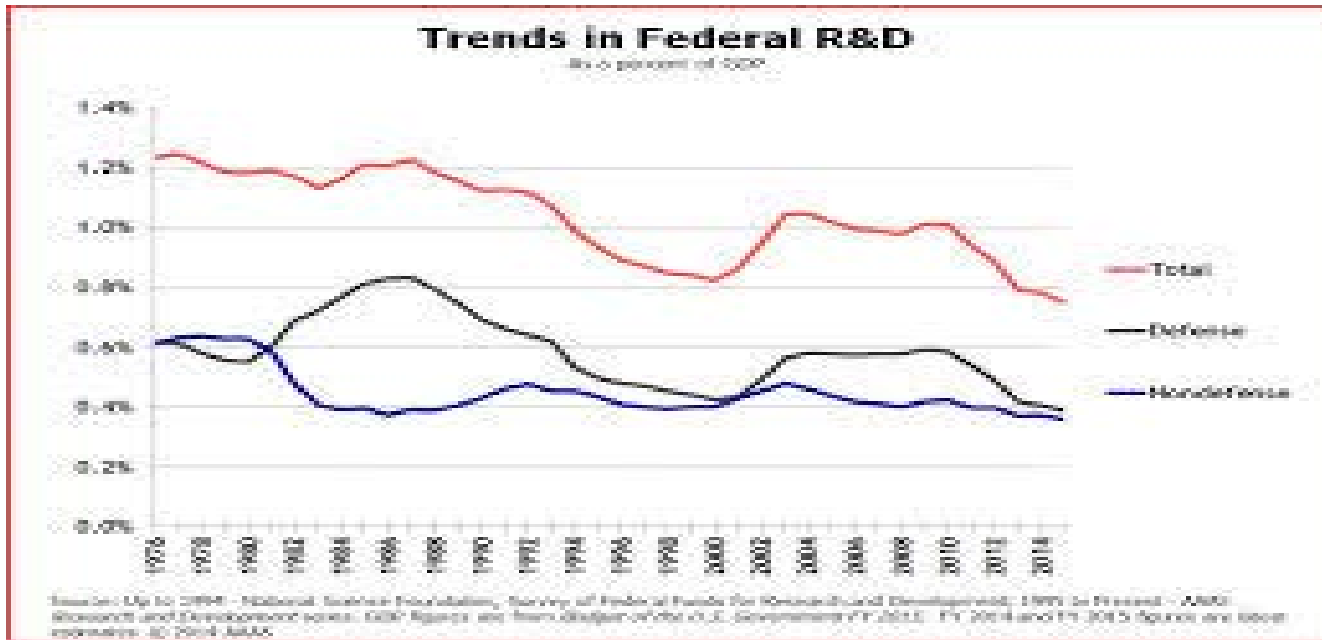
America's Challenges

– Fiscal constraints



America's Challenges

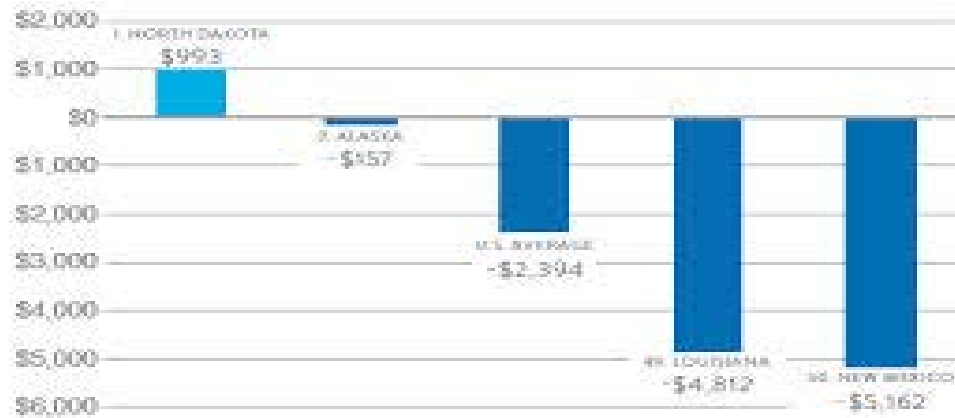
– Declining Federal R&D intensity



America's Challenges

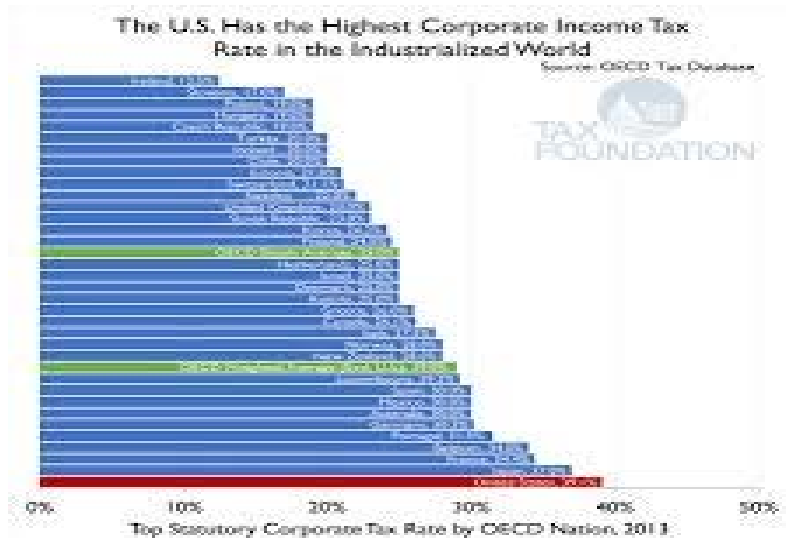
– Declining university funding

Figure 1: Real Increase/Decline in State Higher Education Funding Per Student, 2008-2012

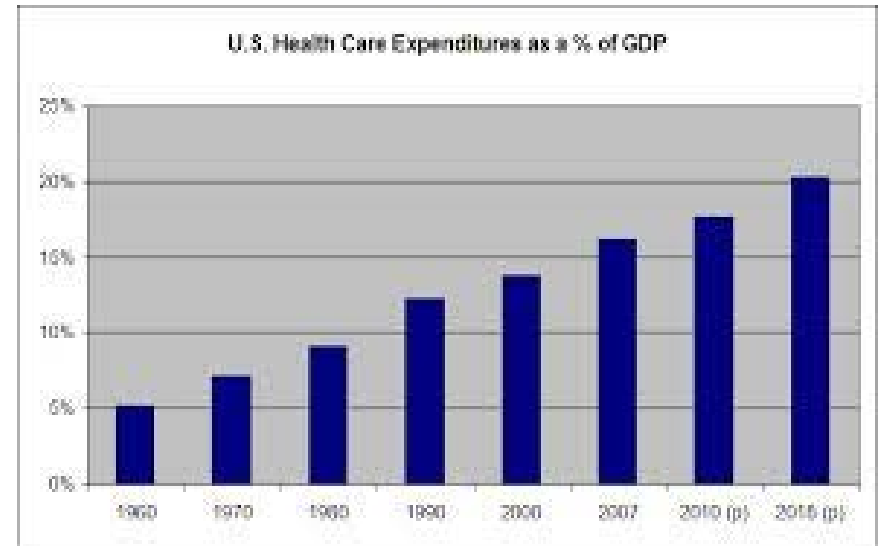


America's Challenges

High corporate taxes



High health care costs



America's Challenges

– Inadequate infrastructure



America's Challenges

- Shortfalls in training and skilled immigration



Rising to the Challenge

- NO “SPUTNIK moment”!



Rising to the Challenge

- **The future is what we make of it.**



Build 21st Century Infrastructure



Raise and sustain federal support for R&D

- Sustain support for university research
- Improve, reauthorize, innovate public-private partnerships for innovation

Capture More of the Value of R&D Investments



+



+



Support innovative small businesses



- Provide new programs to transition research to applications, e.g., NIH
- Retain the flexibility and focus of the SBIR program
- Incentivize cooperation with federal labs and university labs.

The Importance of SBIR

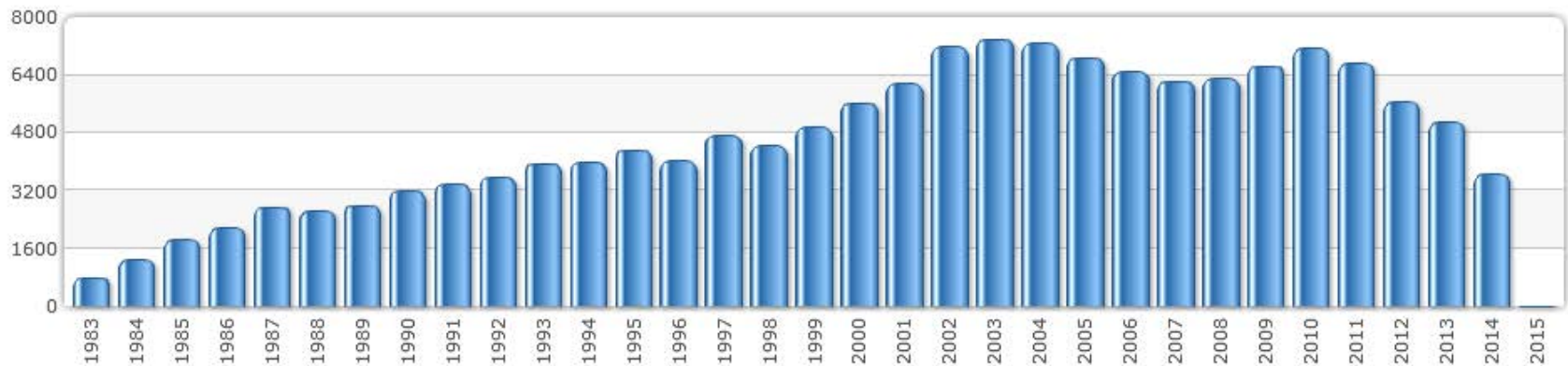
- Played a role in the growth of firms like Qualcomm, Symantec, and others.



- From 2002 to 2006, about 25% of *R&D Magazine's* top 100 annual innovations came from companies that had received an SBIR grant at some point in their history.

SBIR

Number Of Awards By Year



The Innovation Policy Forum Is About Policy



More Engagement Abroad

- **Monitor and learn** from what the rest of the world is doing
 - Benchmark best practices
 - Respond and adapt at home

International Cooperation on Shared Objectives

- Address global challenges in health, energy, climate.
- Capitalize on the globalization of research and innovation
- Expand exchanges of scholars and students

The Innovation Policy Forum

- Discussions of policy
- Identifying global best practices
- Cooperation with those with common interests.

Recent Forum Meetings

- MIT – Advanced Manufacturing in the Innovation Economy
- Medical Devices -- Cybersecurity and Innovation
- Vietnam -- National Technology Innovation Foundation
- Cyber-security -- SMEs in DOD procurement
- Chinese Academy of Sciences – SMEs
- Zhongguancun S&T Park

Looking Ahead

- Examine domestic components of innovation ecosystem
 - the role of universities



Looking Ahead

- Examine additional sectors --
 - e.g. Biotechnology and IT/health



Looking Ahead

- Engage in additional outreach abroad



Looking Ahead

Asking Hard Questions

Innovation



= ?

Employment



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