



What Changes in Federal Policy Might Spur Innovation?

Presentation at the NBER Conference on
Innovation Policy and the Economy

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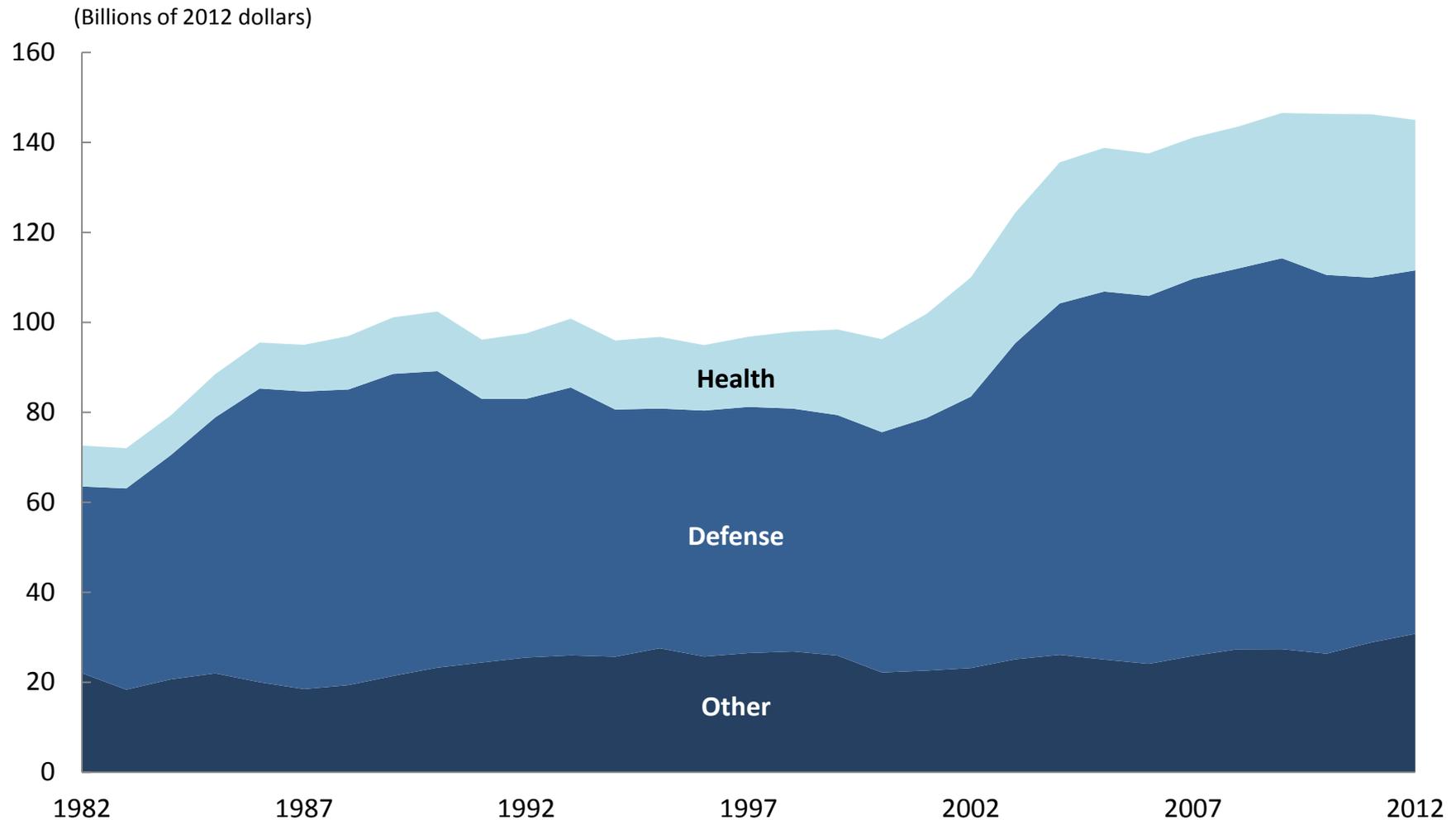
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Possible Policy Approaches for Increasing Innovation:

- Increase or Redirect Federal Funding for Research and Development
- Increase or Redirect Federal Support for Education
- Change Tax Treatment of Private Investment
- Increase Immigration of Highly Skilled Workers
- Pursue Patent Reform
- Reconsider Regulatory Goals

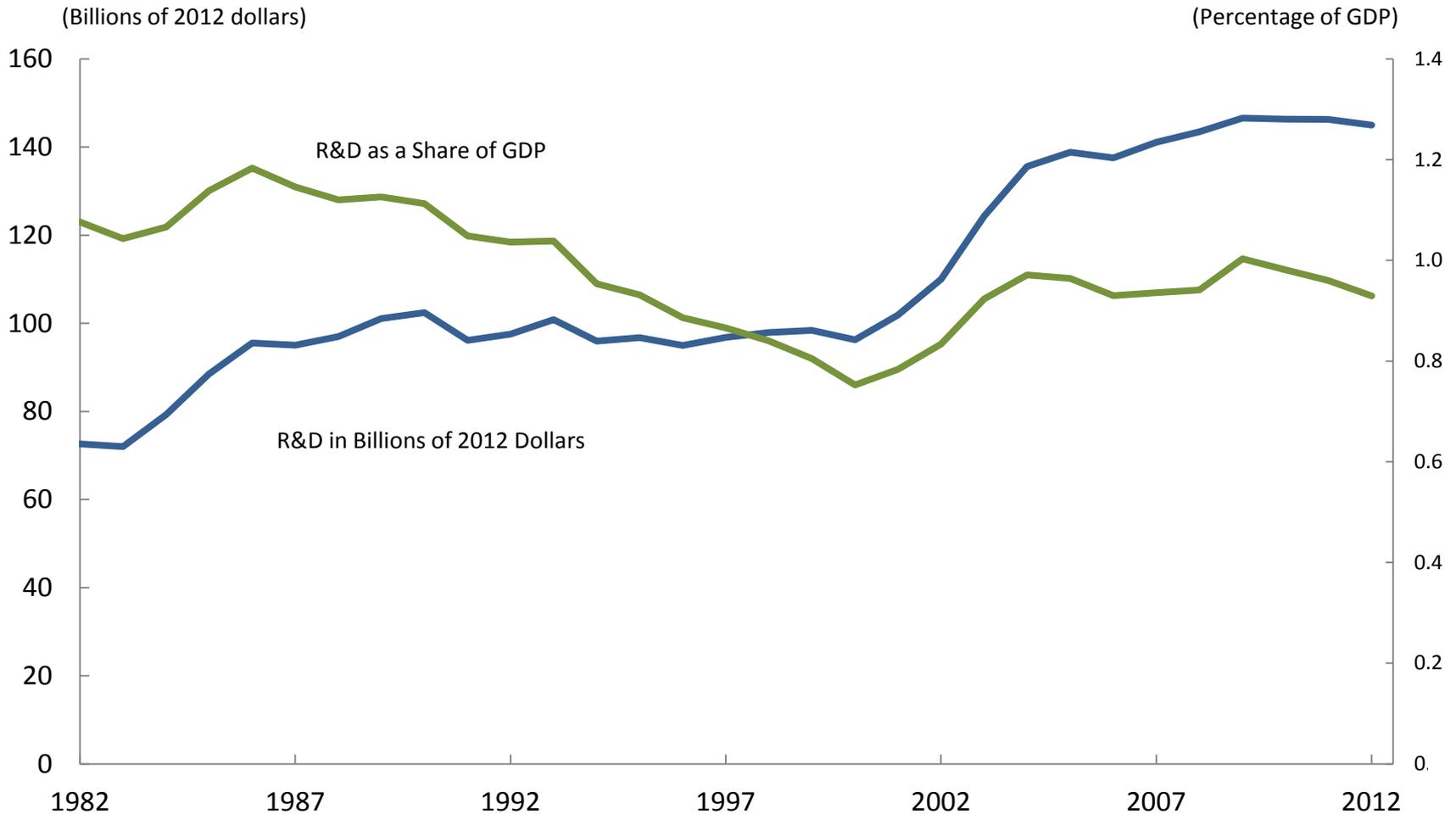
Possible Policy Approach for Increasing Innovation:
Increase or Redirect Federal Funding for Research and
Development

Federal spending for R&D has increased in real dollars in a few areas during the past few decades



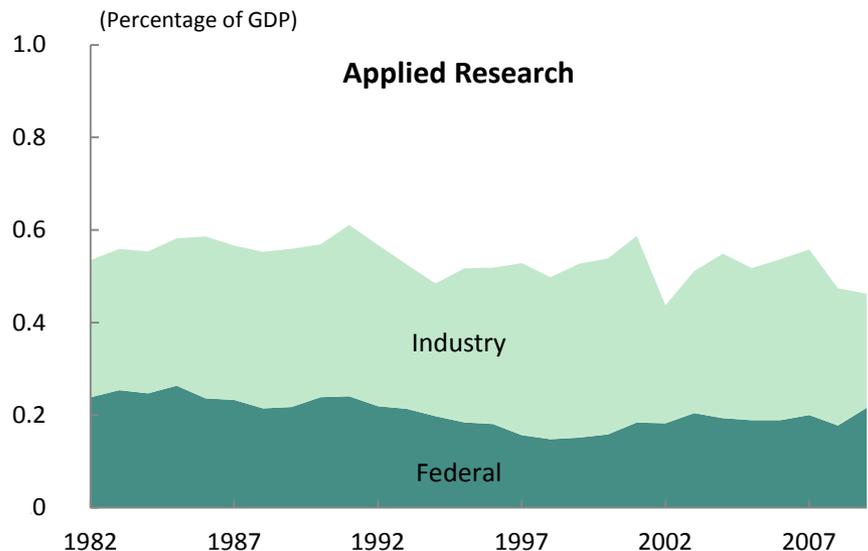
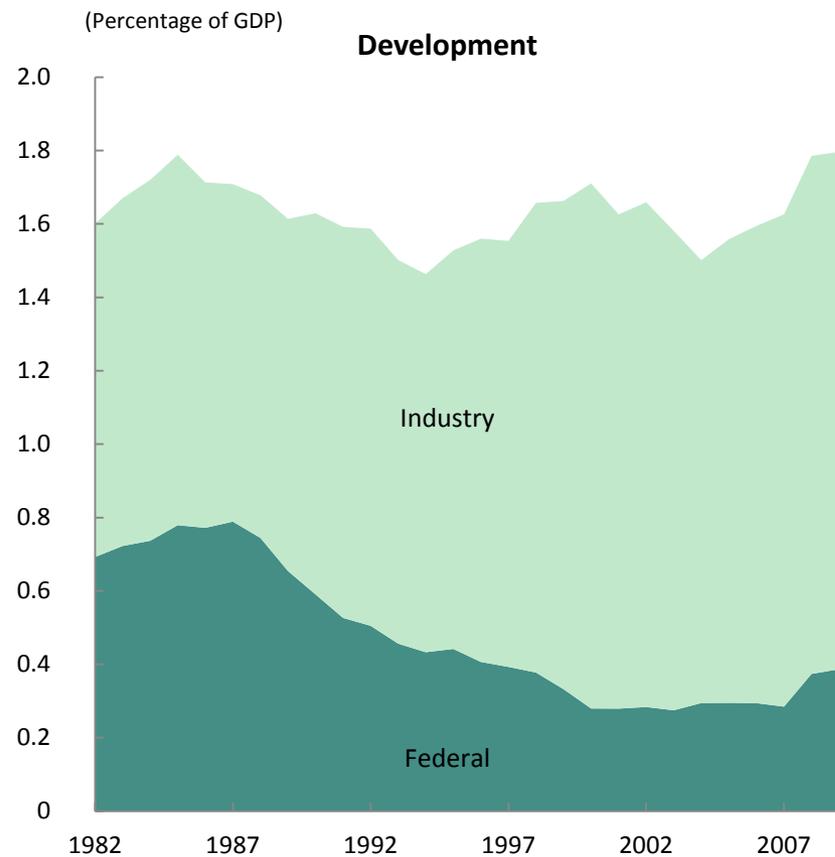
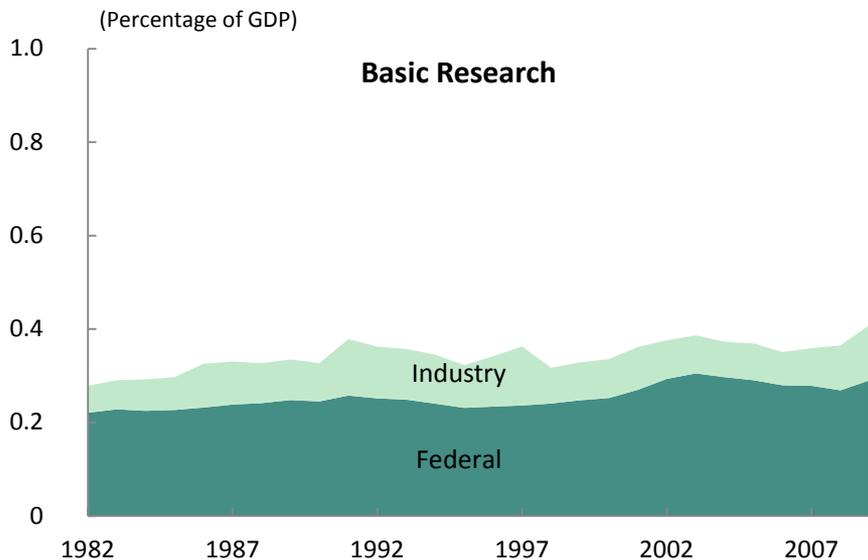
Data from American Association for the Advancement of Science, *Trends in Federal R&D by Function, FY 1949-2013*.

Although federal spending for R&D has increased in real dollars, it has declined slightly relative to GDP



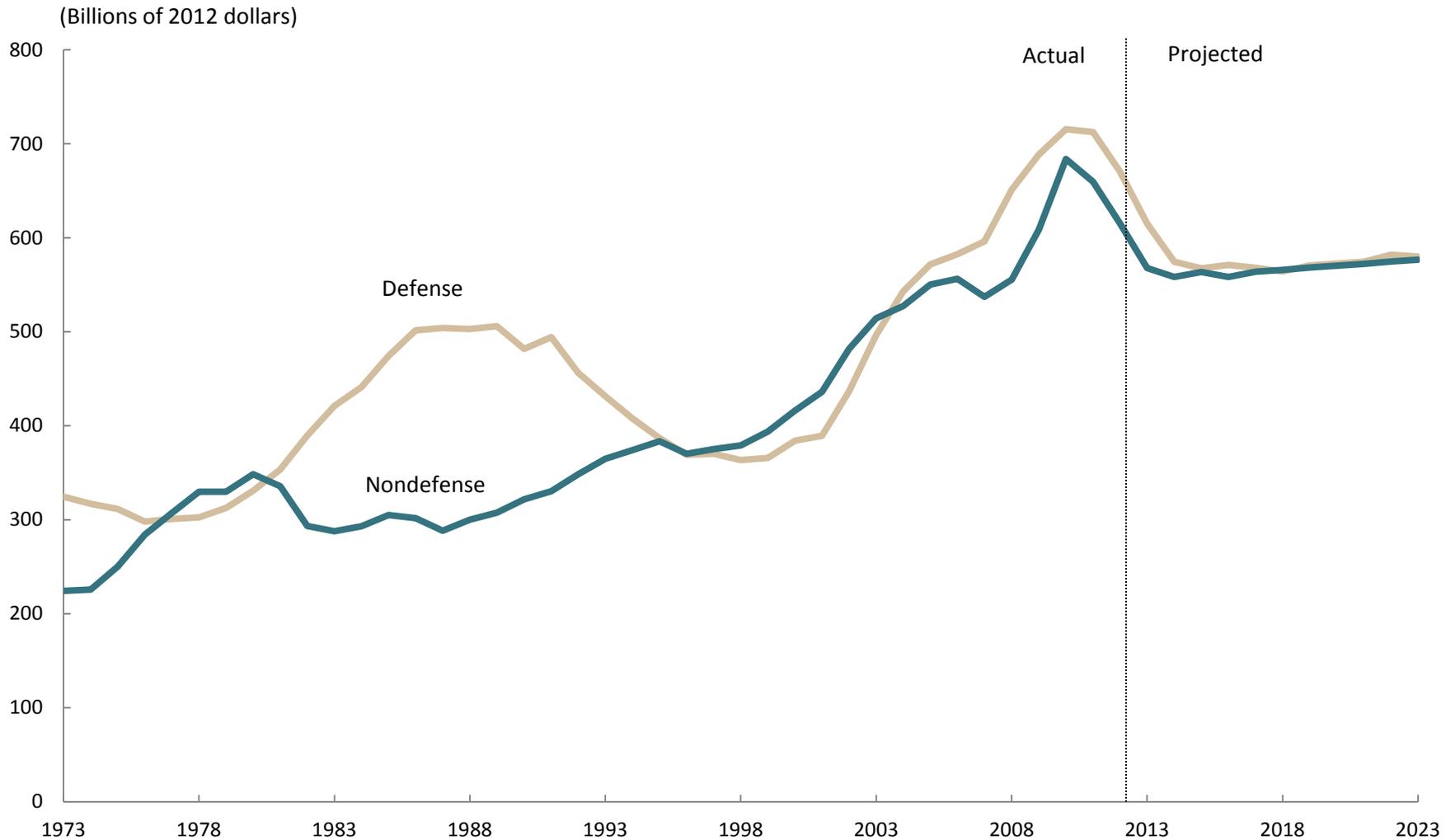
Data from American Association for the Advancement of Science, *Trends in Federal R&D by Function, FY 1949-2013*; Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2013: Historical Tables*, Tables 9.8 and 10.1.

Relative to GDP, federal spending for research has changed little and for development has declined



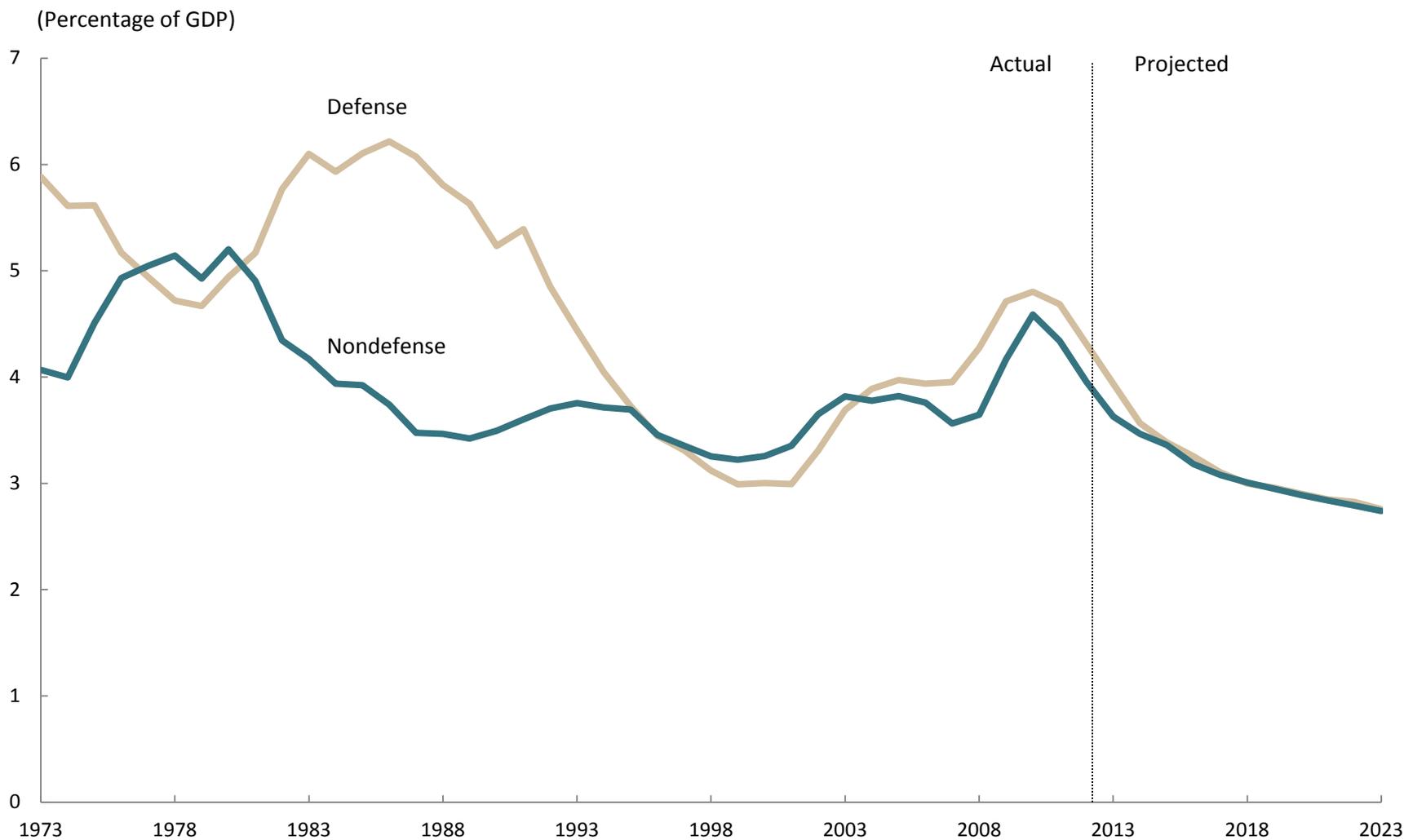
Data from National Science Board, *Science and Engineering Indicators 2012* (2012); Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2013: Historical Tables*, Table 10.1.

Because of caps on discretionary funding under current law, federal discretionary spending is leveling out in real dollars



Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2013 to 2023* (February 2013).

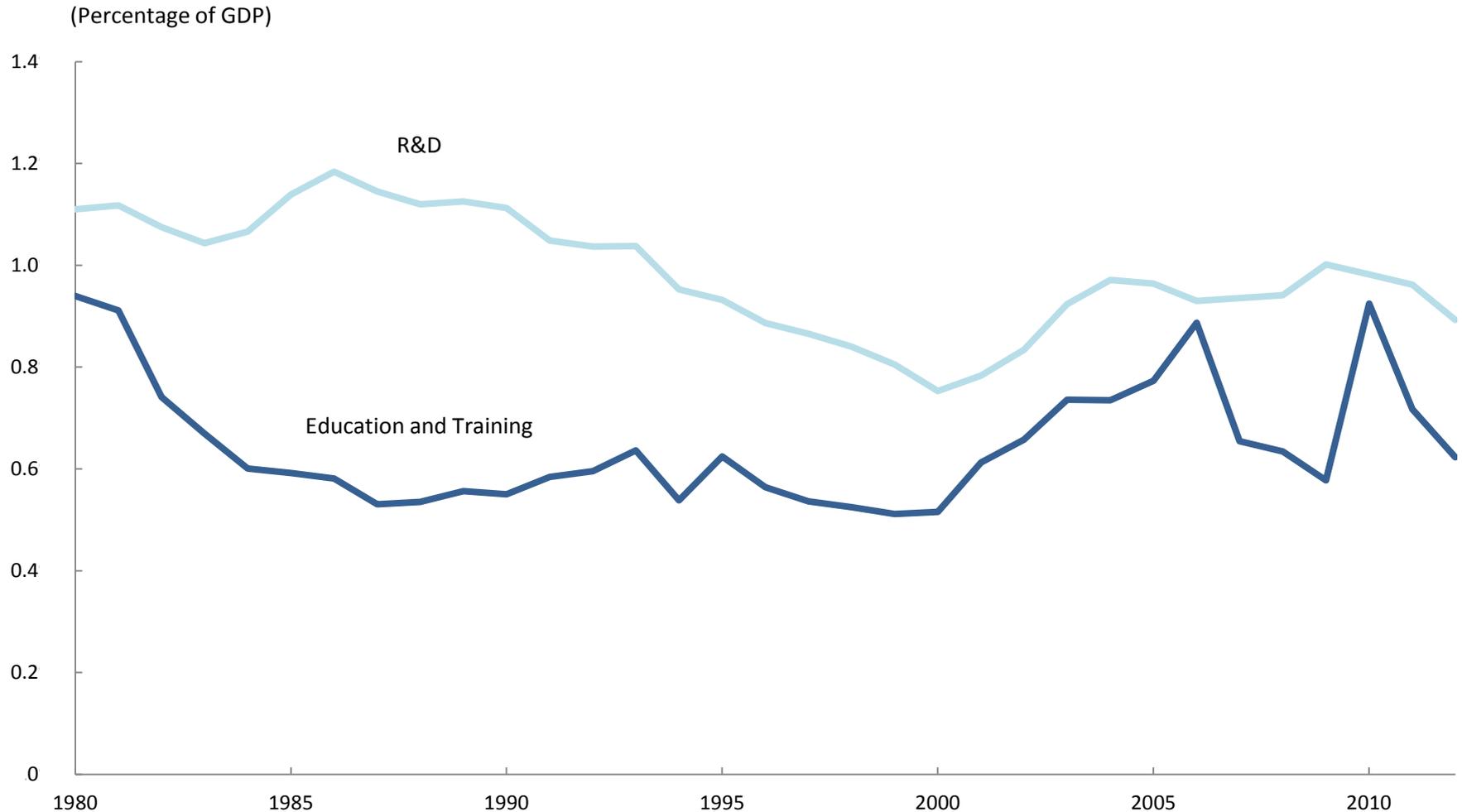
Because of caps on discretionary funding under current law, federal discretionary spending is declining relative to GDP



Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2013 to 2023* (February 2013).

Possible Policy Approach for Increasing Innovation: Increase or Redirect Federal Support for Education

Federal spending for education and training has been less than 1 percent of GDP



Data from Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2013: Historical Tables*, Tables 9.8, 9.9, and 10.1.

Federal support for education could be increased in several ways

STEM (science, technology, engineering, and math) education

- Increase funding for academic research in STEM fields
- Provide more scholarships for STEM students
- Train math and science teachers to be more effective
- Develop innovative approaches to math and science education

General education

- Hold down interest rates on student loans
- Provide more generous Pell grants for lower-income students

Possible Policy Approach for Increasing Innovation: Change Tax Treatment of Private Investment

The federal tax treatment of private investment could be changed in several ways

Enhance the R&D tax credit

- Make it permanent (at the end of this year, it will expire for the 16th time in 32 years)
- Increase the credit for newer or merged firms from its current 14 percent to the 20 percent that older firms get
- Include other types of investment, such as software developed for internal use

Lower the tax rates paid by U.S. multinational corporations

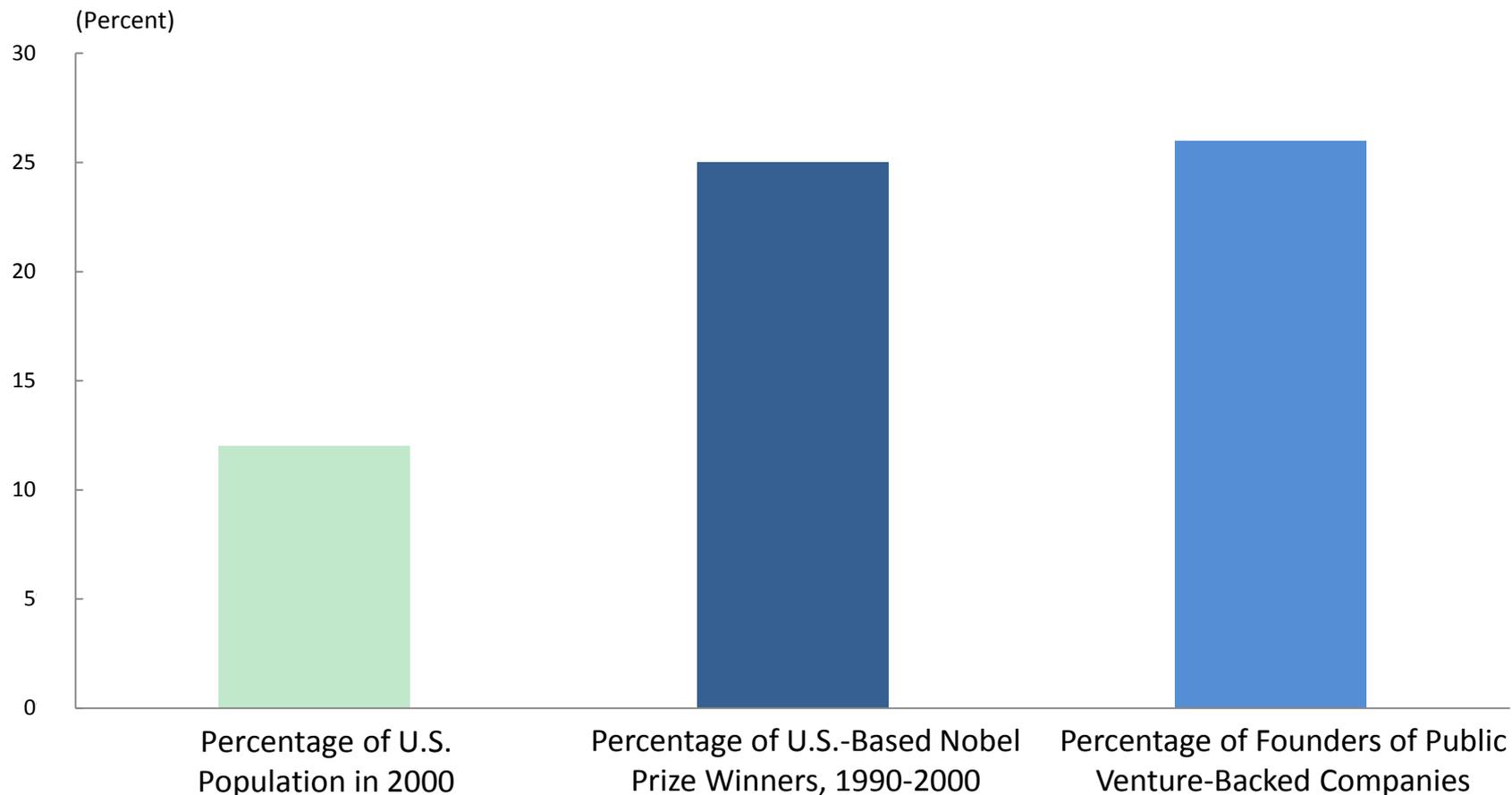
- Unclear if such a change would spur innovation because the specifics of the change would matter

Increase support for manufacturing

- Unclear if such a change would spur innovation because innovation is valuable in other sectors as well

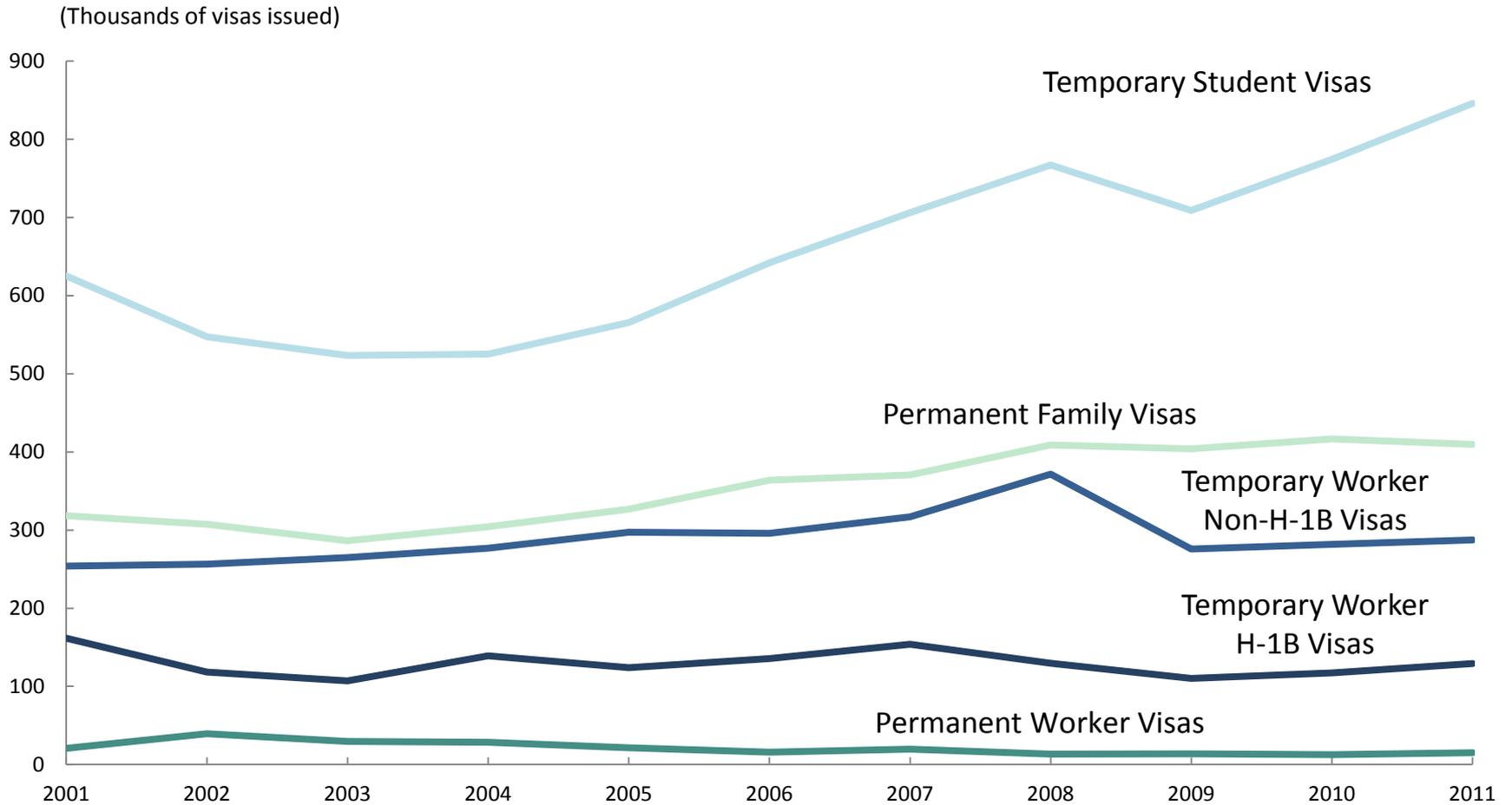
Possible Policy Approach for Increasing Innovation:
Increase Immigration of Highly Skilled Workers

Immigrants represent larger shares of Nobel Prize winners and founders of public venture-backed companies than of the U.S. population



Data from Giovanni Peri, "Higher Education, Innovation, and Growth," In Giorgio Brunello, Pietro Garibaldi, and Etienne Wasmer, eds., *Education and Training in Europe* (Oxford: Oxford University Press, 2007); Stuart Anderson and Michaela Platzer (2006), *American Made: The Impacts of Immigrant Entrepreneurs and Professionals on U.S. Competitiveness*, National Venture Capital Association (2006), www.nvca.org/index.php?option=com_content&view=article&id=254&Itemid=103.

A small share of visas goes to workers because of their skills



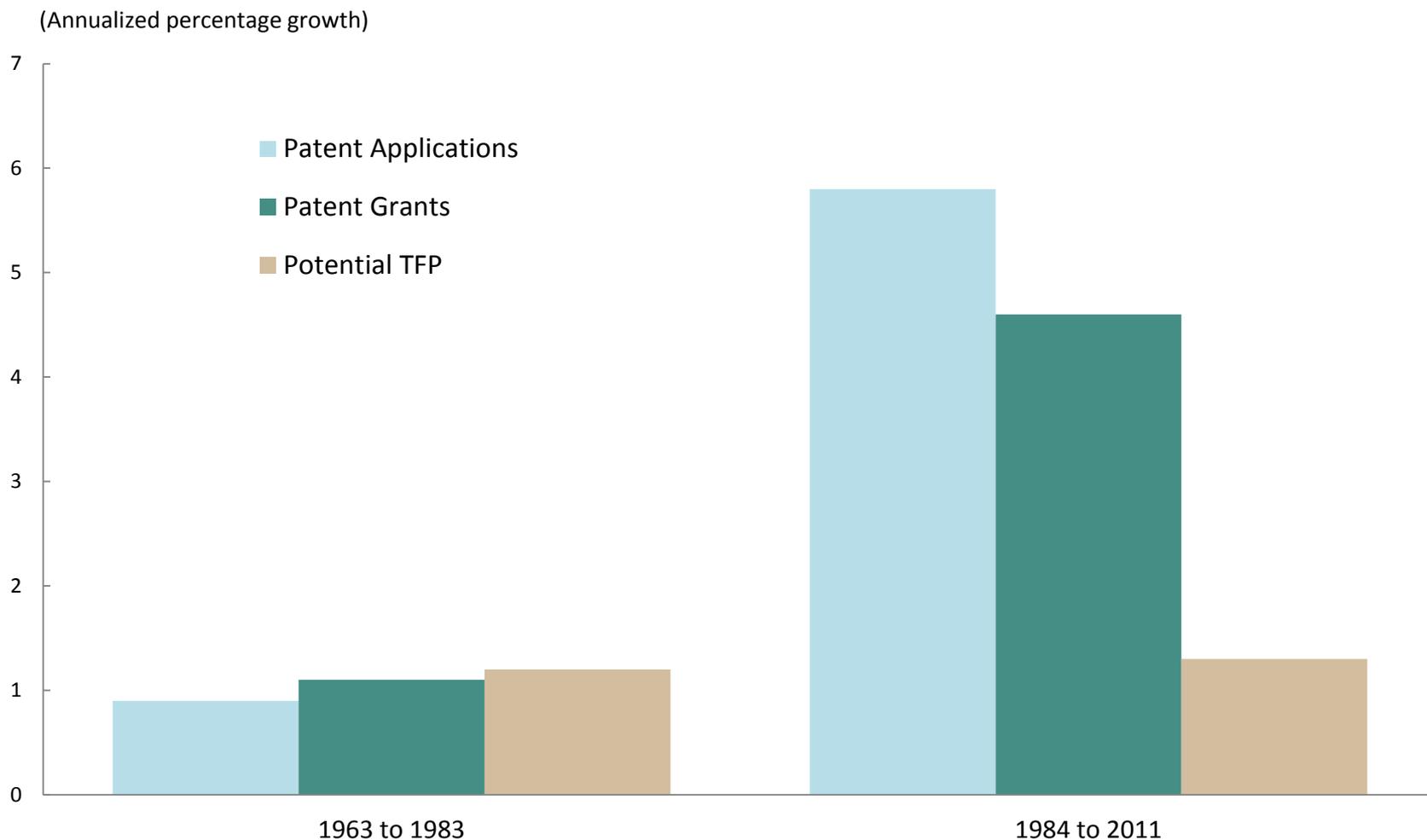
Data from U.S. Department of State, *Immigrant and Nonimmigrant Visa Statistics, 2001-2011*.

Immigration of highly skilled workers could be increased in several ways

- Raise or eliminate quotas for H-1B visas
- Increase permanent visas for workers
- Allow foreign students in STEM fields to stay in the country after graduation, either temporarily or permanently

Possible Policy Approach for Increasing Innovation: Pursue Patent Reform

Faster growth in patents during the past 30 years has not translated into faster productivity growth



Data from U.S. Patent and Trademark Office; and Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2013 to 2023* (February 2013).

Possible Policy Approach for Increasing Innovation: Reconsider Regulatory Goals

Policymakers balance innovation against other regulatory goals

Innovation is balanced against safety, fairness, privacy, government cost, and other considerations.

Areas of regulation where the encouragement of innovation has received attention in the past and might receive greater attention in the future include regulation of pharmaceuticals, auctions of wireless spectrum, and oversight of e-commerce, among others.

Conclusion

A wide array of federal policy approaches could be pursued to spur innovation, including increased spending on research and development, increased support for education, lower taxes on private investment, greater immigration of skilled workers, patent reform, and adjustments to regulatory policies.

However, those approaches would necessitate a redirection of federal money from other purposes or compromises on other national goals, which would require that spurring innovation be viewed by lawmakers as an important national priority.