



# Defense Modernization Plans through the 2020s: Addressing the Bow Wave

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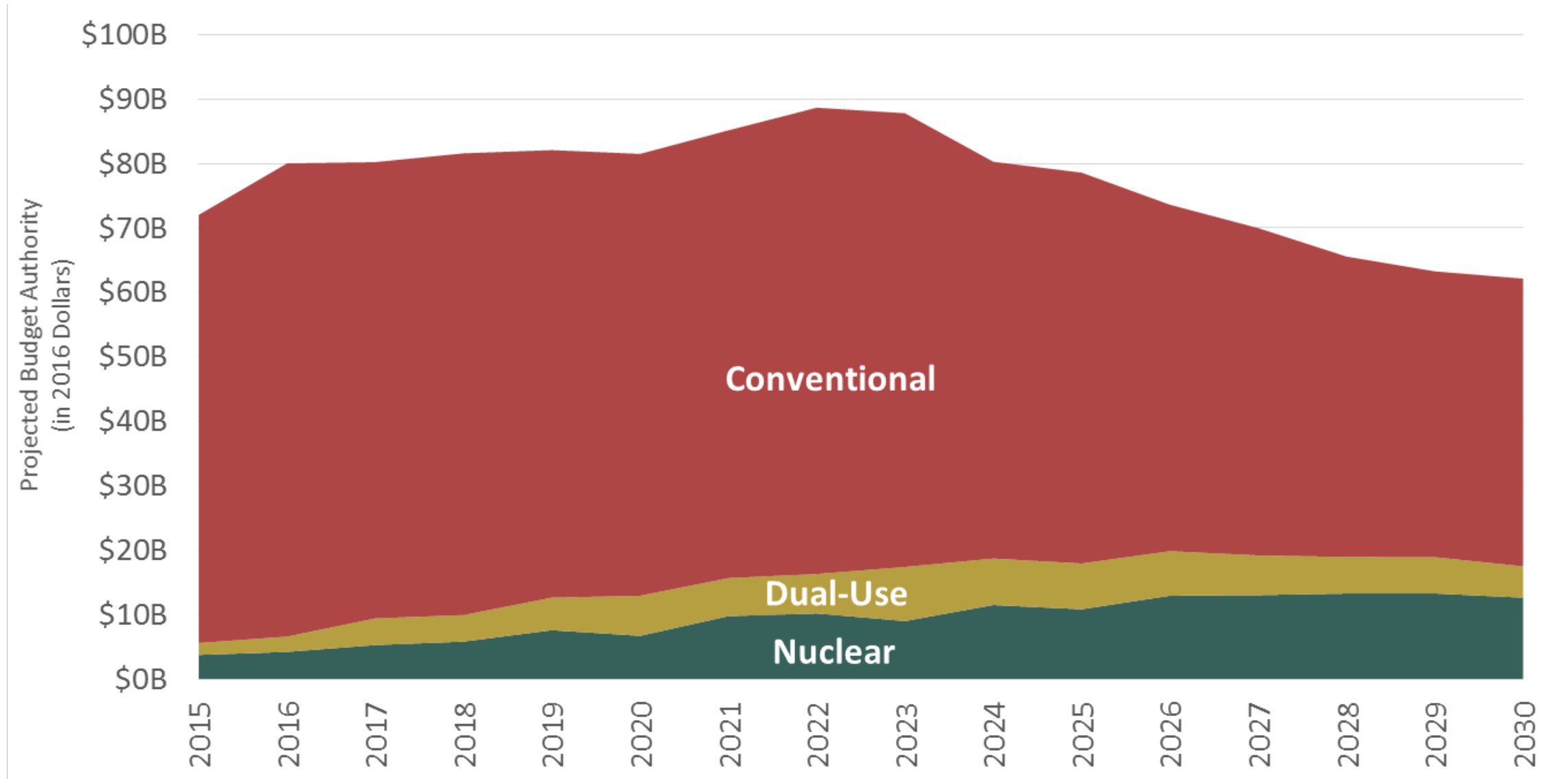
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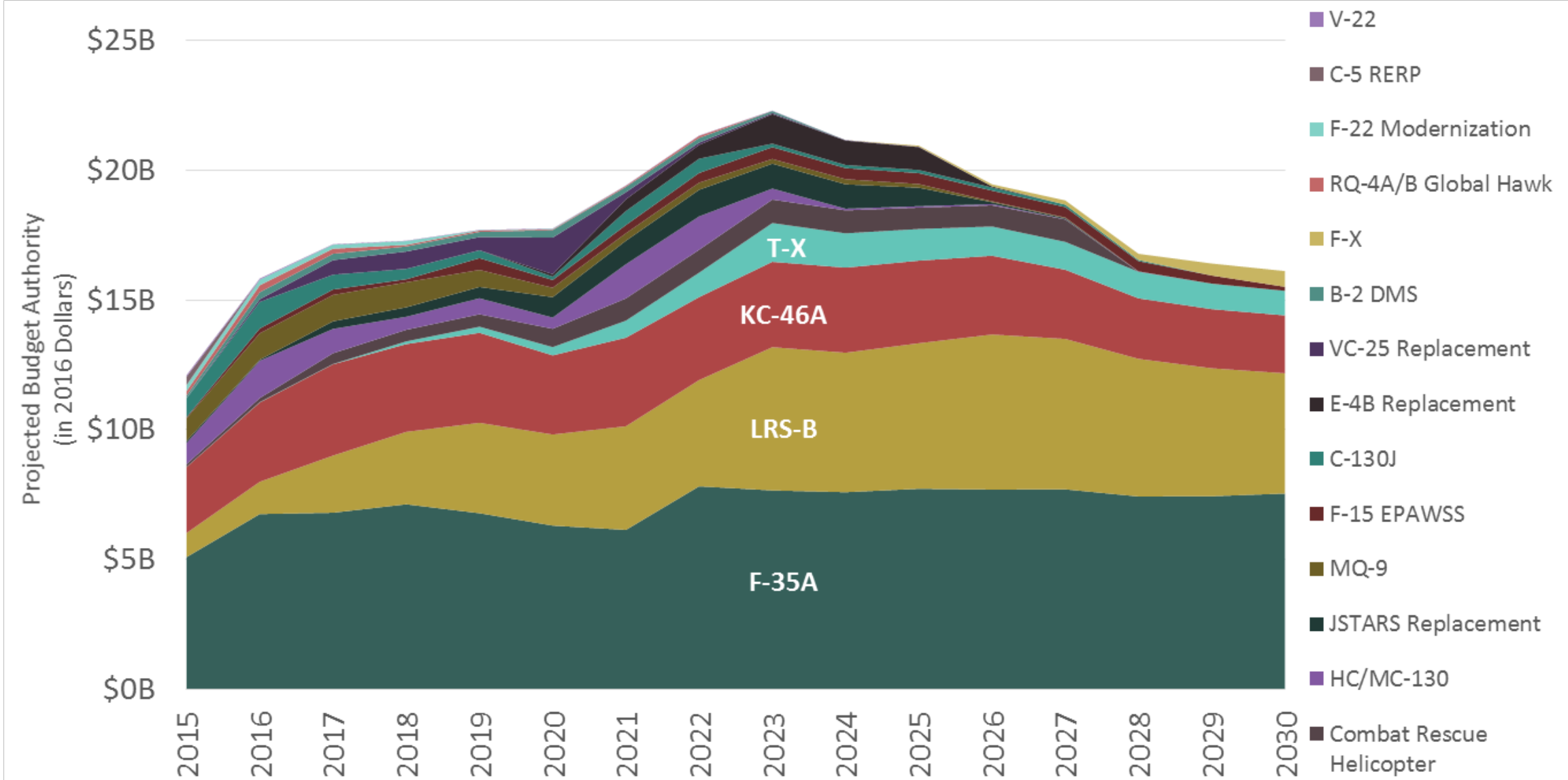
# Introduction

- **Modernization Bow Wave:**
  - A phrase commonly used to describe long-term modernization plans that depend on a significant increase in future funding.
  - Typically forms as the overall defense budget declines and programs are delayed or stretched into the future.
- **Scope of Study:**
  - Focuses on 120 major acquisition programs over the next 15 years
  - Does not include operation and sustainment costs or “black” programs
- **Primary Data Sources:**
  - FY2016 President’s Budget Request
  - December 2014 Selected Acquisition Reports
  - 30-year aviation and shipbuilding plans
  - NNSA Stockpile Stewardship and Management Plan

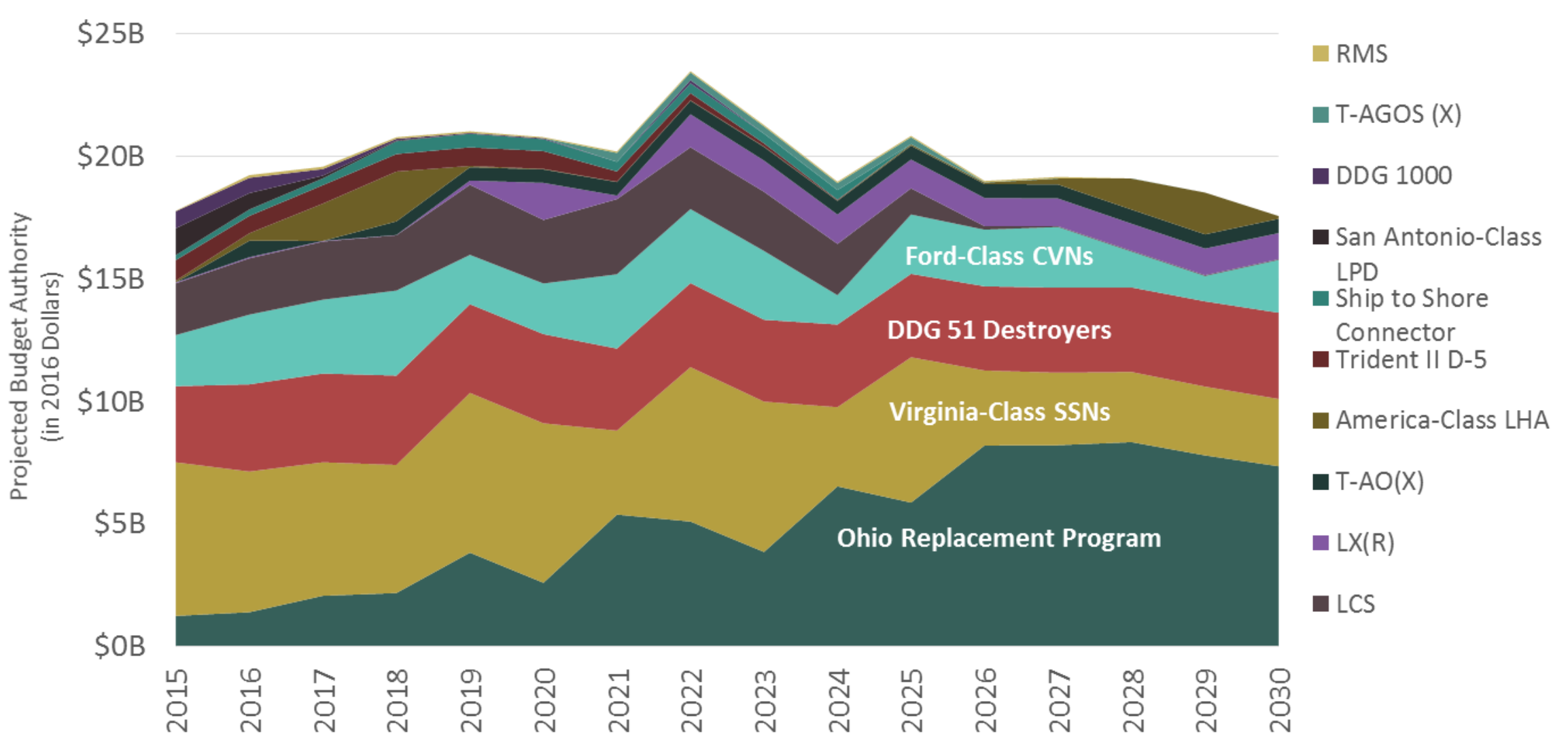
# Nuclear vs. Conventional MDAP Bow Wave



# Air Force Major Aircraft Programs

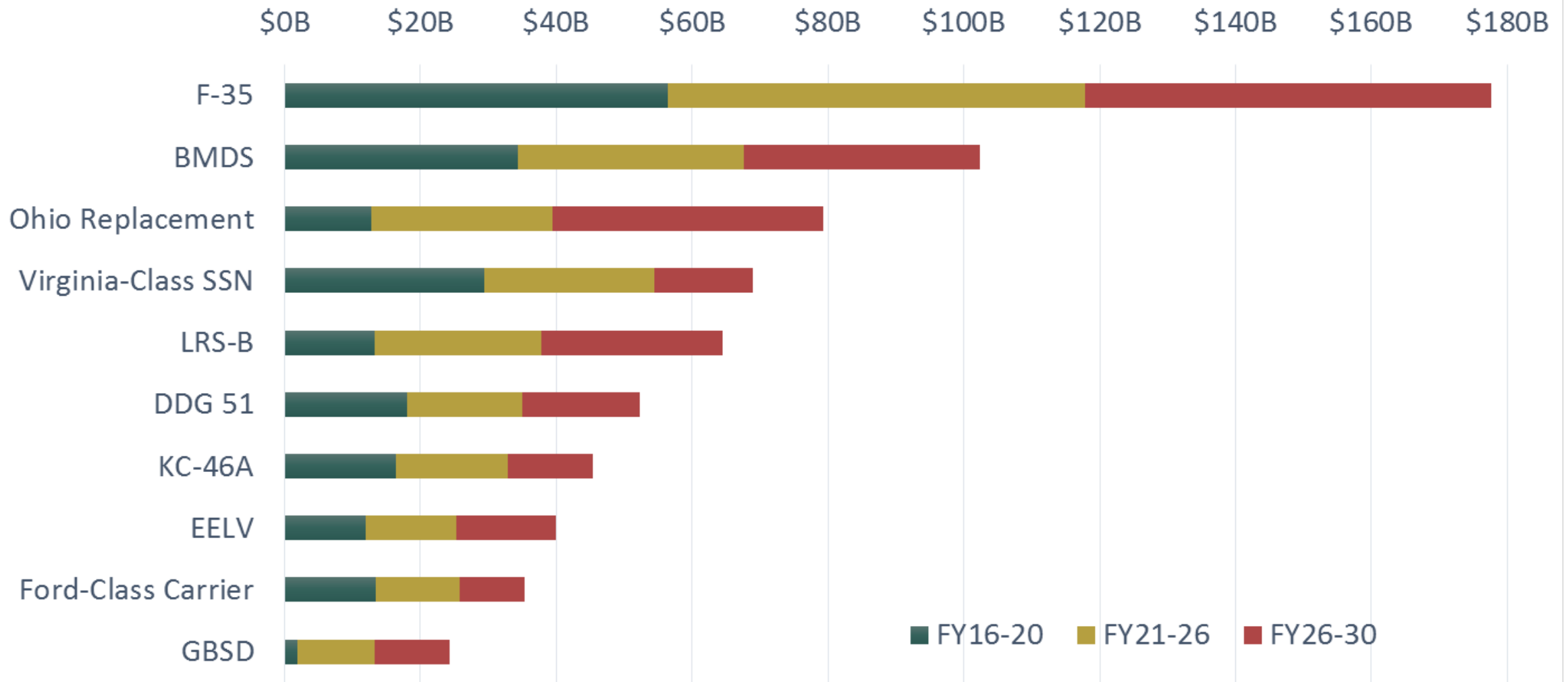


# Navy Ship and Nuclear Programs



# Top 10 Acquisition Programs FY16-30

Projected Budget Authority for FY 2016 to FY 2030 (in 2016 Dollars)



# Potential for Cost Overruns

- Funding projections do not include potential cost overruns
- Prior studies have identified trends in cost overruns
  - Average growth of 57% in development and 34% in procurement (RAND 2008)
  - Average total growth of 46% (RAND 2006)
  - Correlation between magnitude of cost growth and programs initiated in a declining budget environment (IDA 2014)
- Errors in initial estimates are the single largest driver of cost growth
- Overruns are a significant risk for programs still in early development (e.g. LRS-B, JLTV, Ohio Replacement, etc.)



# Questions?

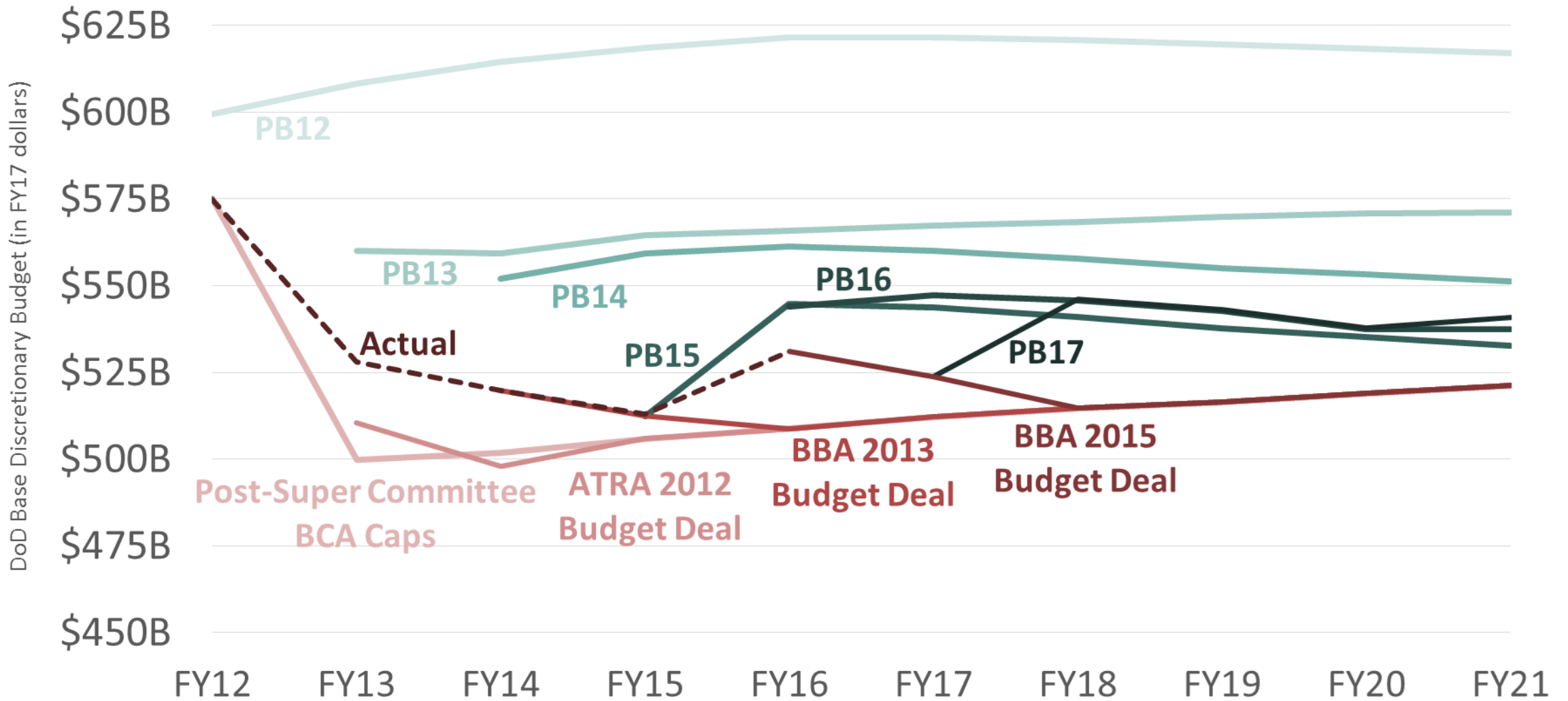
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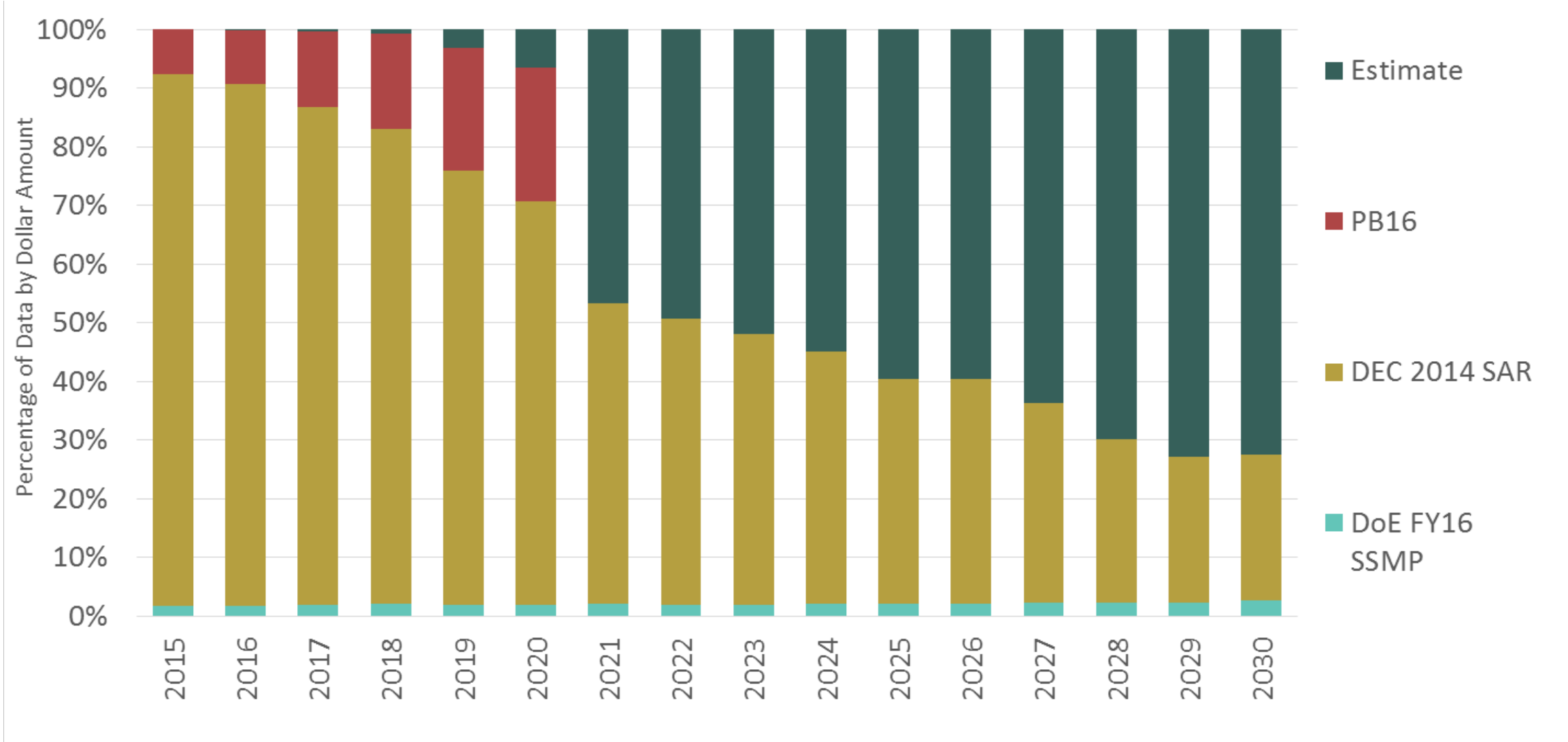
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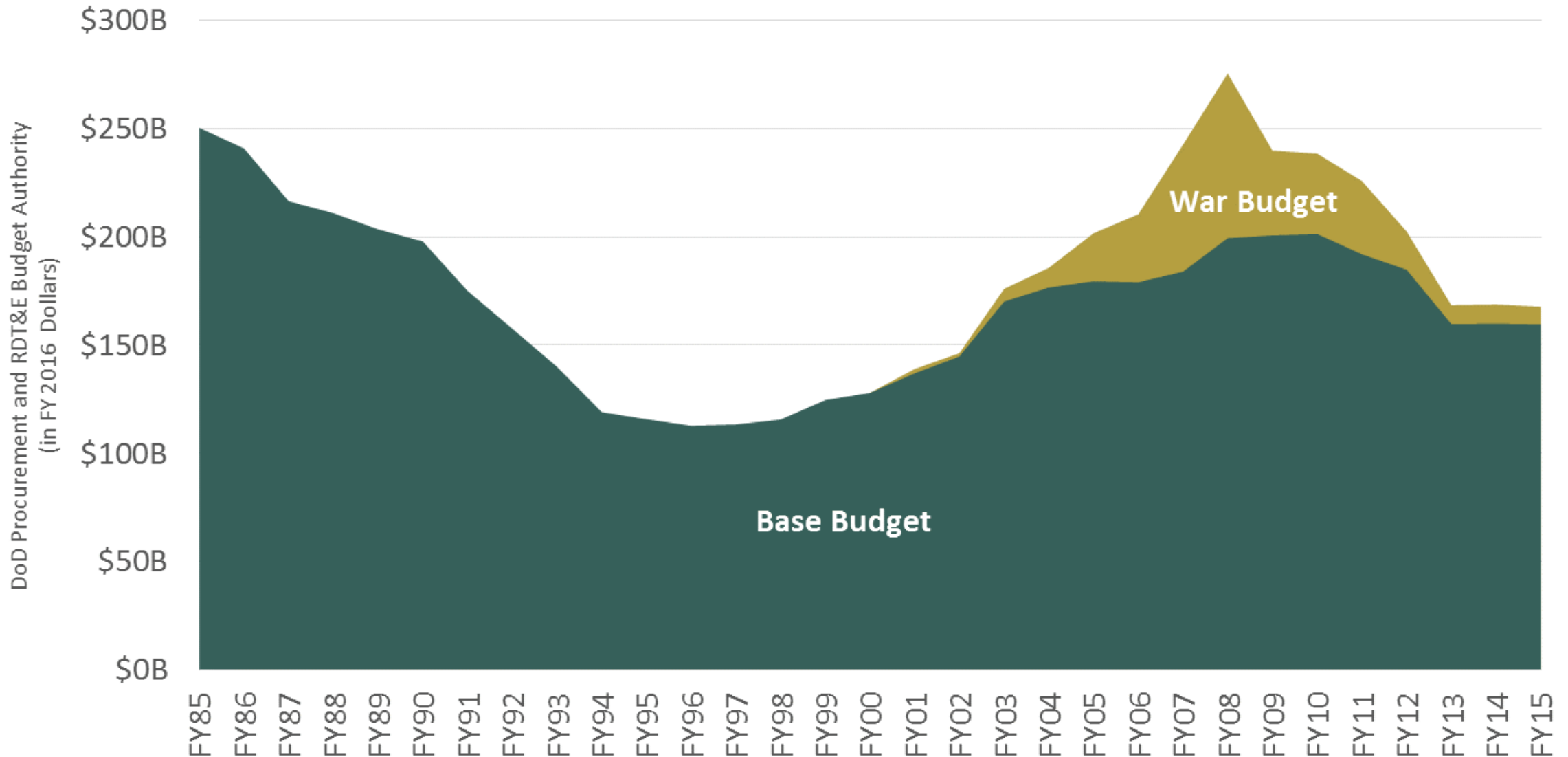
# Funding Constraints of the BCA



# Data by Source



# The Hollow Buildup of the 2000s



# Major Programs Canceled in Development 2001-2010

Program Name	Service	Sunk Costs (in then-year dollars)
Future Combat Systems (FCS)	Army	\$18.1B
RAH-66 Comanche Armed Reconnaissance and Attack Helicopter	Army	\$7.9B
National Polar-orbiting Operational Environmental Satellite System (NPOESS)	Air Force / NOAA	\$5.8B
Airborne Laser (ABL)	Air Force	\$5.2B
Future Imagery Architecture (FIA) Electro-Optical Imagery Satellites	NRO	\$4B
VH-71 Presidential Helicopter	Marine Corps	\$3.7B
Expeditionary Fighting Vehicle (EFV)	Marine Corps	\$3.3B
Transformational SATCOM (TSAT)	Air Force	\$3.2B
XM2001 Crusader Self-Propelled Howitzer	Army	\$2.2B
E-10 Multi-sensor Command and Control Aircraft (MC2A)	Air Force	\$1.9B
Space Based Infrared Systems (SBIRS) – Low	Air Force	\$1.5B
Space Radar	Air Force	\$0.6B
Advanced SEAL Delivery System (ASDS)	Navy	\$0.6B
Armed Reconnaissance Helicopter	Army	\$0.5B
Aerial Common Sensor	Army / Navy	\$0.4B
CG(X) Next Generation Cruiser	Navy	\$0.2B
CSAR-X Combat Rescue Helicopter	Air Force	\$0.2B
Next Generation Bomber	Air Force	\$0.1B
	<b>Total</b>	<b>\$59B</b>

# Some of the Changes in PB17

- Air Force:
  - Procurement of 75 additional MQ-9 Reapers
  - Slip of \$3.5B in LRS-B funding over FYDP
  - Reduction of 45 F-35As over FYDP
- Navy:
  - Reduction of 12 LCS ships
  - Maintaining production of DDG-51s at two per year
  - Accelerating Virginia Payload Module
  - Increasing F-35B/C buy over FYDP