



Congressional Budget Office

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2017 Outlook for Navy Shipbuilding

Presentation at the 2017 Defense Outlook Forum

Eric J. Labs

Senior Analyst for Naval Forces and Weapons

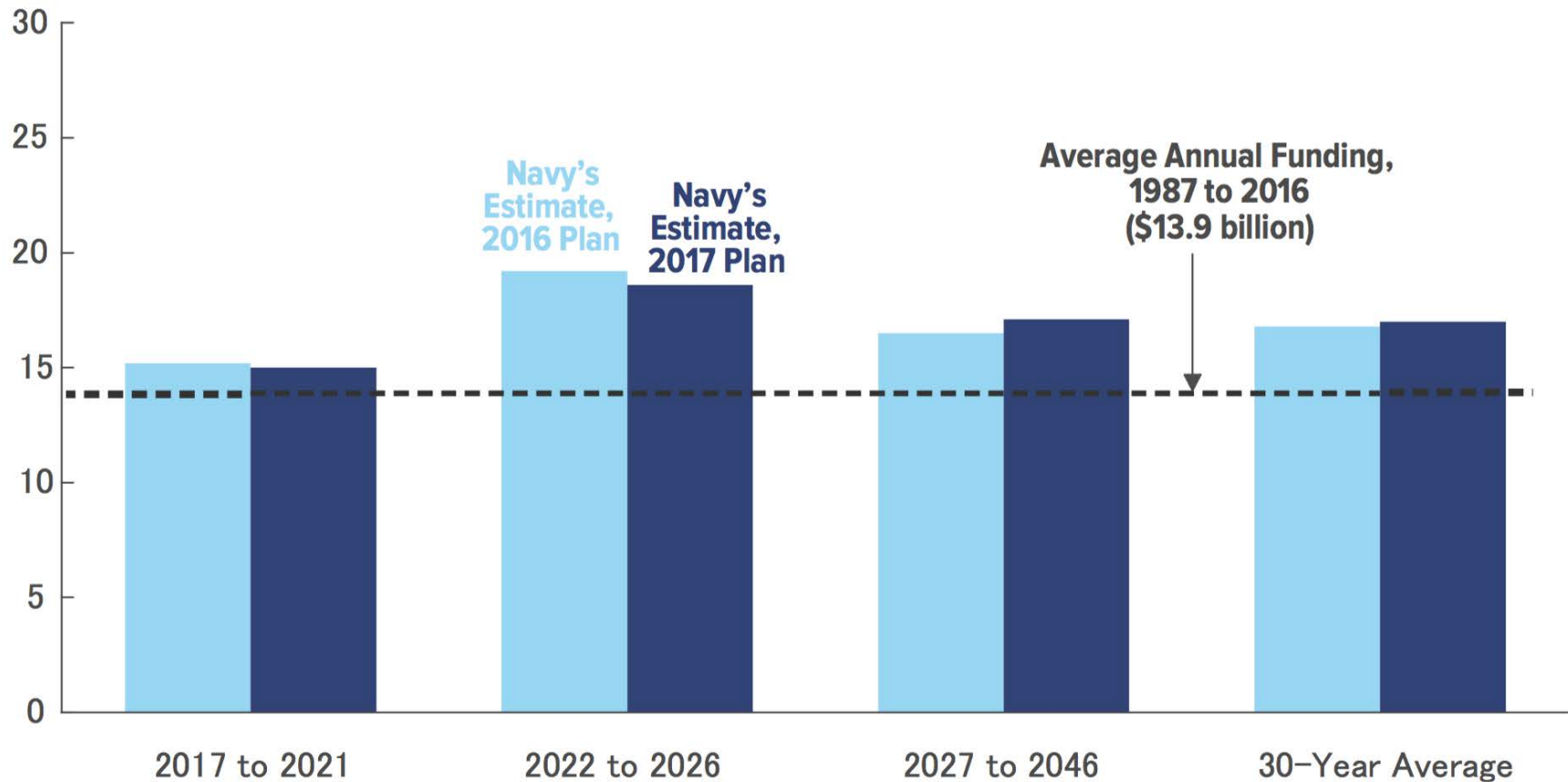
This presentation includes data that will be published in CBO's forthcoming report *An Analysis of the Navy's Fiscal Year 2017 Shipbuilding Plan*, a summary of which is currently available on CBO's website (www.cbo.gov/publication/52324).

Outline

- The Navy's 2017 shipbuilding plan
- CBO's estimate of the cost of the 2017 plan
- The problem of cost growth in lead ships
- The new force structure assessment
- A fleet that conforms to historical funding levels
- A 350-ship fleet by 2046

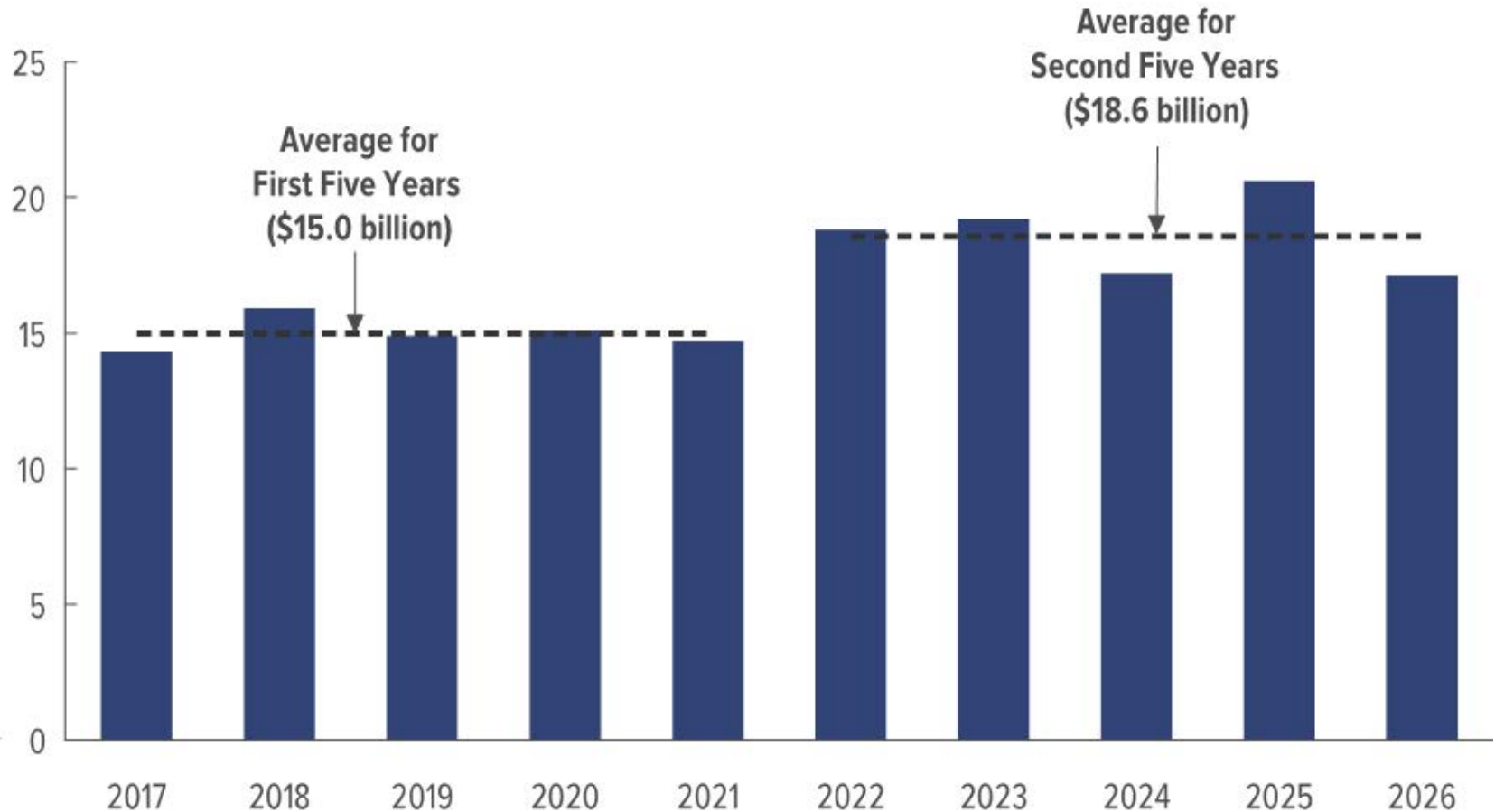
Comparison of the Navy's Estimates Under the 2016 and 2017 Plans

Billions of 2016 Dollars



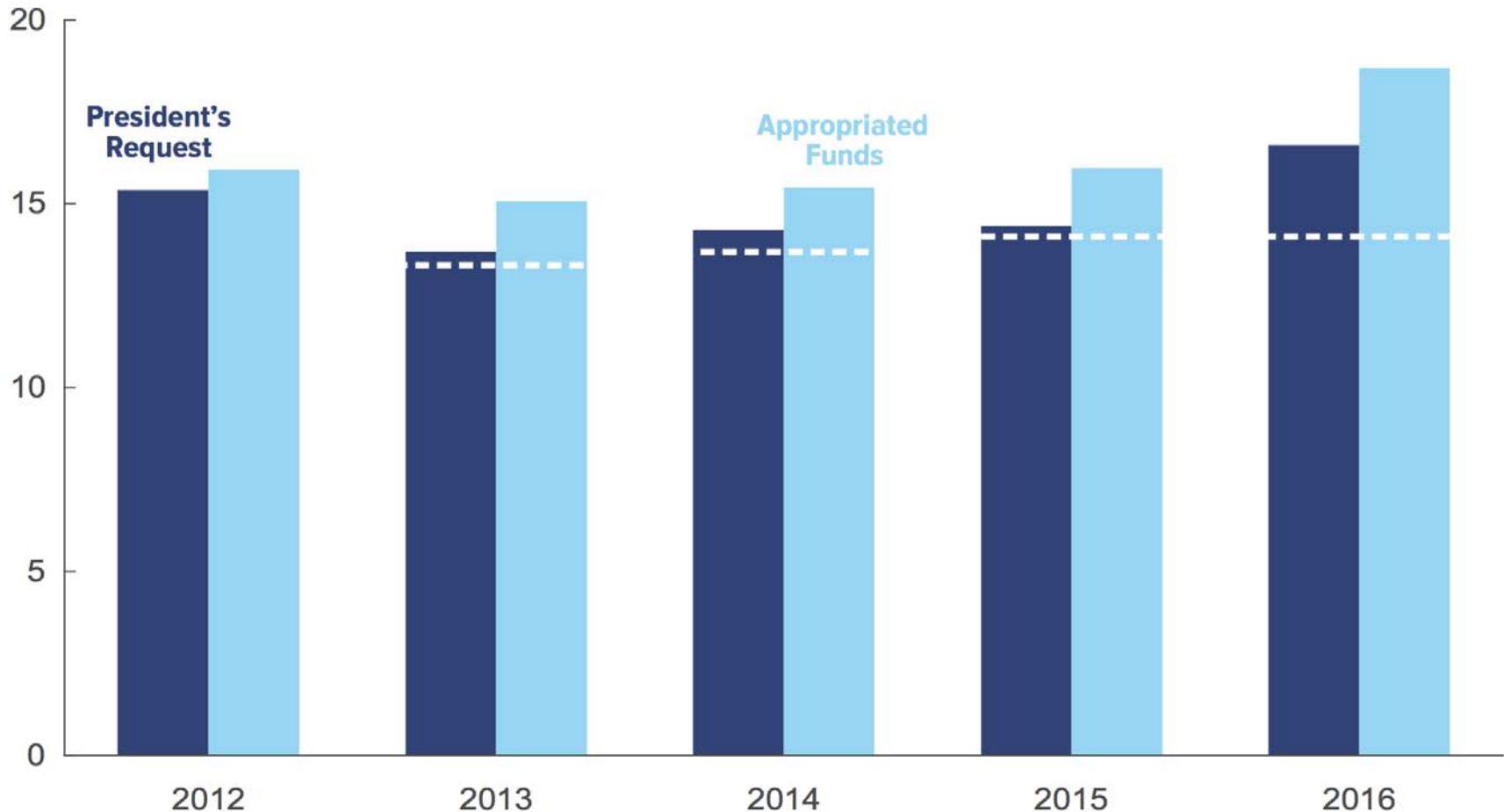
The Navy's Estimates for New-Ship Construction, 2017 to 2026

Billions of 2016 Dollars



Requested and Appropriated Shipbuilding Budgets Under the Budget Control Act

Billions of Dollars



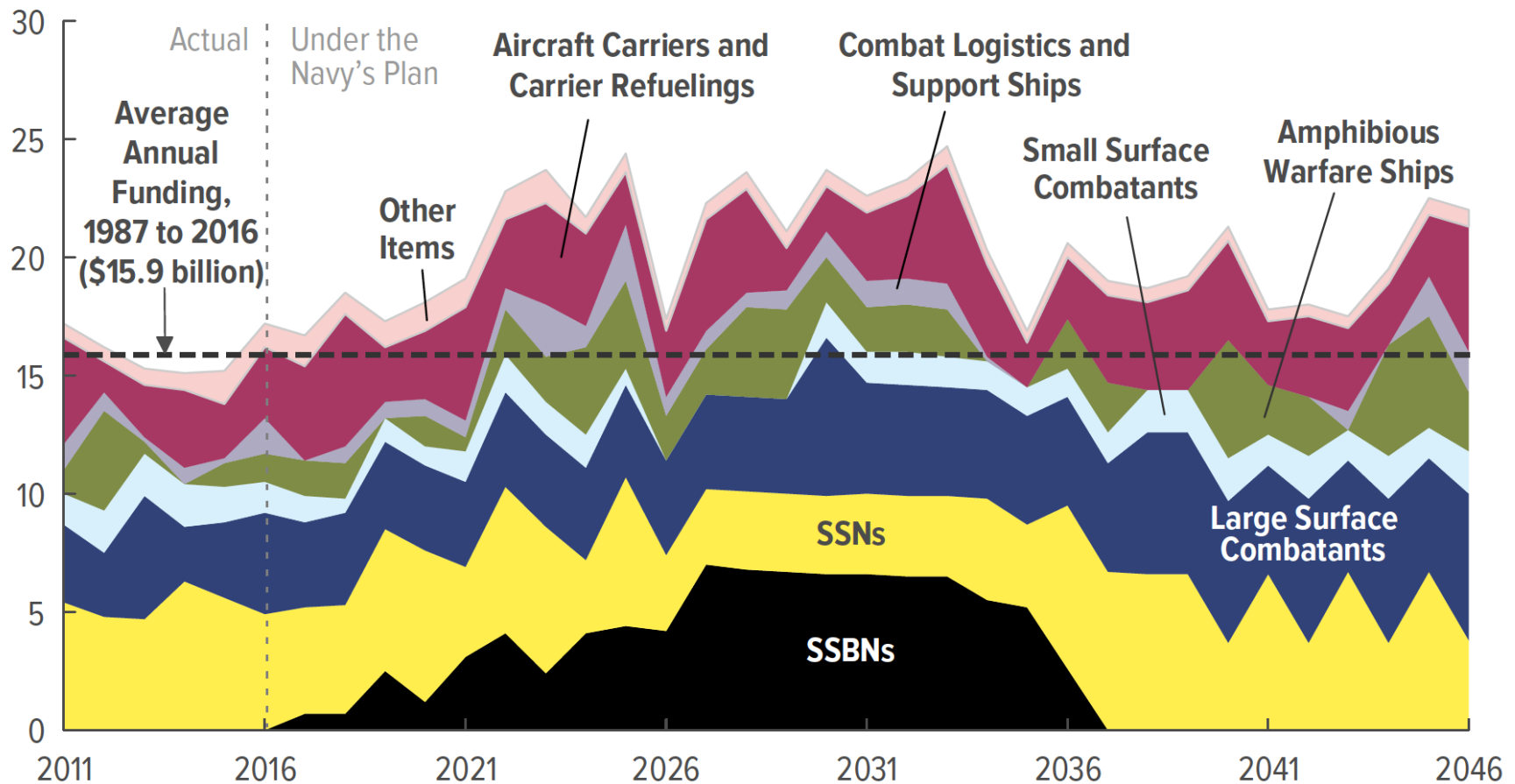
The dashed line indicates what the shipbuilding budget would have been if it had equaled its historical share of the Department of Defense's budget under the Budget Control Act.

Average Annual Shipbuilding Costs Under the Navy's 2017 Plan

	Near Term (2017-2021)	Midterm (2022-2026)	Far Term (2027-2046)	30-Year Average
Navy Estimates (Billions of 2016 Dollars)				
New-Ship Construction	15.0	18.6	17.1	17.0
Plus Carrier Refuelings	16.5	19.6	18.0	18.0
Plus All Other Items	17.6	20.6	18.6	18.8
CBO Estimates (Billions of 2016 Dollars)				
New-Ship Construction	15.3	19.7	17.8	18.9
Plus Carrier Refuelings	16.7	20.8	20.5	19.9
Plus All Other Items	17.9	21.7	21.3	20.7
Percentage Difference				
New-Ship Construction	2	6	15	11
Plus Carrier Refuelings	2	6	14	11
Plus All Other Items	2	5	14	10

CBO's Estimates of Annual Shipbuilding Costs Under the Navy's 2017 Plan

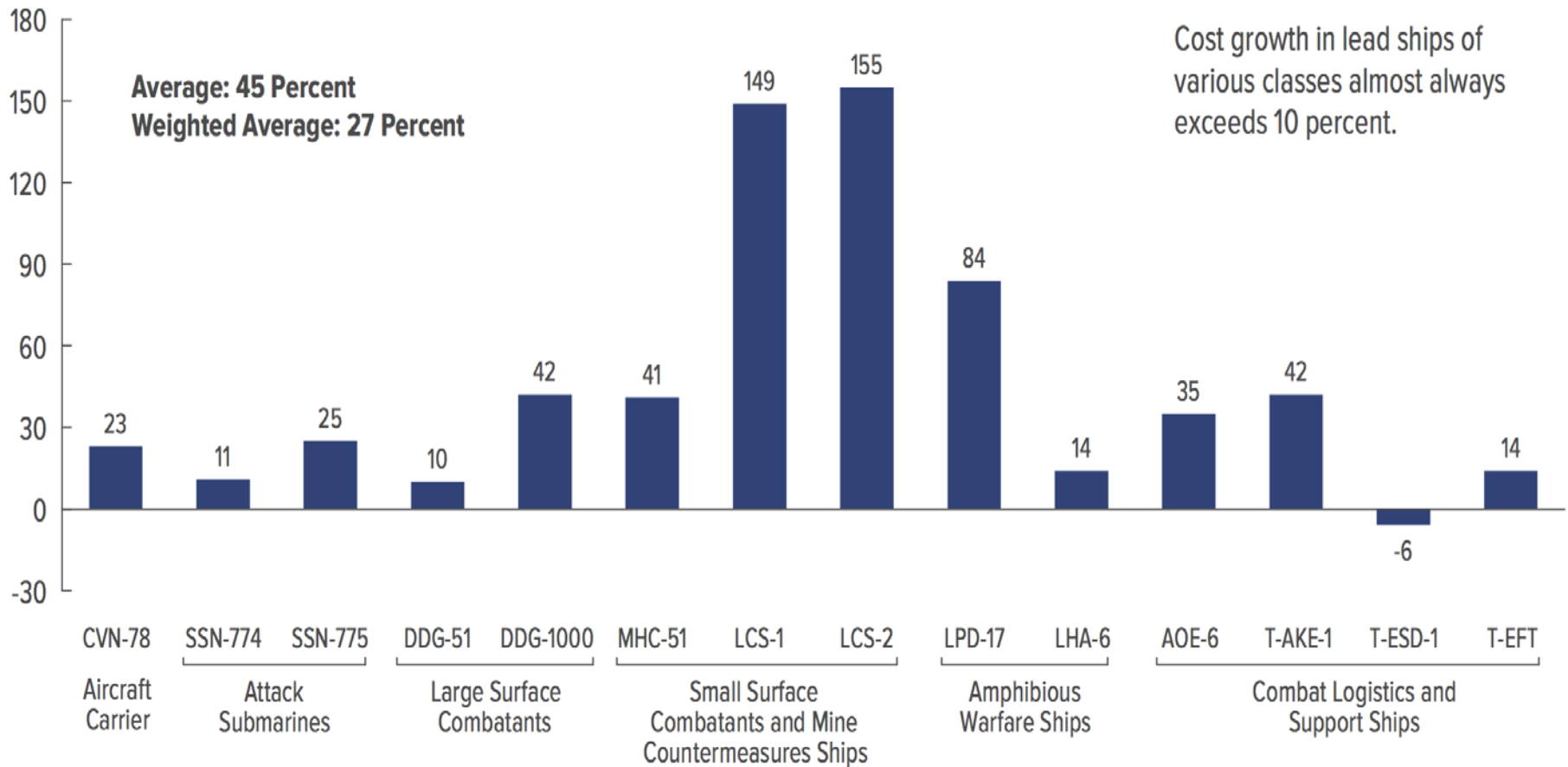
Billions of 2016 Dollars



SSBNs = ballistic missile submarines; SSNs = attack submarines.

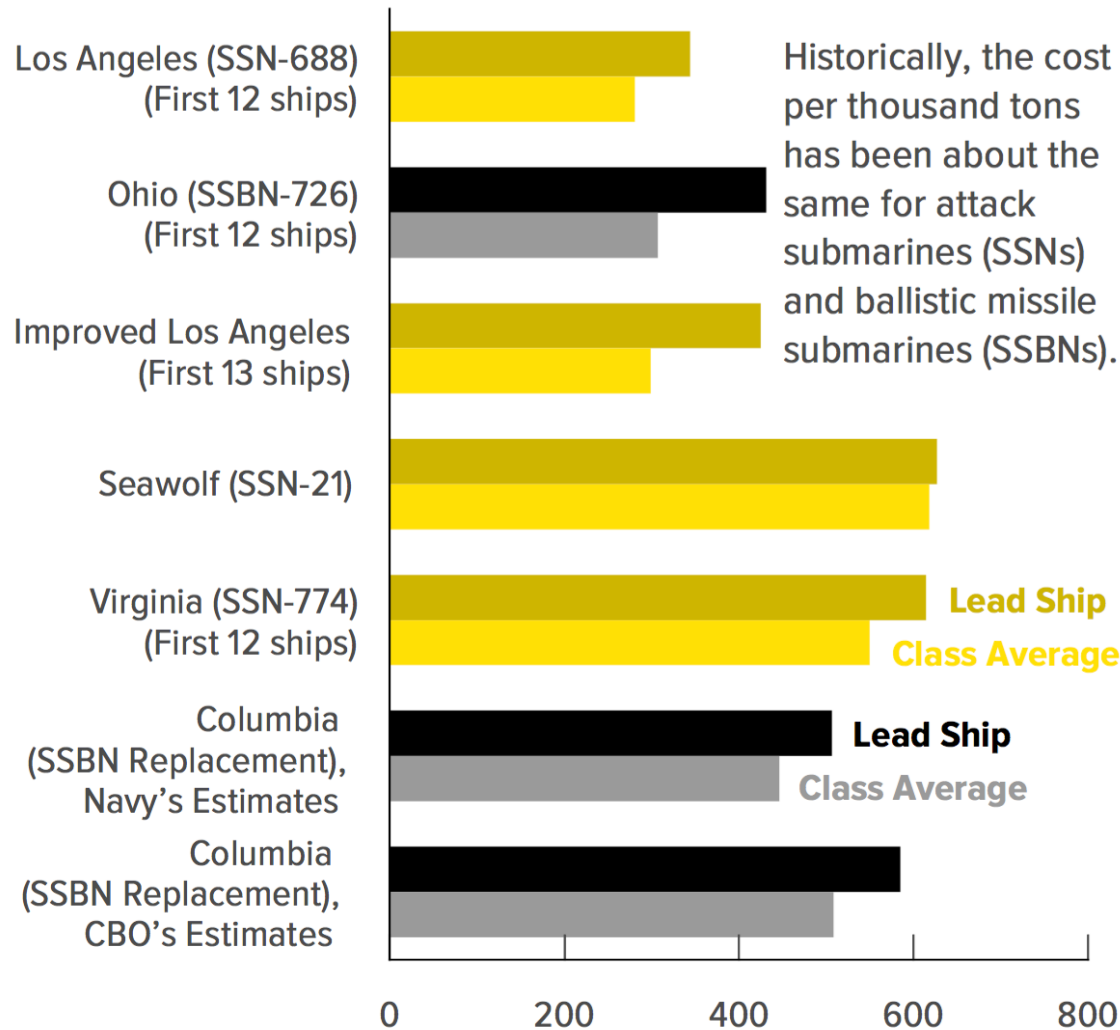
Cost Growth in Lead Ships, 1986 to 2016

Percent



Cost Per Thousand Tons for Various Classes of Submarine, by Lead Ship and Class Average

Millions of 2016 Dollars

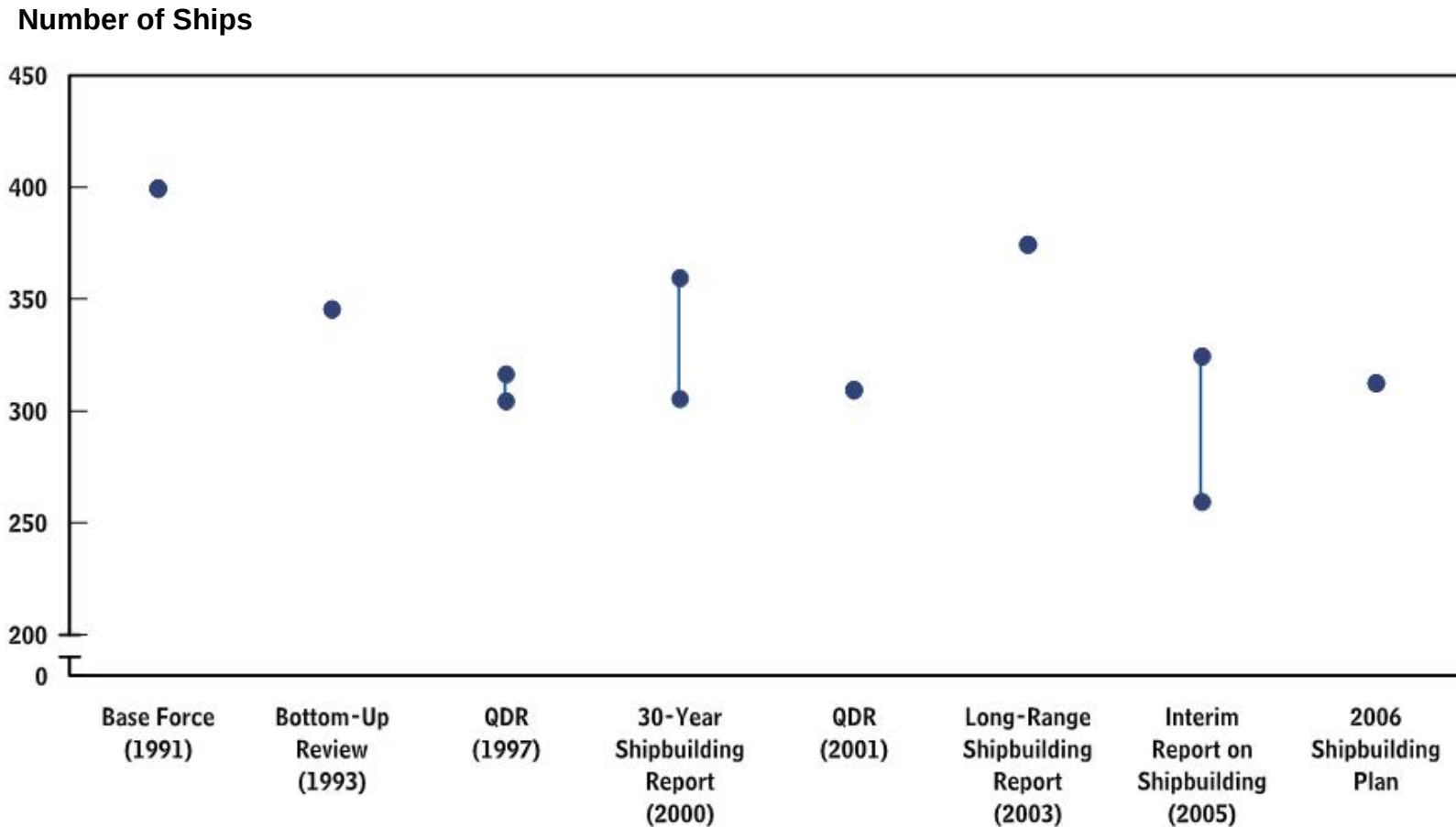


The 2016 Force Structure Assessment (FSA) Compared With Prior FSAs

	2005 FSA	2010 FSA	2012 FSA	2014 Update	2016 FSA
Aircraft Carriers	11	11	11	11	12
Ballistic Missile Subs	14	12	12	12	12
Attack Submarines	48	48	48	48	66
Guided Missile Submarines	4	4	0	0	0
Large Surface Combatants	88	94	88	88	104
Small Surface Combatants	55	55	52	52	52
Amphibious Ships	31	33	33	34	38
Combat Logistics Ships	30	30	29	29	32
Support Ships	<u>20</u>	<u>26</u>	<u>33</u>	<u>34</u>	<u>39</u>
Total	313*	313	306	308	355

*The total for the 2005 FSA includes 12 Maritime Prepositioning Force (Future) ships.

Historical Shipbuilding Goals, 1991 to 2006



QDR = Quadrennial Defense Review.

The Navy's Plan vs. a Fleet That Conforms to Historical Funding Levels (\$16 Billion Per Year), 2017 to 2026

Ship	Purchases		Inventory in 2026	
	Navy's Plan	Historical Funding	Navy's Plan	Historical Funding
Carriers	2	2	11	11
Ballistic Missile Submarines	3	3	14	14
Attack Submarines	17	14	47	47
Large Surface Combatants	20	16	99	99
Small Surface Combatants	14	12	35	35
Amphibious Warfare Ships	8	6	36	36
Support	22	22	67	66
Total	86	75	309	308

The Navy's Plan vs. a Fleet That Conforms to Historical Funding Levels (\$16 Billion Per Year), 2017 to 2046

Ship	Purchases		Inventory in 2046	
	Navy's Plan	Historical Funding	Navy's Plan	Historical Funding
Carriers	6	6	10	10
Ballistic Missile Submarines	12	12	12	12
Attack Submarines	44	30	51	39
Large Surface Combatants	66	44	80	63
Small Surface Combatants	58	39	45	29
Amphibious Warfare Ships	23	15	33	26
Support	45	34	61	52
Total	254	180	292	231

The Navy's Plan vs. a Notional Fleet of 350 Ships by 2046 (Could Cost About \$25 Billion Per Year), 2017 to 2026

Ship	Purchases		Inventory in 2026	
	Navy's Plan	350-Ship Fleet	Navy's Plan	350-Ship Fleet
Carriers	2	3	11	11
Ballistic Missile Submarines	3	3	14	14
Attack Submarines	17	20	47	48
Large Surface Combatants	20	29	99	101
Small Surface Combatants	14	28	35	42
Amphibious Warfare Ships	8	11	36	38
Support	22	22	67	67
Total	86	116	309	321

The Navy's Plan vs. a Notional Fleet of 350 Ships by 2046 (Could Cost About \$25 Billion Per Year), 2017 to 2046

Ship	Purchases		Inventory in 2046	
	Navy's Plan	350-Ship Fleet	Navy's Plan	350-Ship Fleet
Carriers	6	10	10	12
Ballistic Missile Submarines	12	12	12	12
Attack Submarines	44	52	51	58
Large Surface Combatants	66	92	80	106
Small Surface Combatants	58	75	45	62
Amphibious Warfare Ships	23	29	33	38
Support	45	51	61	65
Total	254	321	292	353

How Can the Navy Achieve a 350-Ship Fleet Sooner Than 2046?

- Build a new carrier every 3 years
- Keep all cruisers and destroyers in service for 40 years
- Construct 4 large surface combatants per year
- Purchase 4 small surface combatants per year
- Build 2 attack submarines per year
- Purchase 1 amphibious ship per year, 2 when building a new class of amphibious assault ships (LHAs)
- Construct 2 oilers per year

Achieving a 350-Ship Fleet Sooner

- Pro: Reduces total shipbuilding costs over the entire 30-year period
- Con: Increases annual shipbuilding costs for several years; increases annual manning and operating costs

Ship Retirements Under the Navy's 2017 Plan, 2017 to 2026

- 2 aircraft carriers
- 9 cruisers
- 1 destroyer
- 29 submarines
- 17 support ships
- 11 mine countermeasures ships

Options for Increasing the Capability of the Fleet Without Building More Ships: Procurement

- Purchase more ballistic missile defense upgrades for large surface combatants and robustly modernize existing ships
- Increase the capabilities of the planned frigate follow-on to the littoral combat ship
- Install vertical launch system (VLS) cells in current and future amphibious ships
- Include the Virginia payload module in all future attack submarines
- Develop and build new longer-range, hypersonic air-to-air and antiship missiles

Options for Increasing the Capability of the Fleet Without Building More Ships: Operational Changes

- Base more ships overseas
- Use dual crew systems on more ships
- Use more unmanned systems to extend the reach of existing ships

For more information, see Congressional Budget Office, *Preserving the Navy's Forward Presence With a Smaller Fleet* (March 2015), www.cbo.gov/publication/49989.

Questions?

- Eric.Labs@cbo.gov
- 202-226-2920

Definitions

AOE = fast combat support ship

CVN = nuclear-powered aircraft carrier

DDG = guided missile destroyer

LCS = littoral combat ship

LHA = amphibious assault ship

LPD = amphibious transport dock

MHC = coastal mine hunter

SSBN = ballistic missile submarine

SSN = attack submarine

T-AKE = ammunition cargo ship

T-EFT = expeditionary fast transport (formerly joint high speed vessel)

T-ESD = expeditionary transfer dock (formerly mobile landing platform)