



Unplugging Sequestration – the Future of Federal R&D Support

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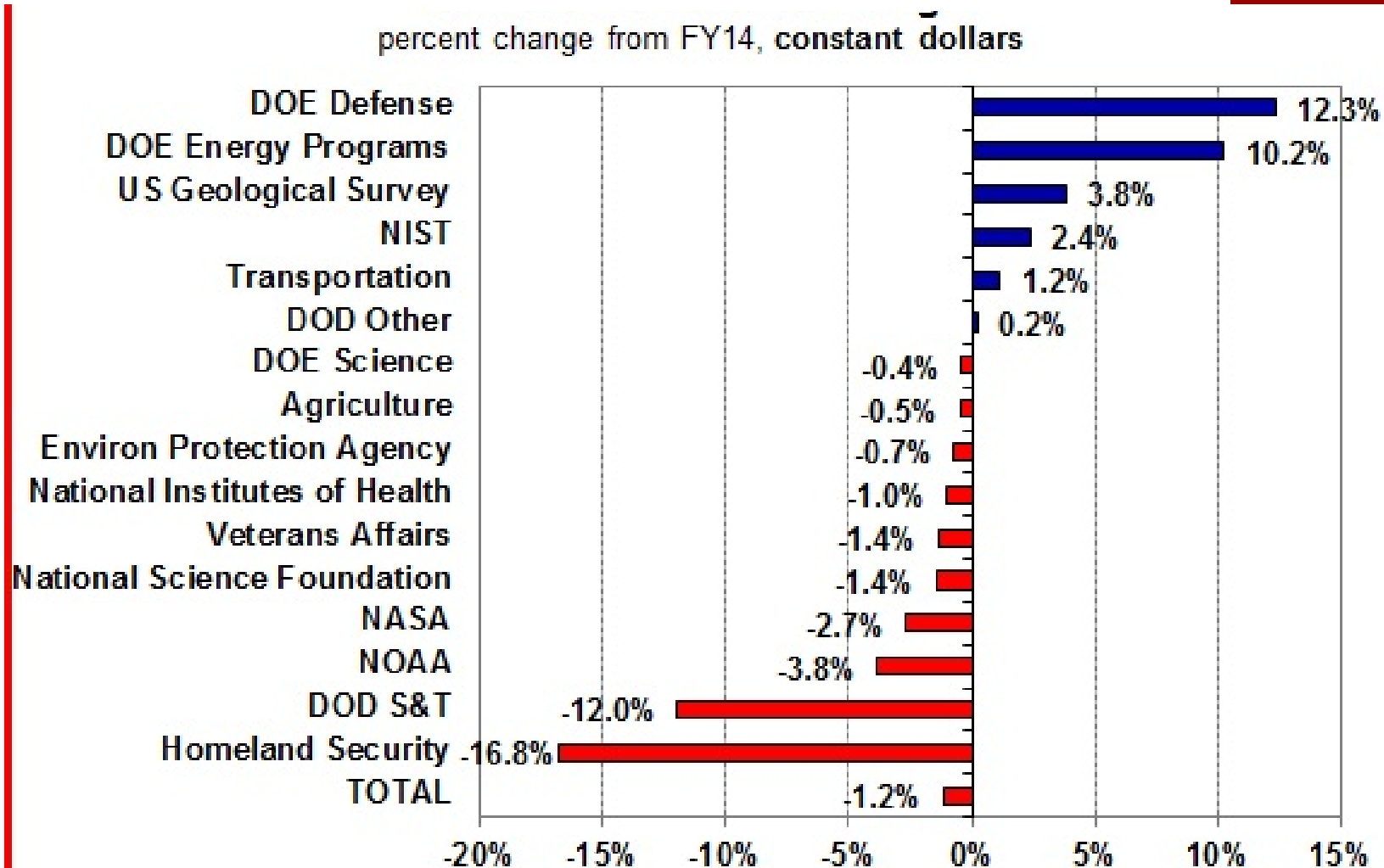
Massachusetts Institute of Technology

Topics:

- Overall federal R&D trends
- The “Sequestration” Challenge and the status of the federal budget and appropriations process
- The Budget Deficit backdrop for this problem – the shorter term look
- And the longer term underlying Budget Deficit problem
- The structural political problem
- Options for University responses

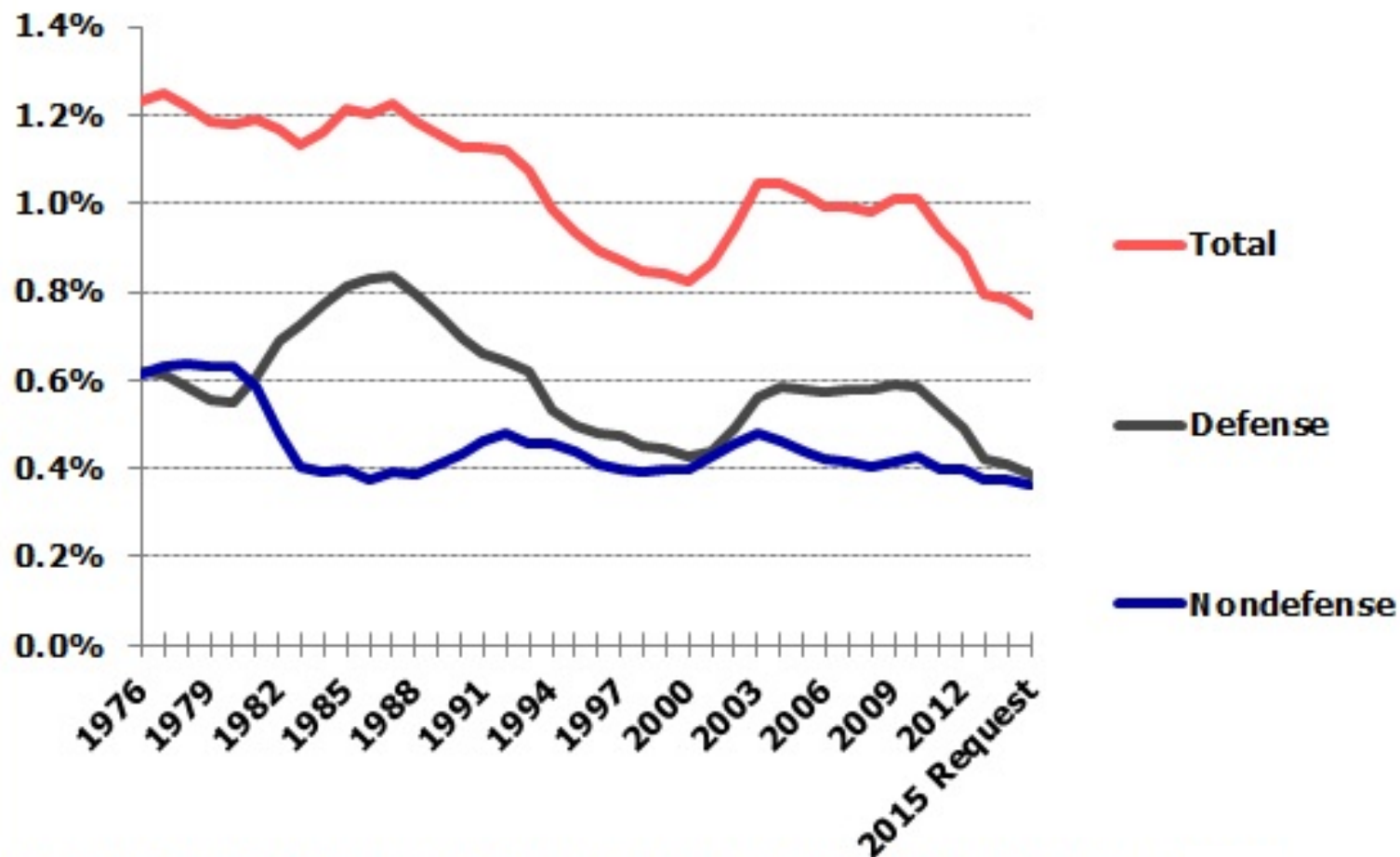
Topic: R&D Funding -- the FY15 President's Budget

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Source: AAAS analysis of the FY 2015 President's Budget.

Federal R&D as % of GDP



Source: Up to 1994: National Science Foundation, *Federal Funds for Research*

TOPIC: The Congressional Budget Process:

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Table 1 Federal Budget Process Timeline

Timeline	Action
First Monday in February	President submits budget to Congress
February 15	Congressional Budget Office submits report on economic and budget outlook to House and Senate Budget Committees
6 weeks after president submits budget	House and Senate committees submit their budget analyses to respective budget committees
April 1	Senate Budget Committee reports budget resolution
April 15	Congress completes action on budget resolution
May 15	House begins action on annual appropriations bills
June 10	House Appropriations Committee reports last appropriations bill
June 30	House completes action on appropriations bills
July 15	President submits midsession review of his budget to Congress
October 1	Fiscal year begins

Adapted with permission from the *Congressional Deskbook: The Practical and Comprehensive Guide to Congress*. 5th ed. Michael Koempel and Judy Schneider, eds. Copyright 2007 by the TheCapitol.Net. www.CongressionalDeskbook.com.

But – this process replaced by sequestration

Congress' Budget Deficit Legislation in 2011-12

- Budget Control Act (BCA): Congress in 2011 **cut \$1 Trillion** over 10 years from federal budget –
- Then Congress in BCA put into effect an additional \$1.2 cut over a decade
 - = *“Sequestration”*

Now we have Sequestration:

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- Automatic “sequestration” (ie, a cut) of \$1.2 Trillion – split evenly between defense and domestic spending –
- **\$500B cut from domestic discretionary**
- **\$500B cut from defense discretionary**
- The cuts in Jan. 2012 meant an 8.4% across the board Domestic Discretionary spending cut and a 9-10% Defense Discretionary spending cut.
- Cuts took effect on March 1, 2013 – affected FY13; then a **decade of cuts/stagnation from 2013-2023**

SO: Congress faces ongoing Appropriations, Sequestration Crisis...

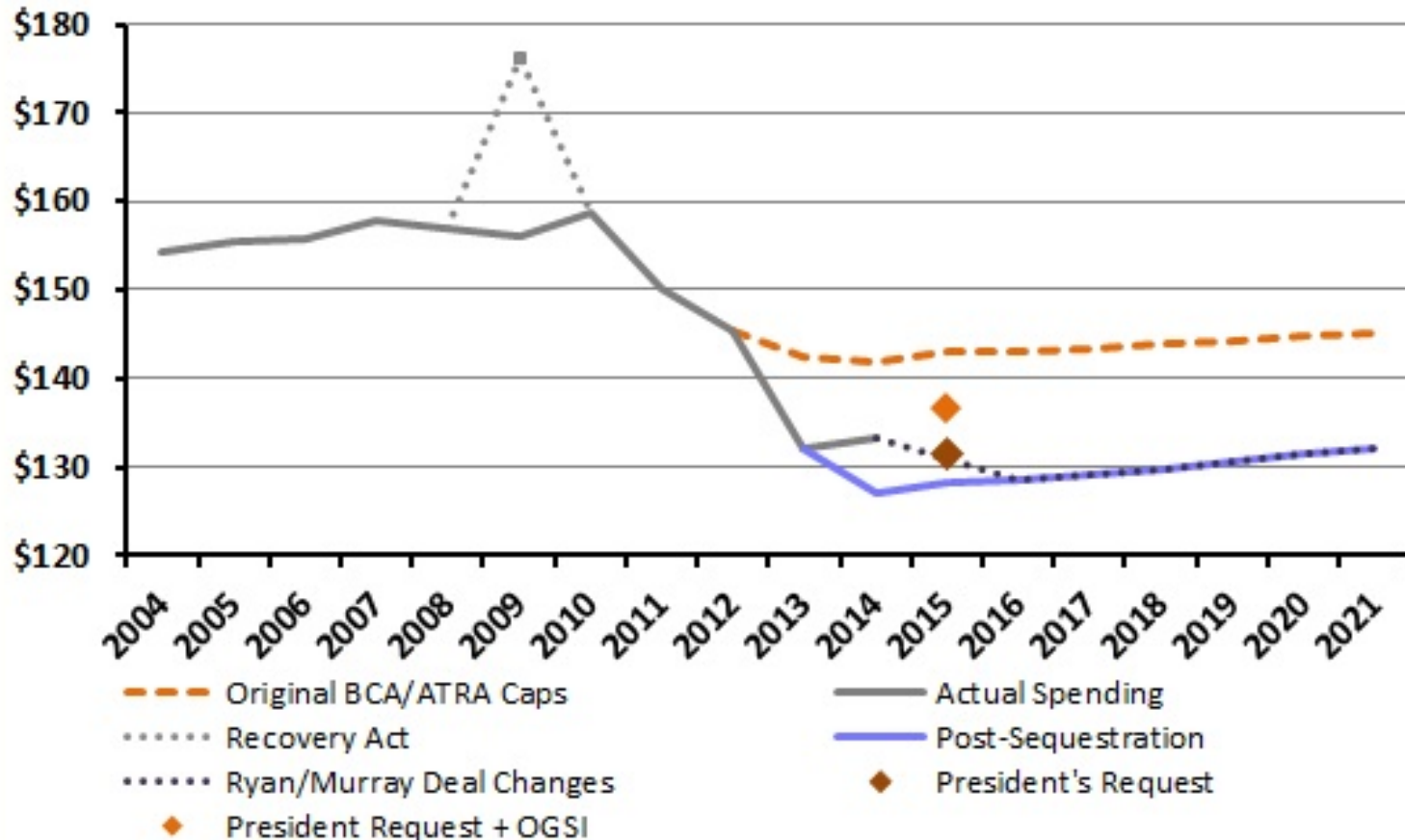
- **Sequestration automatically in effect** unless Congress changes the law – no action to date on repeal
- **Ryan Murray Budget Deal in 2013** – partial rollback of sequestration cuts for FY14-15
 - Congress actually did Appropriations bills for 2014
- **Then: back to sequestration** levels for FY16-23

Sequestration and R&D:

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Federal R&D Projections Under Various Scenarios

billions of constant 2014 dollars



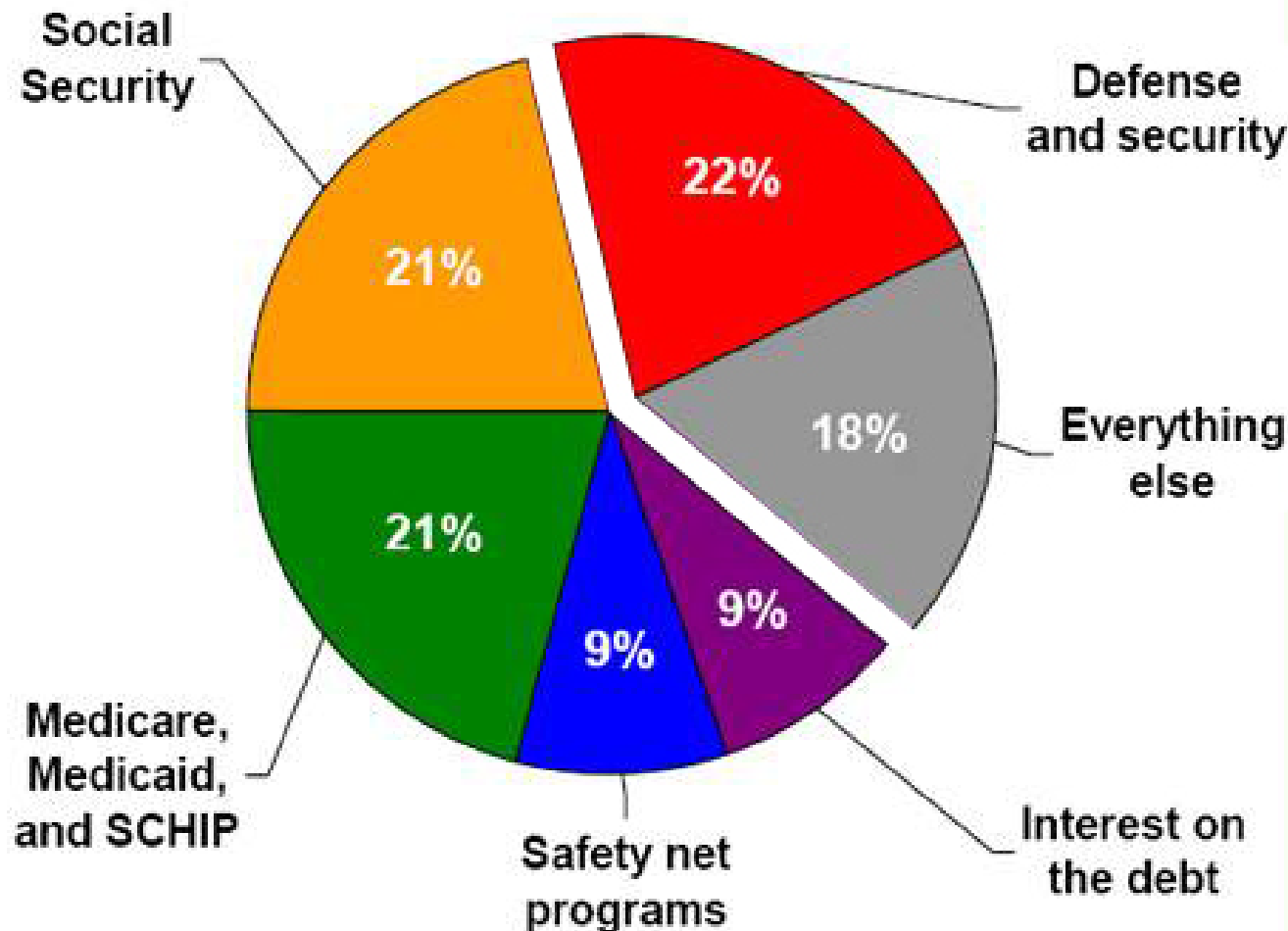
Source: AAAS analyses of past and current budgets and legislation. "OGSI" refers to the Opportunity, Growth and Security Initiative, which adds \$5.3 billion more to the R&D budget. Adjusted for inflation using deflators from the FY14 request. R&D includes conduct of R&D and R&D facilities. © AAAS 2014

Topic: Research faces a short-term budget problem under the above process,

and

Topic: a longer term budget problem.

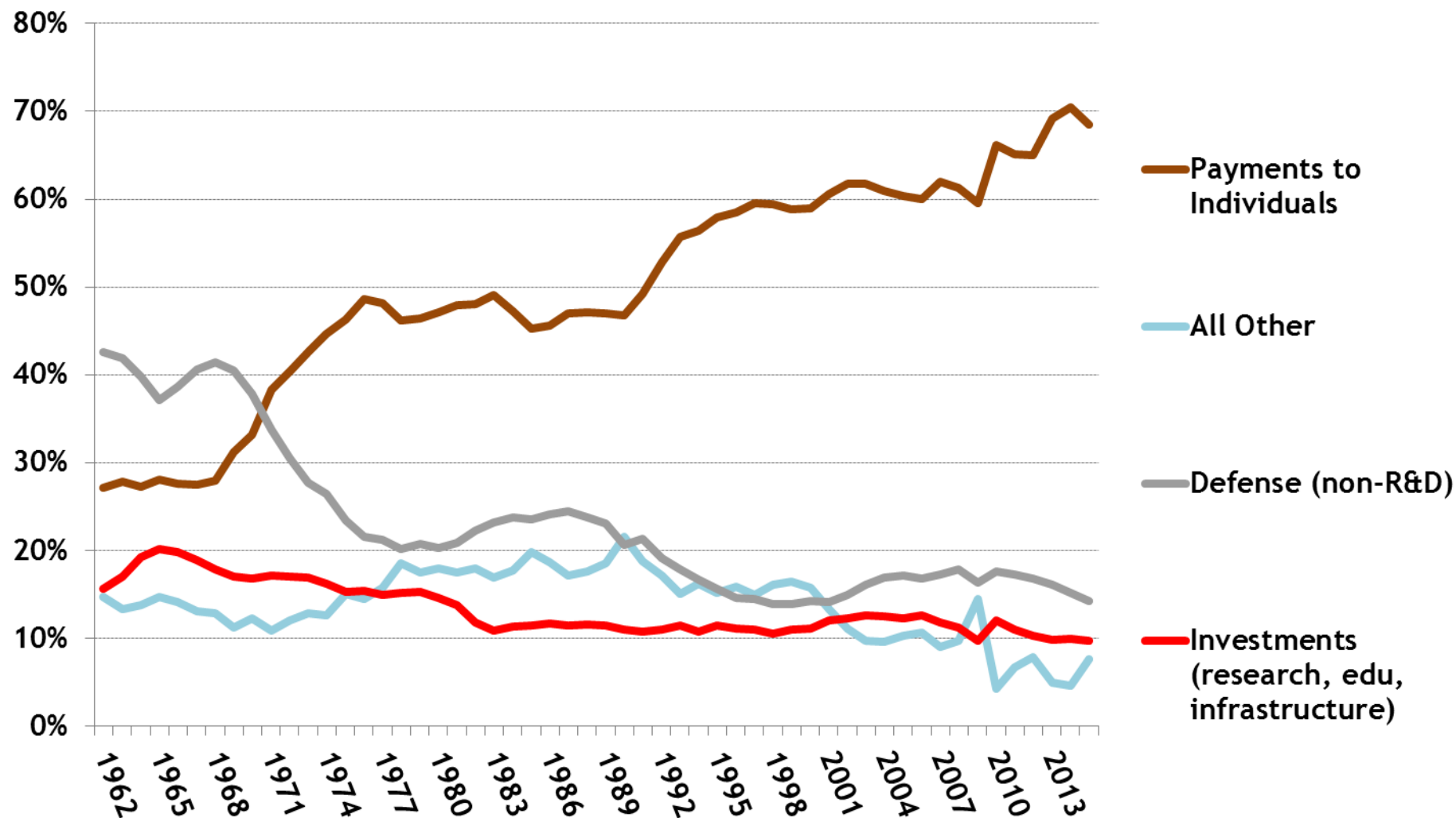
Most of Budget Goes Toward Defense, Social Security, and Major Health Programs



Source:
2011 OMB
Data

Composition of the Federal Budget

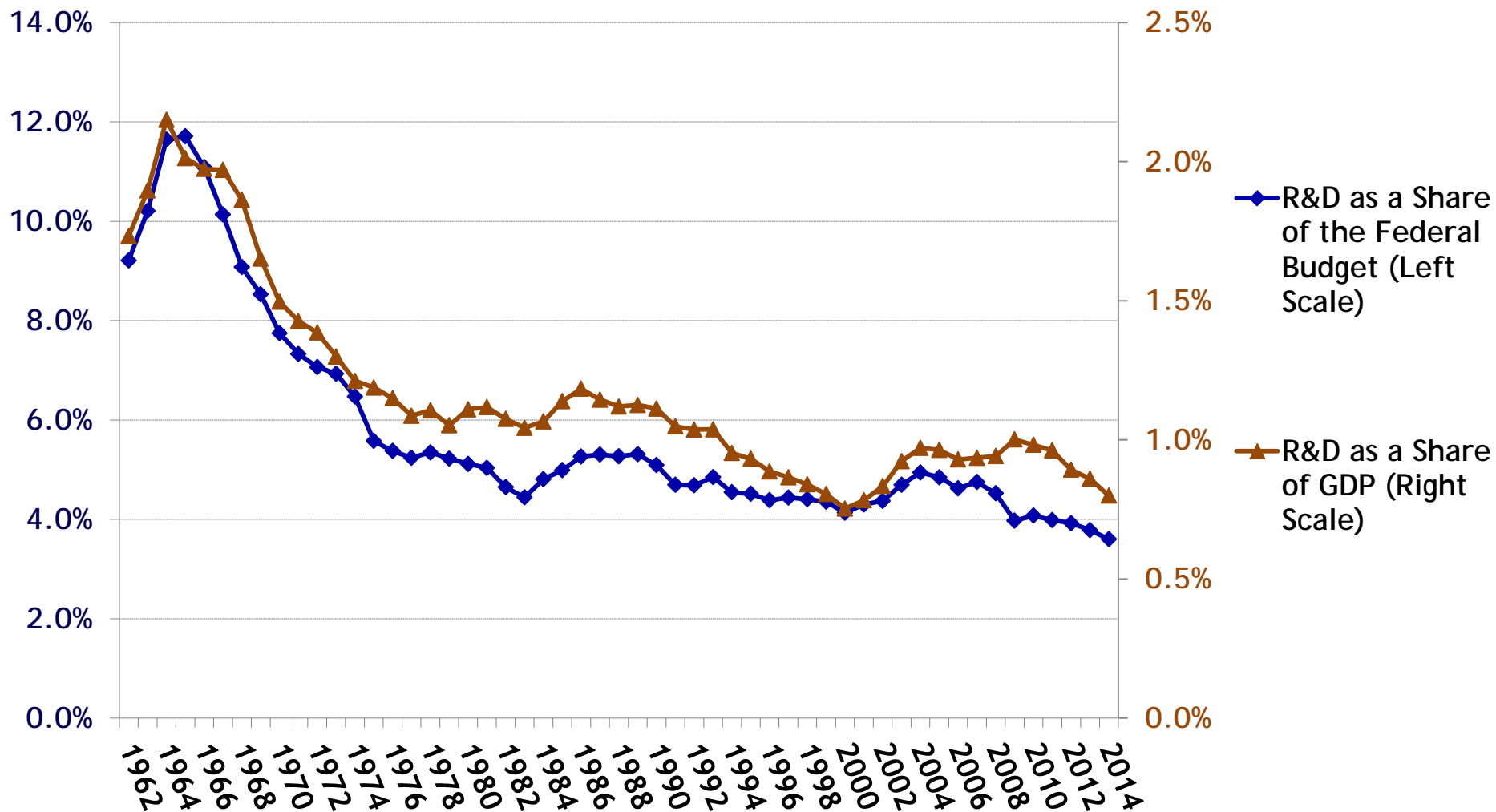
Outlays as share of total budget, 1962 - 2015



Source: *Budget of the United States Government, FY 2015*. "Investments" include outlays for R&D, education and training, direct nondefense infrastructure, and other grants, primarily for transportation. "Payments to Individuals" are primarily entitlement programs like Medicare, Medicaid, and Social Security, but also include many other public assistance programs. © 2014 AAAS

Federal R&D in the Budget and the Economy

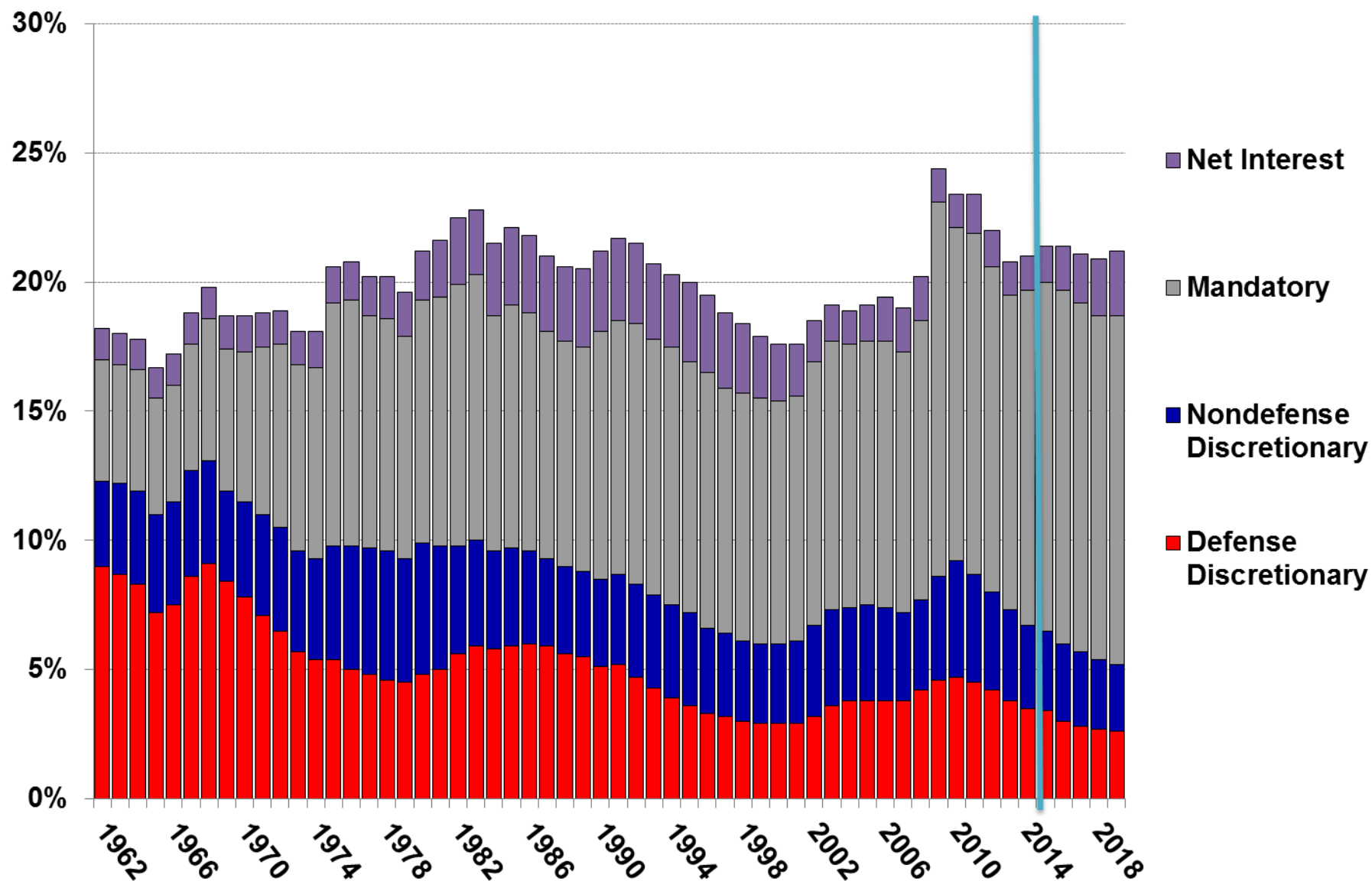
Outlays as share of total, 1962 - 2014



Source: *Budget of the United States Government, FY 2014*. FY 2013 data do not reflect sequestration. FY 2014 is the President's request.

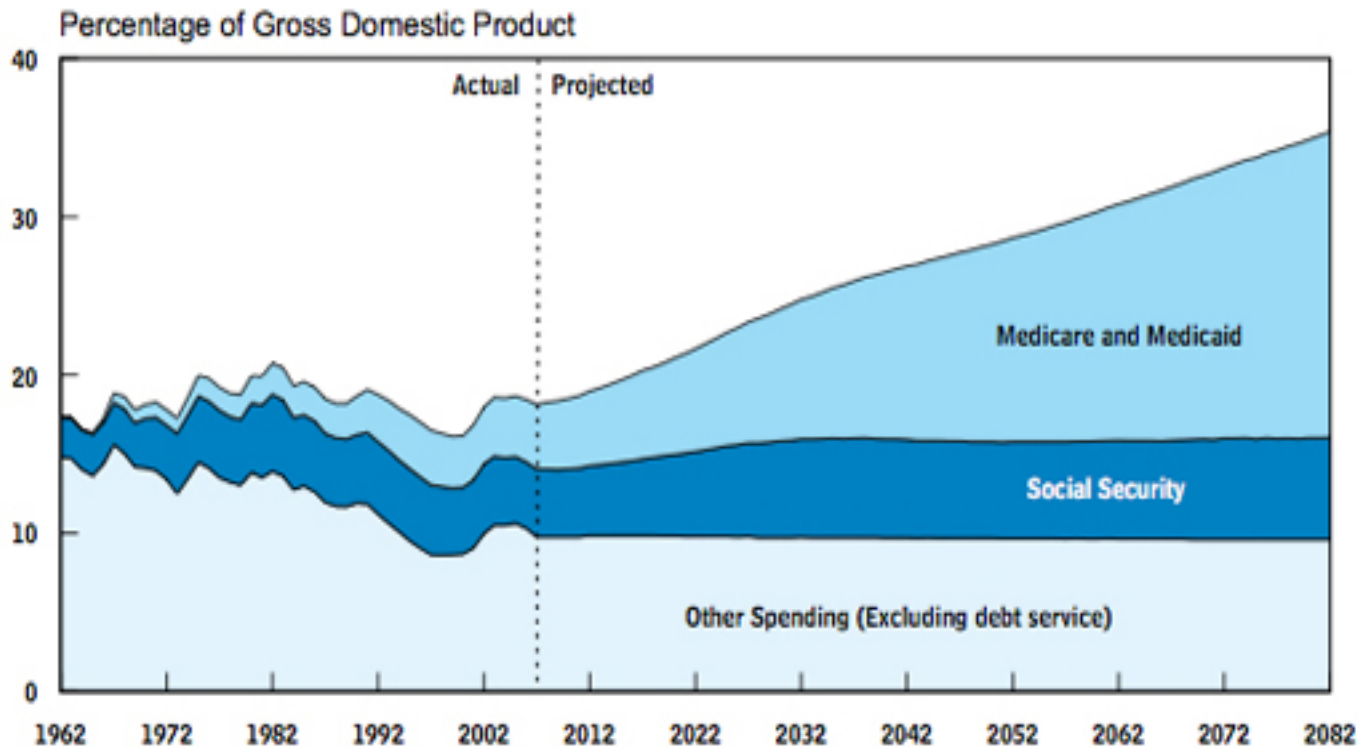
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Federal Spending as a Percent of GDP, 1962 - 2019



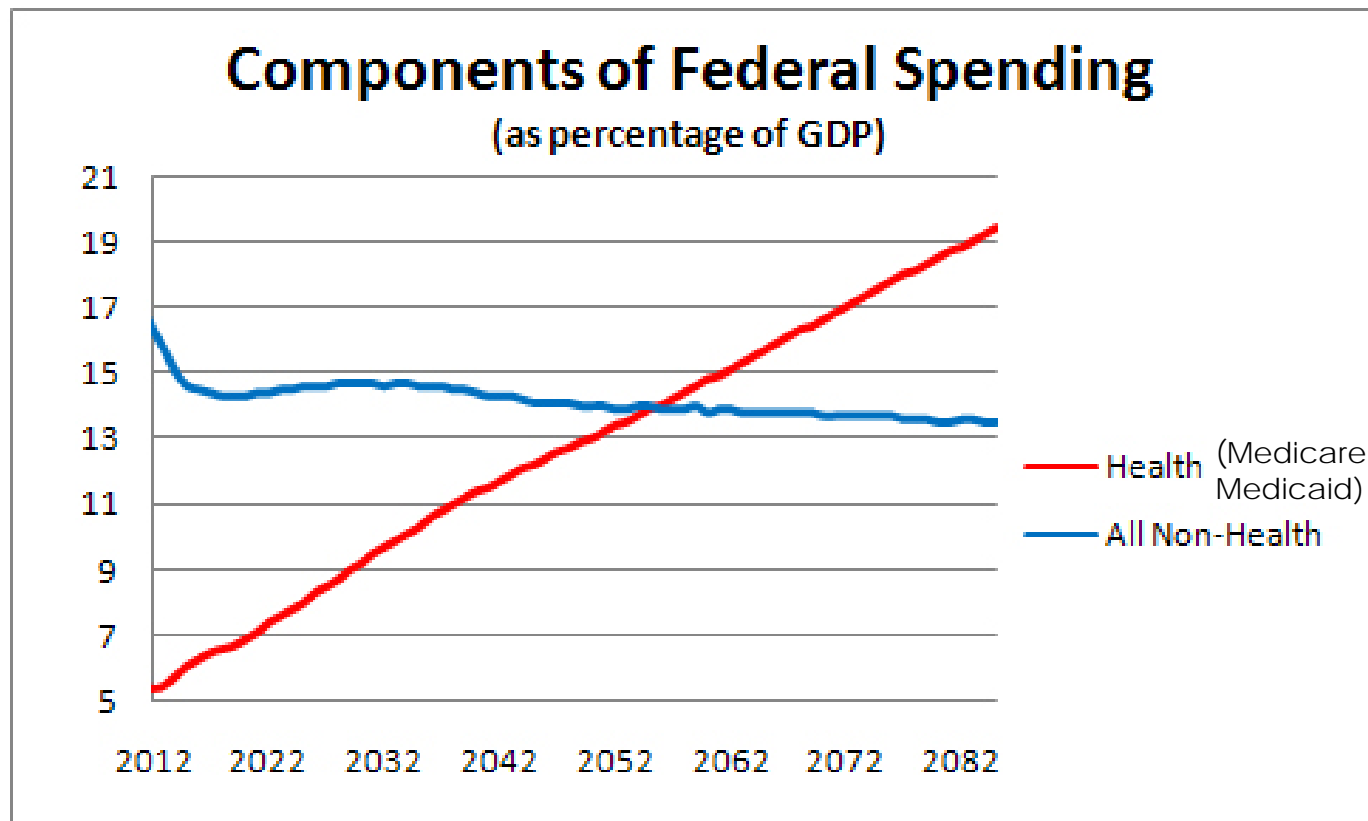
Topic: Projected Federal Spending Over the Longer Term – Role of Entitlements

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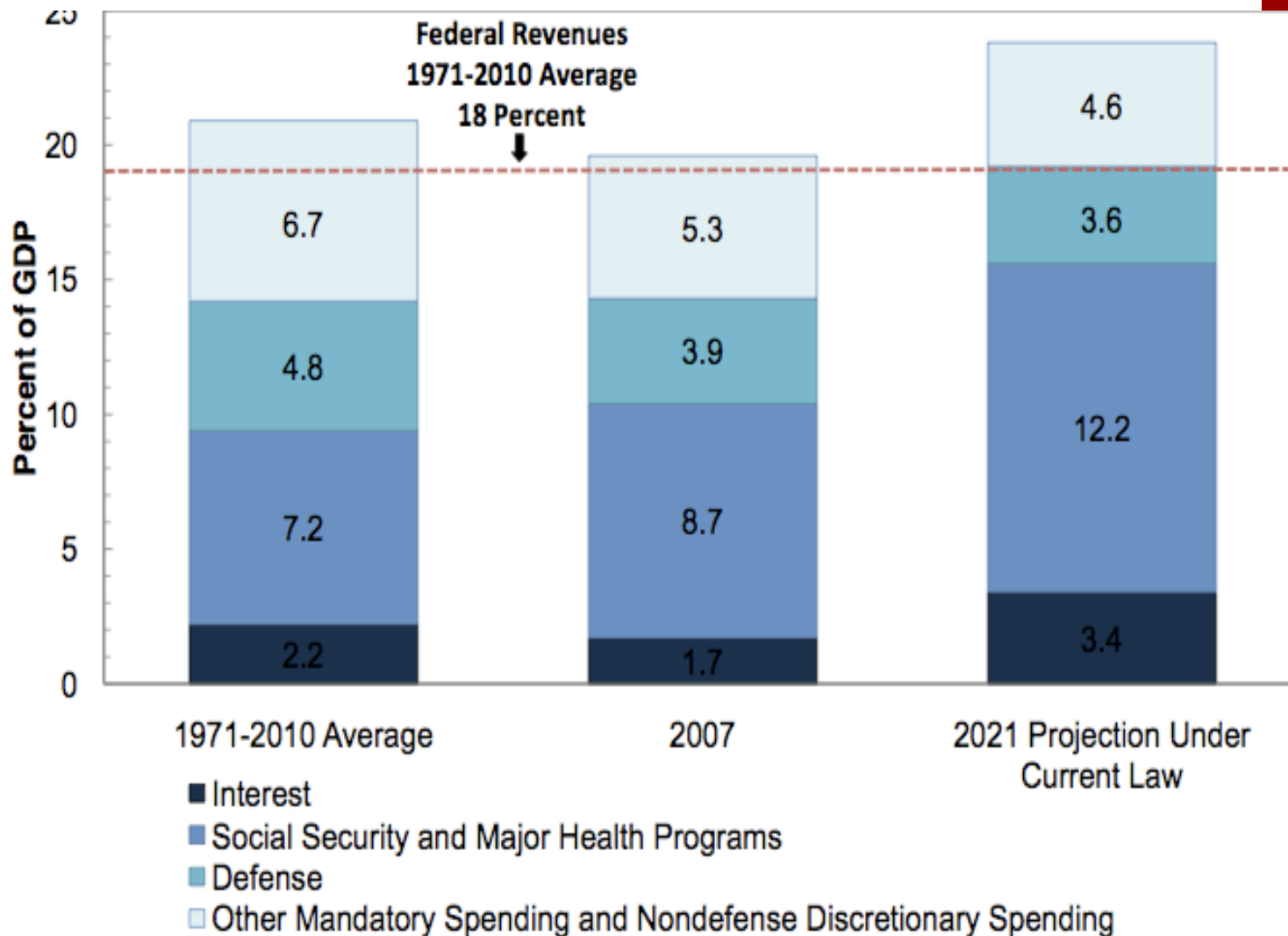
Longer Term: Dominance of Medicare/Medicaid as a Future Factor in Federal Spending

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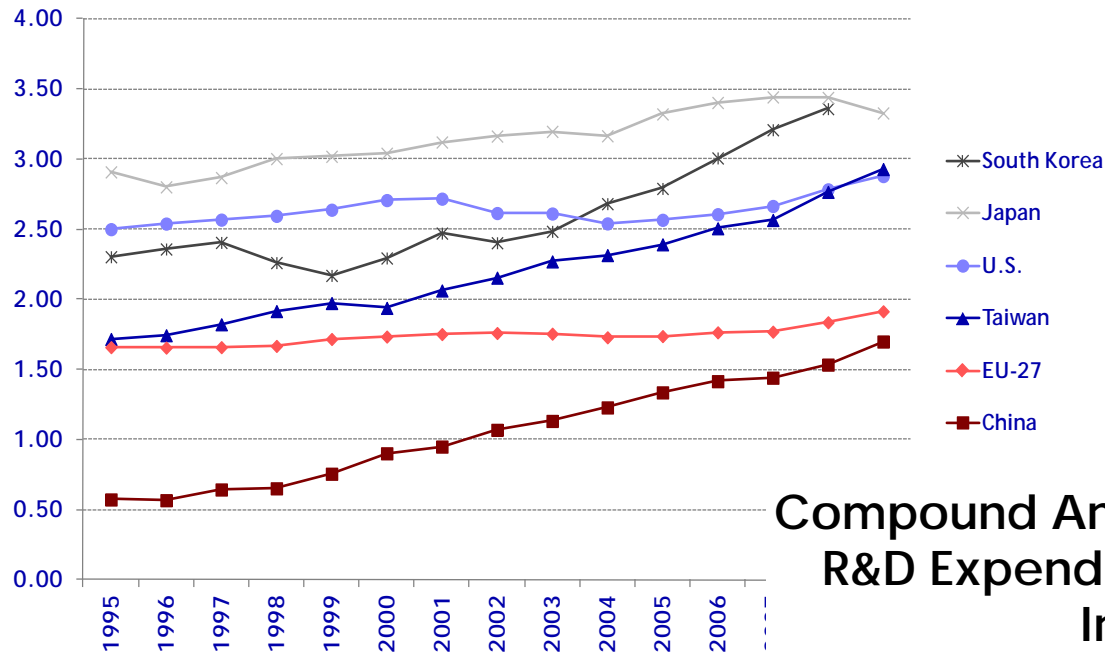
Longer Term - Elements of Federal Spending:

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National R&D Investment

percent of GDP

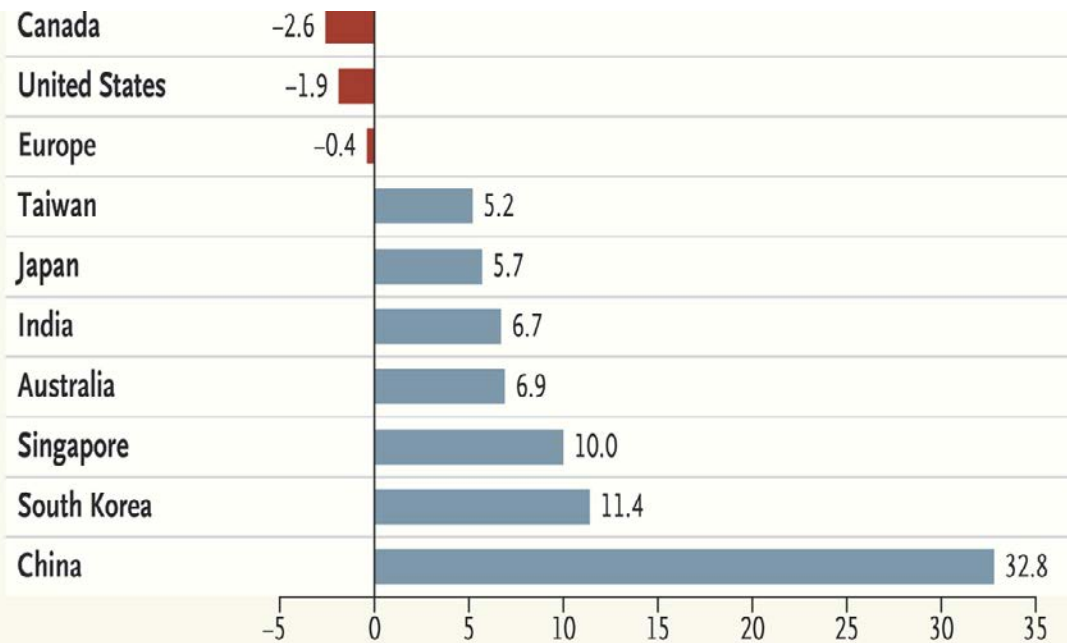


Source: OECD, Main Science and Technology Indicators, April 2011.
2009 data for South Korea is not yet available.

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Compound Annual Growth Rate of Biomedical R&D Expenditures by Country, Adjusted for Inflation, 2007–2012.



Sequestration
Cuts In a
Competitive
Context

So...

- Sequestration creates a **major short term challenge** for federal R&D support
- *BUT*: there is a **long-term budget problem**
 - And discretionary spending is the easiest target
 - Taxes and Entitlements have major political constituencies

Do we get out of this?

→ *Topic: Structural Problem with the Parties...*

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- Cost of campaign media: *Up*
- Party role in fundraising: *Up*
- Key to parties' fundraising – their ideological base
- Political Sci. techniques: can project outcomes of House districts
 - 90% of House races uncontested; only challenge is a primary
- Have to avoid confrontation with party ideological base to survive primaries because only base votes – true in House and Senate – 7 moderate/conservative R Senators faced primaries
- So: both parties more ideology-based – hard to compromise
- Budget deficit problem requires compromise

Topic: How can Universities respond re: Federal R&D support?

- Federal R&D levels set for FY14-15
- But Sequestration returns in FY16-23
- Re Congress and FY16 - Hard to do a budget in a Presidential election year
- Key timing: presidential candidates will declare in early 2015 and be developing positions

We will have to Make The Case

■ What did we get from R&D investments?

- ITIF Report, Feb. 2014 – the genealogy of research – tied major technology areas in the economy to research investments - <http://www2.itif.org/2014-federally-supported-innovations.pdf>
- Problems – we look forward not back; haven't had to make our case before; country doesn't understand its own innovation-based growth model

■ What Won't We Get? - if Sequestration continues -

- Example – dementia, Alz. exploding with aging demographics
 - BRAIN initiative – NIH Advis. Group: \$1.2B – we'll fund a fraction
 - Systematic look at other examples – compare to other nations?

Next steps?

■ **Democracy is not armchair but face-to-face**

- Industry can be allies– “Task Force for American Innovation” in DC – tech, bio-pharma, aerospace
- Univ. groups – AAU, AARP - work with industry groups in bringing message to campaigns
- University Presidents – work with regional economies on bringing public-private innovation collaboration message
- Enlist leading think tanks in making the case for the message – ITIF, for ex.

Longer Term:

- Educate students to be “citizen scientists”
- Alumni advocacy
- Engaging visibly with regional economies
 - governors as advocates – more practical
- University “policy initiatives” –
 - How to translate policy “give backs” so policymakers can see gains from research?
 - Can universities bring some policy “presents” back to the federal government that supports it?
 - Example – advanced manufacturing