



# **Federal Research and Development Contract Trends and the Supporting Industrial Base, 2000-2015**

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**May 4, 2016**

**CSIS**

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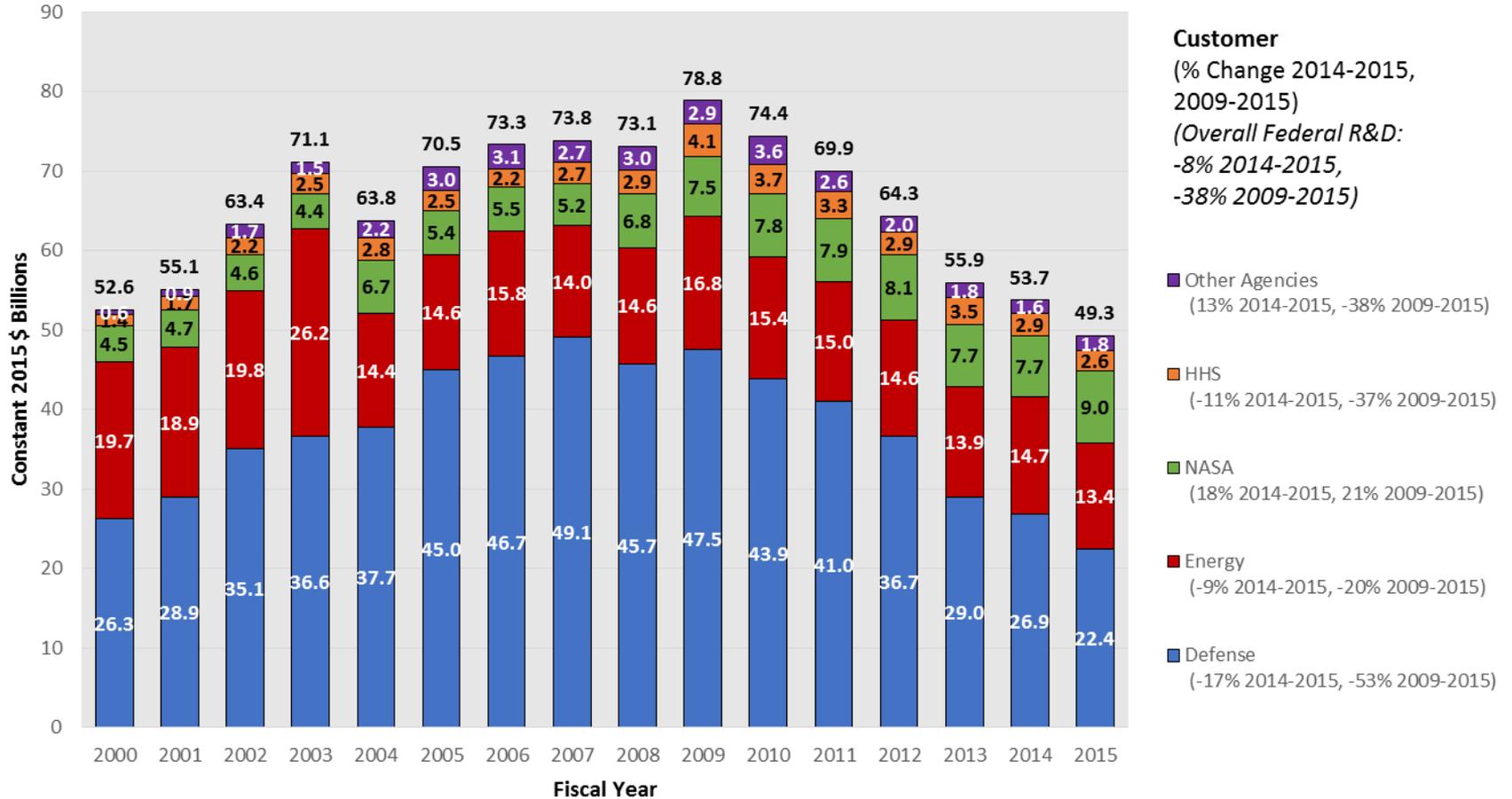
DEFENSE-INDUSTRIAL  
INITIATIVES GROUP



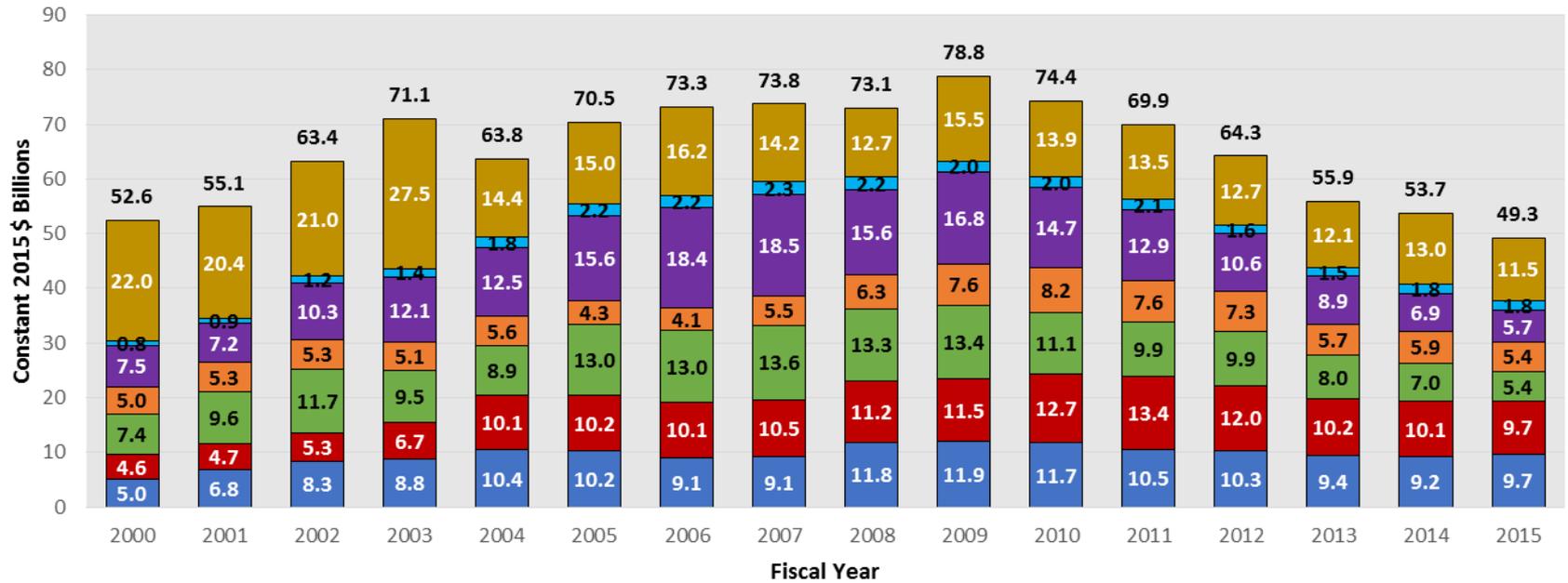
## Methodology

- The Federal Procurement Data System (FPDS) was the primary source for contract data used in this analysis.
- Federal regulations require only that all unclassified prime contracts worth \$3,000 and above be reported to FPDS.
- FPDS data are constantly being updated, including those for back years. As a consequence, the dollar totals for a given year may have changed since the data was downloaded.
- All dollar figures are in constant 2015 dollars.

# Overall Federal R&D Declines by Nearly Two-Fifths Since 2009



# Impact of Budget Drawdown Varies Between Stages of R&D



**Stage of R&D**

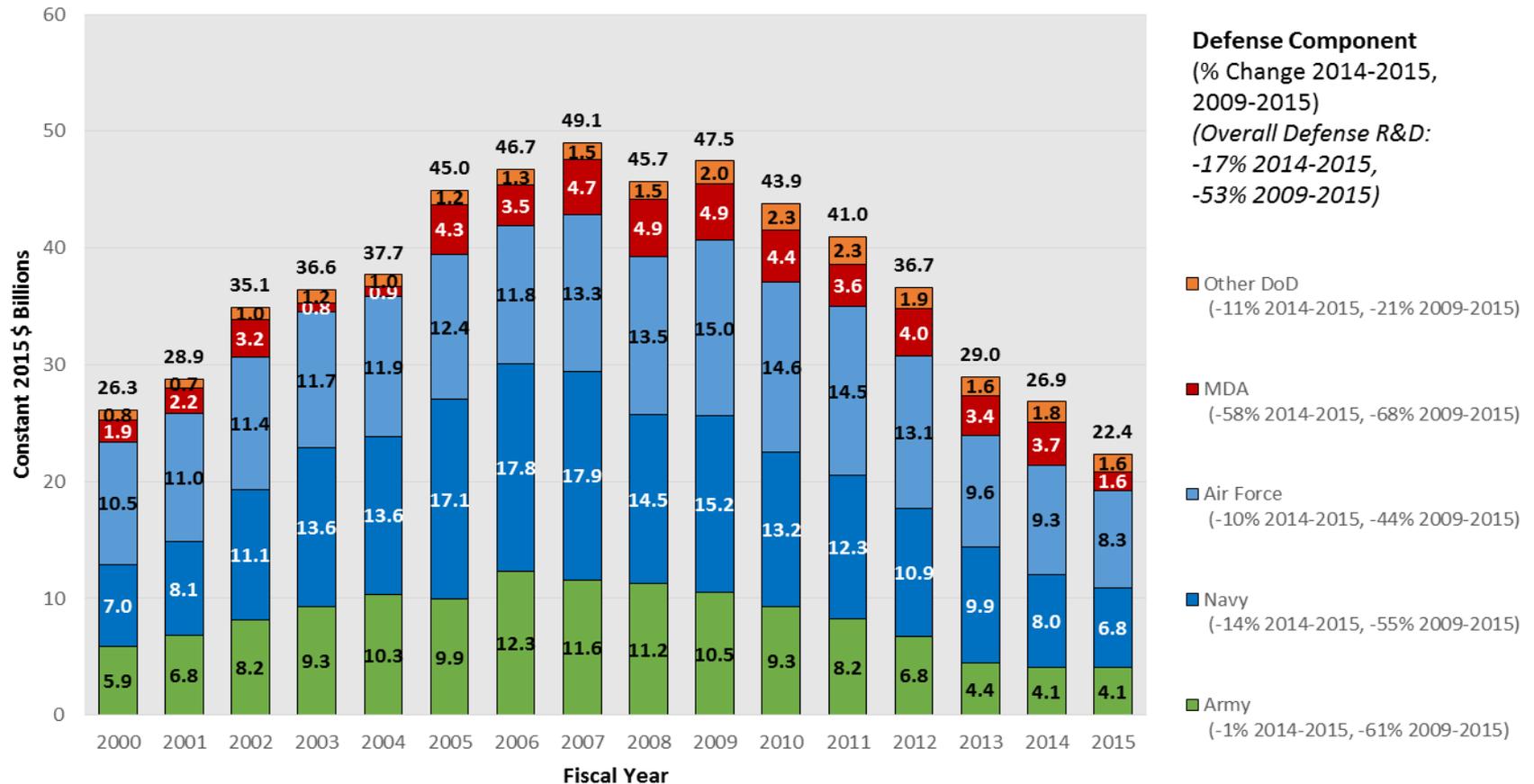
(% Change 2014-2015, 2009-2015)

(Overall Federal R&D:

-8% 2014-2015, -38% 2009-2015)

- Basic Research (6.1)  
(5% 2014-2015, -19% 2009-2015)
- Applied Research (6.2)  
(-4% 2014-2015, -16% 2009-2015)
- Advanced Technology Development (6.3)  
(-23% 2014-2015, -59% 2009-2015)
- Advanced Component Development & Prototypes (6.4)  
(-7% 2014-2015, -29% 2009-2015)
- System Development & Demonstration (6.5)  
(-16% 2014-2015, -66% 2009-2015)
- Operational Systems Development (6.7)  
(5% 2014-2015, -9% 2009-2015)
- Operation of Government R&D Facilities  
(-12% 2014-2015, -26% 2009-2015)

# Defense R&D Contracts Decline by More than Half Since 2009; MDA R&D Falls Nearly Three-Fifths in 2015

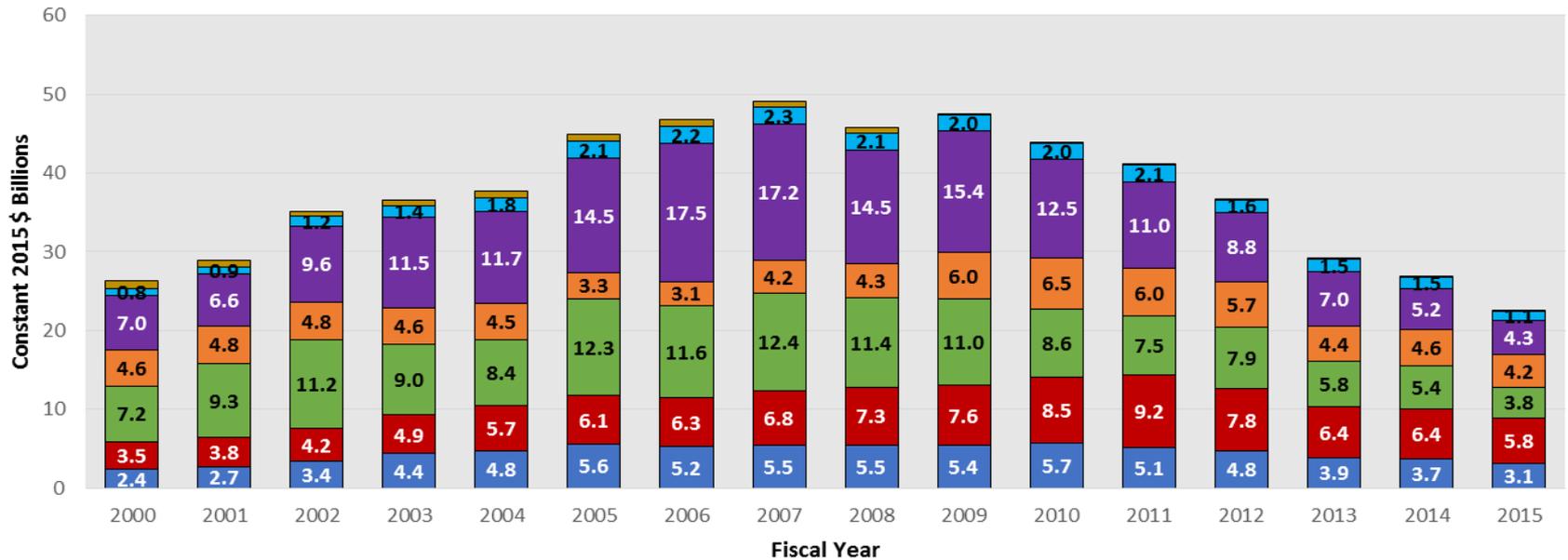


## Research Hypotheses

1. Budget drawdowns will lead to shifts away from early-stage, “seed corn” R&D, towards mid-to-late-stage R&D tied to high-profile programs.
2. Cuts in R&D due to budget drawdown will be done on a “salami slice” basis, rather than reflecting a thoughtful prioritization of resources.
3. Newer R&D contracts will bear a disproportionate share of cuts during budget drawdowns.
4. Large prime vendors will account for increasing shares of federal R&D during budget drawdowns.

**Hypothesis 1: Budget drawdowns will lead to shifts away from early-stage, “seed corn” R&D, towards mid-to-late-stage R&D tied to high-profile programs.**

# Overall DoD “Seed Corn” R&D Preserved During Downturn; Mid-to-Late-Stage R&D Declines Dramatically



### Stage of R&D

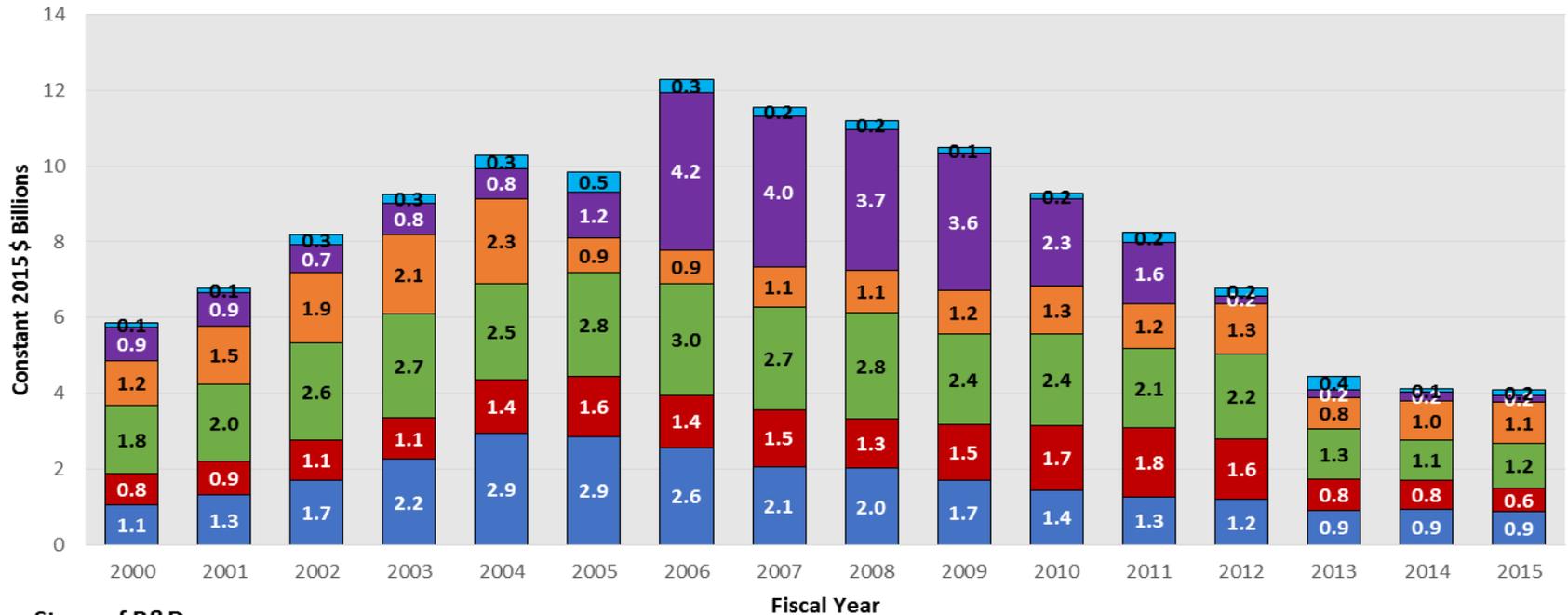
(% Change 2014-2015, 2009-2015)

(Overall Defense R&D:

-17% 2014-2015, -53% 2009-2015)

- Basic Research (6.1)  
(-14% 2014-2015, -42% 2009-2015)
- Applied Research (6.2)  
(-9% 2014-2015, -23% 2009-2015)
- Advanced Technology Development (6.3)  
(-29% 2014-2015, -65% 2009-2015)
- Advanced Component Development & Prototypes (6.4)  
(-10% 2014-2015, -31% 2009-2015)
- System Development & Demonstration (6.5)  
(-18% 2014-2015, -72% 2009-2015)
- Operational Systems Development (6.7)  
(-26% 2014-2015, -45% 2009-2015)
- Operation of Government R&D Facilities  
(11% 2014-2015, -65% 2009-2015)

# Army Mid-to-Late-Stage R&D Virtually Disappears; Six-Year Trough in MDAP Development Pipeline



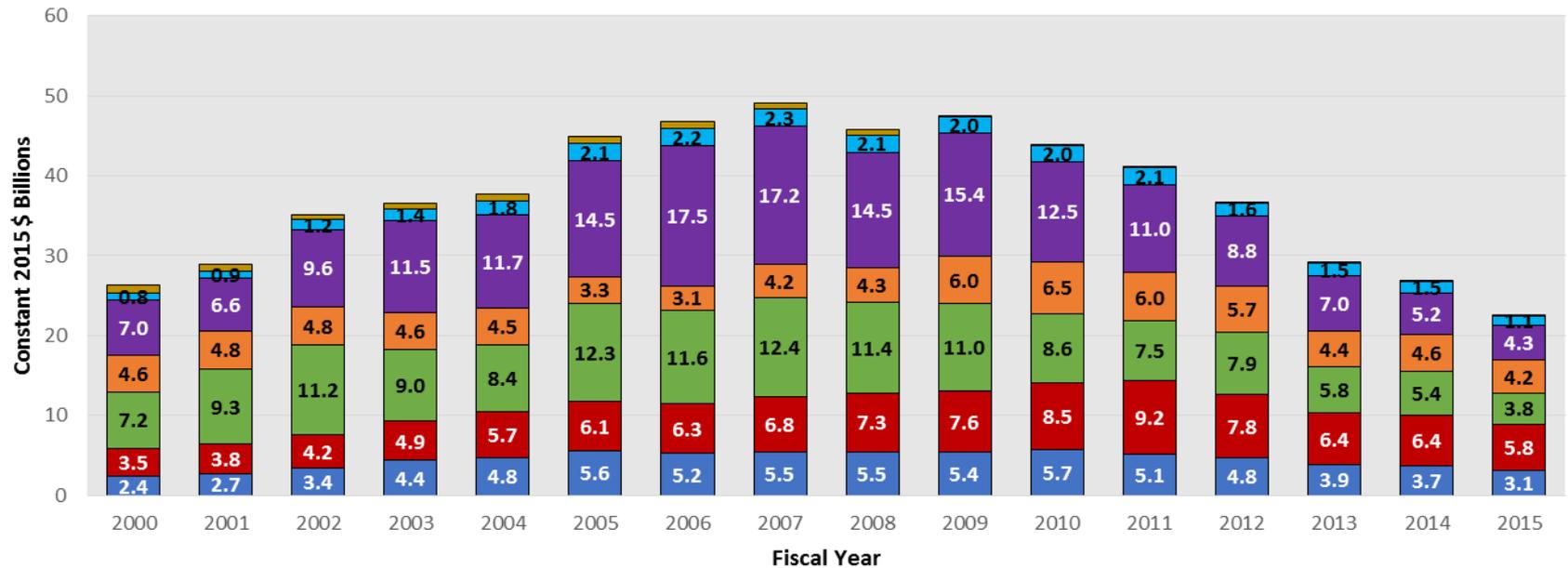
### Stage of R&D

(% Change 2014-2015, 2009-2015)  
 (Overall Army R&D:  
 -1% 2014-2015, -61% 2009-2015)

- Basic Research (6.1)  
(-7% 2014-2015, -49% 2009-2015)
- Applied Research (6.2)  
(-18% 2014-2015, -58% 2009-2015)
- Advanced Technology Development (6.3)  
(10% 2014-2015, -50% 2009-2015)
- Advanced Component Development & Prototypes (6.4)  
(4% 2014-2015, -6% 2009-2015)
- System Development & Demonstration (6.5)  
(-18% 2014-2015, -95% 2009-2015)
- Operational Systems Development (6.7)  
(52% 2014-2015, 4% 2009-2015)

**Hypothesis 2: Cuts in R&D due to budget drawdown will be done on a “salami slice” basis, rather than reflecting a thoughtful prioritization of resources.**

## Sequestration Impact on Overall DoD R&D Contracting Varies Significantly Between Stages of R&D



### Stage of R&D

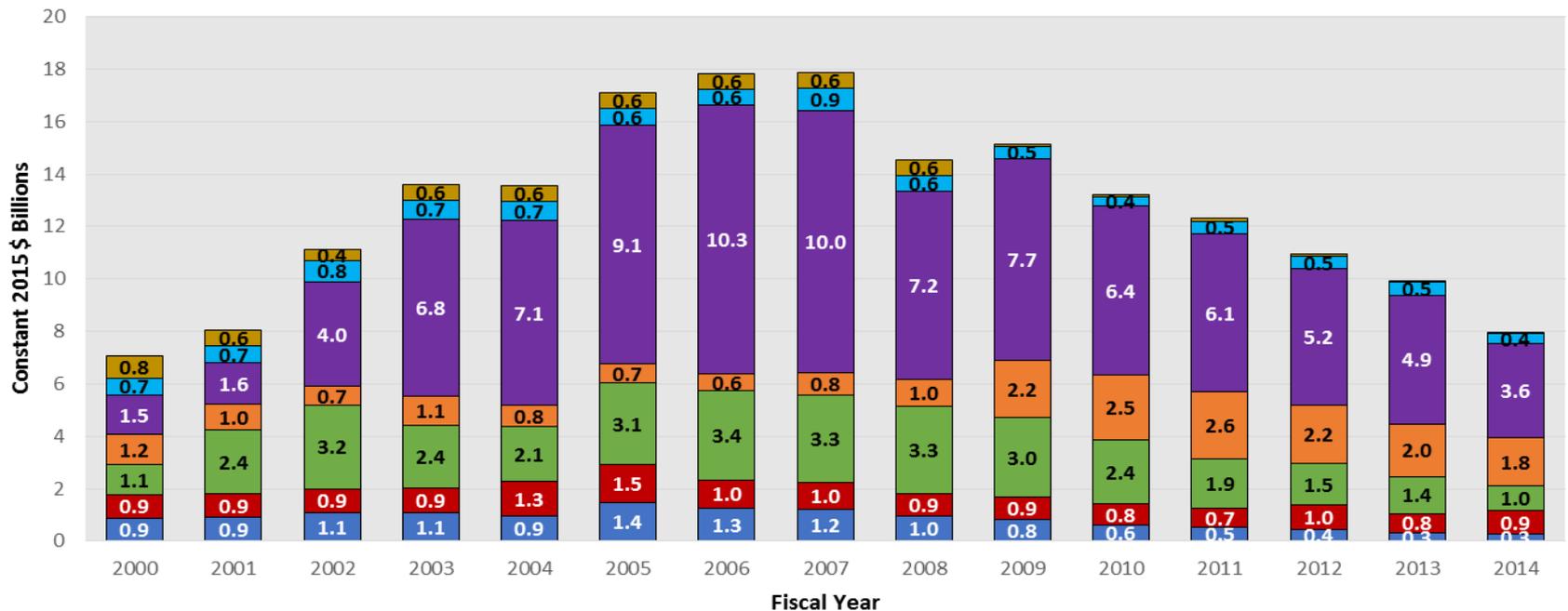
(% Change 2014-2015, 2012-2015)

(Overall Defense R&D:

-17% 2014-2015, -39% 2012-2015)

- Basic Research (6.1)  
(-14% 2014-2015, -34% 2012-2015)
- Applied Research (6.2)  
(-9% 2014-2015, -25% 2012-2015)
- Advanced Technology Development (6.3)  
(-29% 2014-2015, -51% 2012-2015)
- Advanced Component Development & Prototypes (6.4)  
(-10% 2014-2015, -27% 2012-2015)
- System Development & Demonstration (6.5)  
(-18% 2014-2015, -51% 2012-2015)
- Operational Systems Development (6.7)  
(-26% 2014-2015, -30% 2012-2015)
- Operation of Government R&D Facilities  
(11% 2014-2015, -20% 2012-2015)

## Trough in Navy MDAP Development Pipeline Likely to Persist Until FY2019



### Stage of R&D

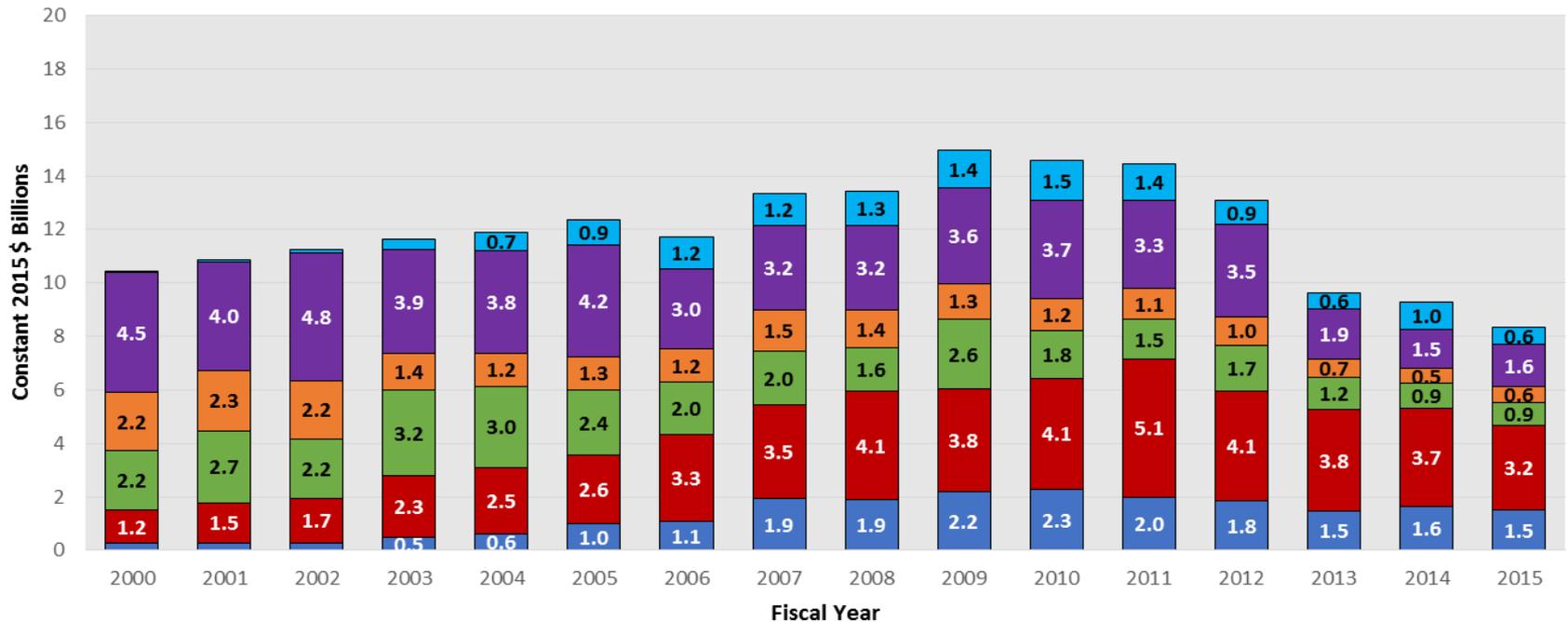
(% Change 2014-2015, 2012-2015)

(Overall Navy R&D:

-14% 2014-2015, -38% 2012-2015)

- Basic Research (6.1)  
(3% 2014-2015, -38% 2012-2015)
- Advanced Technology Development (6.3)  
(-22% 2014-2015, -52% 2012-2015)
- System Development & Demonstration (6.5)  
(-30% 2014-2015, -51% 2012-2015)
- Operation of Government R&D Facilities  
(8% 2014-2015, -22% 2012-2015)
- Applied Research (6.2)  
(4% 2014-2015, -5% 2012-2015)
- Advanced Component Development & Prototypes (6.4)  
(9% 2014-2015, -10% 2012-2015)
- Operational Systems Development (6.7)  
(-20% 2014-2015, -40% 2012-2015)

# Air Force R&D Likely to Exit MDAP Development Trough As B-21 Program Progresses



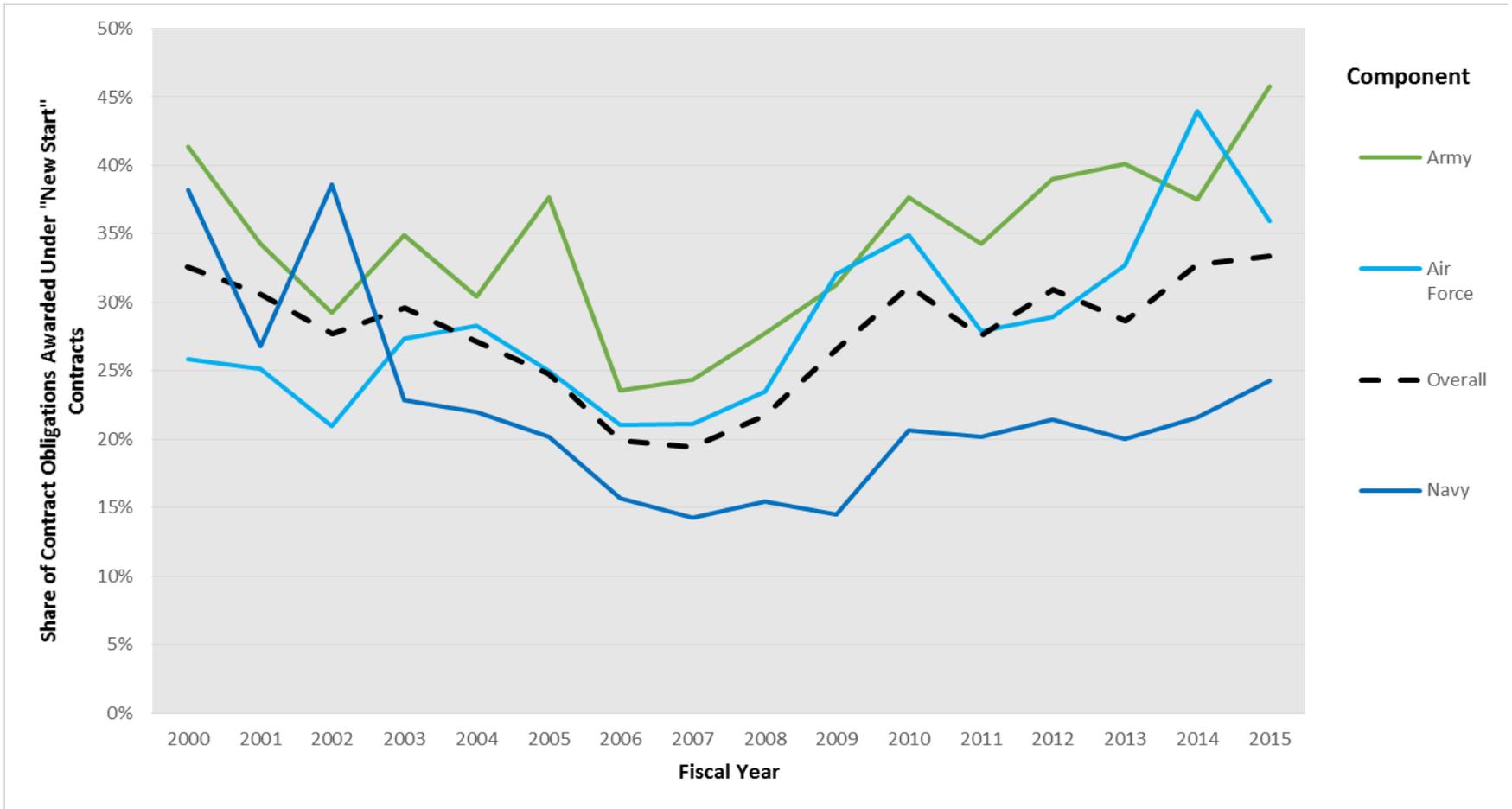
**Stage of R&D**

(% Change 2014-2015, 2012-2015)  
 (Overall Air Force R&D:  
 -10% 2014-2015, -36% 2012-2015)

- Basic Research (6.1)  
(-8% 2014-2015, -18% 2012-2015)
- Applied Research (6.2)  
(-14% 2014-2015, -23% 2012-2015)
- Advanced Technology Development (6.3)  
(-8% 2014-2015, -50% 2012-2015)
- Advanced Component Development & Prototypes (6.4)  
(13% 2014-2015, -43% 2012-2015)
- System Development & Demonstration (6.5)  
(5% 2014-2015, -55% 2012-2015)
- Operational Systems Development (6.7)  
(-36% 2014-2015, -27% 2012-2015)

**Hypothesis 3: Newer R&D contracts will bear a disproportionate share of cuts during budget drawdowns.**

## Across DoD, Share of R&D Contract Obligations Under “New Start” Contracts Increases During Budget Drawdown



**Hypothesis 4: Large prime vendors will account for increasing shares of federal R&D during budget drawdowns.**

## Largest Prime Vendors See Historically Low Market Share of Defense R&D

