An Introduction to the Federal Budget

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for the Mirzayan S&T Graduate Policy Fellows

AAAS R&D Budget and Policy Program
http://www.aaas.org/spp/rd

See the “What’s New” section for the latest updates; see the “Seminars and Presentations” section for copies of this presentation.
THE FEDERAL BUDGET: WHERE DOES THE MONEY GO? AND WHY SHOULD YOU CARE?

- It’s a lot of money.
  - The federal government spends $3.1 trillion a year, 1/5 of the U.S. economy.
  - More than 80 percent of the money comes directly from individuals through income taxes and payroll taxes.
- You can’t do POLICY in Washington without MONEY.
  - Money makes policies possible; without money, policies can’t be implemented.
  - In these times of budget deficits, every policy has to be considered in terms of how it affects the budget.
  - The federal budget process decides how the money gets spent.
THE FEDERAL BUDGET: WHERE DOES THE MONEY GO? AND WHY SHOULD YOU CARE? (2)

- The budget takes up a lot of time and effort on Capitol Hill and in federal agencies.
  - The budget has an annual cycle that affects nearly every decision in Washington.
- The federal budget determines the health of U.S. science and engineering education.
  - The federal government spends $140 billion + a year on R&D.
  - The federal government funds 60 percent of all university R&D, and also supports fellowships, scholarships, student loans, and other aid.
- R&D funding decisions are part of the federal budget process.
Composition of the Proposed FY 2009 Budget
Total Outlays = $3.1 trillion

Net interest
Defense discretionary
Other mandatory
Medicaid
Medicare
Social Security
Nondefense discretionary

[Defense R&D]
[Nondefense R&D]

Note: Projected Unified deficit is $407 billion.
Figures exclude most Iraq and Afghanistan military costs.
Source: AAAS, based on Budget of the United States Government FY  2009.
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Composition of the Proposed FY 2009 Budget by Source of Funds

Total Outlays = $3.1 trillion

- Income taxes
- Corporate taxes
- Social insurance and retirement (SS + Medicare payroll taxes)
- Other taxes (excise, gas, estate, etc.)
- Borrowing

Total Receipts (without borrowing): $2.7 trillion

Source: AAAS, based on Budget of the United States Government FY 2009.
Trends in Federal Outlays, FY 1976-2013

in billions of constant FY 2008 dollars


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Trends in Federal Receipts, FY 1976-2013
in billions of constant FY 2008 dollars


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Federal Budget Deficit (or Surplus), FY 1960-2013
in billions of CONSTANT FY 2008 dollars

Data in fiscal years. Source: Budget of the United States Government, FY 2009. FY 2008 data are estimates. FY 2009-2013 data are President's budget proposals. FY 2009 - 2013 figures exclude Iraq and Afghanistan military costs.

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U.S. 2008 budget deficit at record $455 billion

The Associated Press  
Tuesday, October 14, 2008

WASHINGTON: The U.S. federal budget deficit soared to $454.8 billion in 2008 as a housing collapse and efforts to combat the economic slowdown pushed the tide of government spending to the highest level in history.

The administration of President George W. Bush said Tuesday the deficit for the budget year that ended Sept. 30 was more than double the $161.5 billion recorded in 2007.

It surpassed the previous record of $413 billion set in 2004.

Economists predicted a far worse number next year as the costs of the government's rescue of the financial system and the economic hard times hit the government's balance sheet.

Some analysts believe that next year's deficit could easily top $700 billion, giving the next president a formidable challenge.

The administration blamed this year's record deficit on a litany of economic woes. The prolonged housing slump sharply reduced economic growth and has sent the unemployment rate rising, developments that reduce tax revenues.

"This year's budget results reflect the ongoing housing correction and the manifestation of that in strained capital markets and slower growth," Treasury Secretary Henry Paulson Jr. said in a statement accompanying the deficit report. "While it will take time to work through this period, we will overcome the current challenges facing our nation."

The credit crisis that has swamped the financial system is increasing spending because of the costs of protecting the depositors of failed banks.

Those costs will increase significantly in coming years. The government faces the prospects of paying for the $700 billion rescue plan that will bolster spending as the government spends $250 billion in coming months to buy stock from banks to prop up their balance sheets and buys up bad assets currently on banks' books.

Both of those programs are aimed at relieving strains on banks so they can resume more normal lending and ease a credit crisis that is threatening to push the country into a severe recession.

Many private economists think the country will not be able to escape a recession even if the rescue program is successful at getting banks to resume lending.

The Bush administration is projecting that the deficit in the current budget year will rise to $482 billion,
The National Debt, 1960-2013
in billions of dollars (President's proposals)

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(3) Any reports required under this section shall also be submitted to the Congressional Oversight Panel established under section 125.

(g) FUNDING.—(1) Of the amounts made available to the Secretary of the Treasury under section 118, $50,000,000 shall be available to the Special Inspector General to carry out this section.

(2) The amount available under paragraph (1) shall remain available until expended.

(h) TERMINATION.—The Office of the Special Inspector General shall terminate on the later of—

(1) the date that the last troubled asset acquired by the Secretary under section 101 has been sold or transferred out of the ownership or control of the Federal Government; or

(2) the date of expiration of the last insurance contract issued under section 102.

SEC. 122. INCREASE IN STATUTORY LIMIT ON THE PUBLIC DEBT.

Subsection (b) of section 3101 of title 31, United States Code, is amended by striking out the dollar limitation contained in such subsection and inserting “$11,315,000,000,000”.
How the Budget Becomes Law
FY 2009 Proposal = $3.1 Trillion

Net interest - automatic

Discretionary Spending - 12 appropriations bills, plus war supplemental bill(s) from Appropriations Committees

Entitlements - Reconciliation bill, other bills from various committees (such as Medicare drug bill) (optional)

Revenues - Reconciliation bill, other bills from various committees (such as the energy bill) (optional)

Source: AAAS, based on Budget of the United States Government FY 2009.
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THE FY 2009 BUDGET PROCESS (1)

SUMMER 2007 – Agencies submit their FY 2009 proposals to OMB (Office of Management and Budget) based on broad strategic guidance from OMB in spring 2007.

FALL 2007 – Agencies negotiate with OMB over their FY 2009 proposals.

January 2008 – Agencies finalize their requests.

February 2008 – President Bush releases his proposed FY 2009 budget and transmits it to Congress.
THE FY 2009 BUDGET PROCESS (2)

Feb. – May 2008 – Agency officials, public witnesses, and others testify at congressional budget and oversight hearings; authorizing committees try to write and pass authorization bills.

Spring 2008 – Congress approves its FY 2009 budget resolution.

Various committees receive instructions from the budget resolution to draft reconciliation bills.

Appropriations committees receive 302(a) allocations: total $1.013 trillion, $21 billion more than the President’s budget.

Appropriations committees determine 302(b) allocations dividing total discretionary spending among 12 bills.

Some entitlement programs need to be reauthorized: in June, Congress completed action on a 5-year farm bill.
Trends in Discretionary Spending, FY 1976-2013
in billions of constant FY 2008 dollars

FY 2008 data are estimates. FY 2009-2013 data are budget projections. FY
2009-2013 figures exclude Iraq and Afghanistan military costs.
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Discretionary Spending by Appropriations Bill
FY 2009 Request = $992 billion

Source: Congressional Budget Office. Excludes bridge fund for Iraq and Afghanistan military operations.
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THE FY 2009 BUDGET PROCESS (3)

Summer 2008 – Appropriations subcommittees write appropriations bills. The full committees try to get the bills through the legislative process.

September 2008 – The House and Senate try to conference appropriations bills and send them to the President.

October 1, 2008 – FY 2009 begins. Discretionary programs must have a signed appropriations bill, or shut down. To allow more time, lawmakers pass continuing resolutions (CR’s). (For FY 2008, 4 CR’s were needed. The current CR extends to March 6, also contains final versions of 3 bills.)

Feb. – March 2009 (?) – Congress will probably pass an omnibus appropriations bill. (For FY 2008, an 11-bill omnibus was enacted Dec. 26. A 9-bill omnibus for FY 2009?)
## R&D Budget and Policy Program

### Current Status of FY 2009 Appropriations

<table>
<thead>
<tr>
<th>Name of bill (Bill number)</th>
<th>Major R&amp;D agencies</th>
<th>House Action</th>
<th>Senate Action</th>
<th>Conference report</th>
<th>President signed (Public Law #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Labor, HHS, Education (S 3230)</td>
<td>NIH, Education</td>
<td>* 6/26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Agriculture (S 3289)</td>
<td>USDA</td>
<td></td>
<td>* 7/21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Interior and Env.</td>
<td>Interior, EPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Transportation &amp; HUD (S 3261)</td>
<td>DOT</td>
<td>* 7/10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. State &amp; Foreign Operations (S 3288)</td>
<td>AID</td>
<td></td>
<td>* 7/18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Financial Services (S 3200)</td>
<td>- -</td>
<td>* 6/25</td>
<td>* 7/10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Legislative Branch</td>
<td>- -</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: The President signed into law a continuing resolution (CR; HR 2638; Public Law 110-329) extending funding for all programs in unsigned 2009 appropriations bills at 2008 funding levels through March 6, 2009.


To find the text of these bills, go to THOMAS (Library of Congress) and type the bill number into the search engine at the top of the page.
A DETOUR: SUPPLEMENTAL APPROPRIATIONS

Anytime – For unbudgeted needs, Congress and the President can pass supplemental appropriations bills outside the regular budget cycle in a compressed process. Usually for natural disasters and other emergencies, but in recent years Iraq and Afghanistan spending as well.

June 2008 –$187 billion FY 2008 supplemental bill, mostly for war operations.

Often, this spending is designated as ‘emergency’ spending, meaning it doesn’t count against budget resolution targets. Congress may draft a 2009 supplemental bill this week for economic stimulus.
Total R&D by Agency: FY 2009 Proposed
Budget Authority in billions of dollars

- DOD, $80.7
- HHS (NIH), $30.0
- NASA, $12.8
- DOE, $10.5
- All Other, $5.2
- USDA, $2.0
- NSF, $5.2
- DHS, $1.0

Total R&D = $147.4 billion (revised)

Source: AAAS, based on OMB R&D Budget Data and agency estimates for FY 2009.
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## Table 1. Total R&D by Agency

Congressional Action on R&D in the FY 2009 Budget (as of September 30, 2008)  
(budget authority in millions of dollars)

<table>
<thead>
<tr>
<th>Agency</th>
<th>FY 2008 Estimate</th>
<th>FY 2009 Request</th>
<th>FY 2009 Congress</th>
<th>Chg. from Request Chg. from FY 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FY 2008</td>
<td>FY 2009</td>
<td>Amount</td>
<td>Percent</td>
</tr>
<tr>
<td>Defense (military) *</td>
<td>79,347</td>
<td>81,067</td>
<td>82,379</td>
<td>1.6% 3,032</td>
</tr>
<tr>
<td>(&quot;S&amp;T&quot; 6.1,6.2,6.3 + Medical) *</td>
<td>13,456</td>
<td>16,970</td>
<td>14,338</td>
<td>22.9% 882</td>
</tr>
<tr>
<td>(All Other DOD R&amp;D) *</td>
<td>65,891</td>
<td>69,398</td>
<td>68,040</td>
<td>-2.0% 2,149</td>
</tr>
<tr>
<td>National Aeronautics &amp; Space Admin.</td>
<td>12,251</td>
<td>12,780</td>
<td>12,188</td>
<td>-0.5% -63</td>
</tr>
<tr>
<td>Energy</td>
<td>9,724</td>
<td>10,519</td>
<td>9,661</td>
<td>-8.2% -63</td>
</tr>
<tr>
<td>(Office of Science)</td>
<td>3,637</td>
<td>4,314</td>
<td>3,574</td>
<td>-17.1% -63</td>
</tr>
<tr>
<td>(Energy R&amp;D)</td>
<td>2,369</td>
<td>2,380</td>
<td>2,369</td>
<td>-0.5% 0</td>
</tr>
<tr>
<td>(Atomic Energy Defense R&amp;D)</td>
<td>3,718</td>
<td>3,825</td>
<td>3,718</td>
<td>-2.8% 0</td>
</tr>
<tr>
<td>Health and Human Services</td>
<td>29,966</td>
<td>29,973</td>
<td>28,816</td>
<td>-0.5% -150</td>
</tr>
<tr>
<td>(National Institutes of Health)</td>
<td>28,826</td>
<td>28,666</td>
<td>28,676</td>
<td>0.0% -150</td>
</tr>
<tr>
<td>(All Other HHS R&amp;D)</td>
<td>1,140</td>
<td>1,307</td>
<td>1,140</td>
<td>-12.8% -150</td>
</tr>
<tr>
<td>National Science Foundation</td>
<td>4,501</td>
<td>5,175</td>
<td>4,479</td>
<td>-13.5% -23</td>
</tr>
<tr>
<td>Agriculture</td>
<td>2,359</td>
<td>1,955</td>
<td>2,412</td>
<td>23.4% 53</td>
</tr>
<tr>
<td>Homeland Security *</td>
<td>992</td>
<td>1,033</td>
<td>1,085</td>
<td>5.0% 93</td>
</tr>
<tr>
<td>Interior</td>
<td>676</td>
<td>618</td>
<td>676</td>
<td>9.5% 0</td>
</tr>
<tr>
<td>(U.S. Geological Survey)</td>
<td>586</td>
<td>546</td>
<td>586</td>
<td>7.5% 0</td>
</tr>
<tr>
<td>Transportation</td>
<td>820</td>
<td>902</td>
<td>820</td>
<td>-9.0% 0</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>548</td>
<td>541</td>
<td>548</td>
<td>1.3% 0</td>
</tr>
<tr>
<td>Commerce</td>
<td>1,138</td>
<td>1,152</td>
<td>1,138</td>
<td>-1.2% 0</td>
</tr>
<tr>
<td>(NOAA)</td>
<td>581</td>
<td>576</td>
<td>581</td>
<td>0.9% 0</td>
</tr>
<tr>
<td>(NIST)</td>
<td>521</td>
<td>546</td>
<td>521</td>
<td>-4.5% 0</td>
</tr>
<tr>
<td>Education</td>
<td>321</td>
<td>324</td>
<td>321</td>
<td>-0.9% 0</td>
</tr>
<tr>
<td>Agency for Int'l Development</td>
<td>223</td>
<td>223</td>
<td>223</td>
<td>0.0% 0</td>
</tr>
<tr>
<td>Department of Veterans Affairs *</td>
<td>891</td>
<td>884</td>
<td>952</td>
<td>7.7% 61</td>
</tr>
<tr>
<td>Nuclear Regulatory Commission</td>
<td>71</td>
<td>77</td>
<td>71</td>
<td>7.8% 61</td>
</tr>
<tr>
<td>Smithsonian</td>
<td>203</td>
<td>222</td>
<td>203</td>
<td>-8.6% 0</td>
</tr>
<tr>
<td>All Other</td>
<td>322</td>
<td>299</td>
<td>322</td>
<td>7.7% 0</td>
</tr>
<tr>
<td>TOTAL R&amp;D *</td>
<td>144,354</td>
<td>147,743</td>
<td>147,295</td>
<td>-0.3% 2,941</td>
</tr>
</tbody>
</table>

**Defense R&D *:** 83,065 84,892 86,097 1,204 1.4% 3,032 3.6%

**Nondefense R&D *:** 61,288 62,851 61,198 -1,653 -2.6% -91 -0.1%

**Basic Research *:** 28,837 29,656 28,952 -704 -2.4% 115 0.4%

**Applied Research *:** 29,151 27,626 28,281 1,655 6.0% 130 0.4%

**Total Research *:** 57,988 57,282 58,233 951 1.7% 244 0.4%

**Development *:** 81,890 85,745 84,605 -1,140 -1.3% 2,716 3.3%

**R&D Facilities and Capital Equipment *:** 4,476 4,716 4,457 -260 -5.5% -19 -0.4%

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AAAS estimates of R&D in FY 2009 appropriations bills. Includes conduct of R&D and R&D facilities.  
All figures are rounded to the nearest million. Changes calculated from unrounded figures.  
FY 2008 figures have been adjusted to reflect supplementals enacted in Public Law 110-252 and contained in the FY 2009 CR.  
These figures have been revised since the publication of AAAS Report XXXIII: R&D FY 2009.  
* - Only DOD, DHS, and VA receive their final FY 2009 appropriations in the FY 2009 continuing resolution (HR 2638).  
All other agencies are temporarily funded at FY 2008 funding levels (excluding supplementals) through March 6.  
September 30, 2008 - AAAS estimates of FY 2009 appropriations.
Trends in Federal R&D, FY 1976-2009 (as of 9/08) *
in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports. * FY 2009 figures are AAAS estimates of R&D in the FY 2009 omnibus / continuing resolution. R&D includes conduct of R&D and R&D facilities. Data to 1984 are obligations from the NSF Federal Funds survey. GDP figures are from OMB, Budget of the U.S. Government FY 2009.
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Trends in Research by Agency, FY 1976-2009 (as of 9/08) *
in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports.
* FY 2009 figures are AAAS estimates of R&D in the FY 2009 omnibus / continuing resolution. Research includes basic research and applied research. 1976-1994 figures are NSF data on obligations in the Federal Funds survey.
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WHERE IS FEDERAL R&D FUNDING HEADED?

- The new Congress and President Obama could finish FY 2009 appropriations with increased funding for key R&D programs, and could split funding between the economic stimulus bill and an omnibus appropriations bill.

- The FY 2010 budget proposal will be released in April; it will be the first budget to be formulated under current economic conditions.

- Even at a time when policymakers are concerned about U.S. leadership in science and technology eroding, and when proposed R&D increases are authorized in the America COMPETES Act and other legislation, the problem is how to find the resources in a recession. New sources of revenue (such as from climate change legislation for energy R&D) may be years away.

- Don’t expect increased funding for research: the broader budget choices policymakers make will constrain future investments in R&D.
FOR MORE INFORMATION…

The AAAS R&D web site is

www.aaas.org/spp/rd

The AAAS Forum on Science and Technology Policy is 30 April – 1 May 2009 in Washington, DC