

O&M Cost Modeling for the Department of Defense

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- Operations and maintenance (O&M) funds: operating forces, central logistics, departmental management, force installations, central training, command and intelligence, communications and information infrastructure, acquisition infrastructure, defense health program, and other benefit programs
- O&M is approximately 40 percent of the DoD topline (and its percentage is increasing)
- DoD/Services have a spotty record of projecting O&M in the Future Years Defense Program (FYDP)
- In 2006, OSD-AT&L developed a statistical model to explain historical O&M expenditures and evaluate the realism of projected O&M budgets
 - This model has a better track record of projecting top-level O&M expenditures in the FYDP than DoD/Service projections (including budget year projections)

IDA | O&M Model Methodology

- Total O&M can be predicted using:
 - Calculated O&M growth factor per active military end strength
 - US end strength (excluding Guard and Reserve)
 - End strength at permanent bases (NATO-Japan/Korea, etc.)
 - Deployed end strength
- FYDP expenditures were calculated using the following
 - Future end strength by Service from PB 2015
 - Anticipated global end strength distribution from public sources
 - Other hypothetical end strength levels and global end strength distribution scenarios
- The O&M model has:
 - Used Green Book Deflators
 - Estimated variable coefficients simultaneously
 - Evaluated multiple time periods & variable specifications
- Equations presented have the “best” statistical fit with data, are consistent with other results/tests, and have been selected based on historical prediction ability
- The equations used for prediction of top-level DoD O&M have the following form:

Strategic-level inputs

Growth coefficient Cost per personnel coefficients

$$1977-2013: \text{O\&M}(K\$) = 1.033^y * (55.9 * C + 50.4 * O + 126.3 * D)$$

M = Total Active Manpower

C = Manpower in US + Territories

O = Manpower in NATO countries + Japan + Korea

D = Manpower Deployed = M - (C + O);

y = Year index = future year - 1976

*Manpower data taken from DMDC database

Note: some versions of the model consolidate end strength variables into inside US (C) vs. outside US (O+D) or total force levels (C+O+D)

IDA | Baseline DoD Future End Strength Distribution

- End strength total from PB 15
- Force distribution from public sources

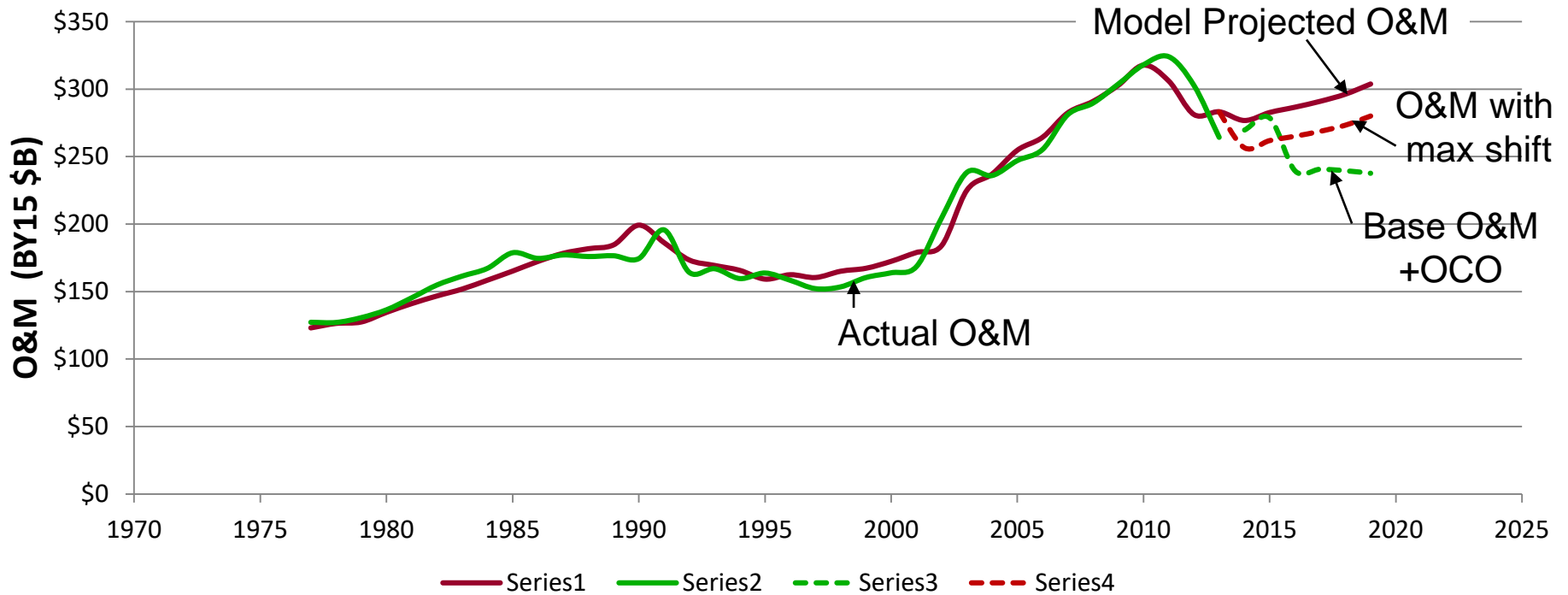
Derived End Strength for FY 13-19							
	Personnel Distribution						
	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
United States	1,084,881	1,057,392	1,043,941	1,017,441	993,241	973,541	963,741
NATO, Japan, Korea	146,917	144,502	142,087	142,087	142,087	142,087	142,087
Deployed	150,547	121,406	121,172	121,172	121,172	121,172	121,172
Total	1,382,345	1,323,301	1,307,200	1,280,700	1,256,500	1,236,800	1,227,000

- Changes in end strength levels from PB 2015:
 - Army: reduction from 532,043 to 420,000 through 2019
 - Navy: reduction from 323,951 to 315,718 through 2019
 - Marine Corps: reduction from 195,657 to 174,000 through 2019
 - Air Force: reduction from 330,694 to 303,852 through 2019
- Alternative scenario shifts “deployed” end strength in excess of the minimum historical deployment level (which occurred in 1997) to the U.S. for all future years



Total DoD O&M Projection Comparison (includes Defense-wide O&M)

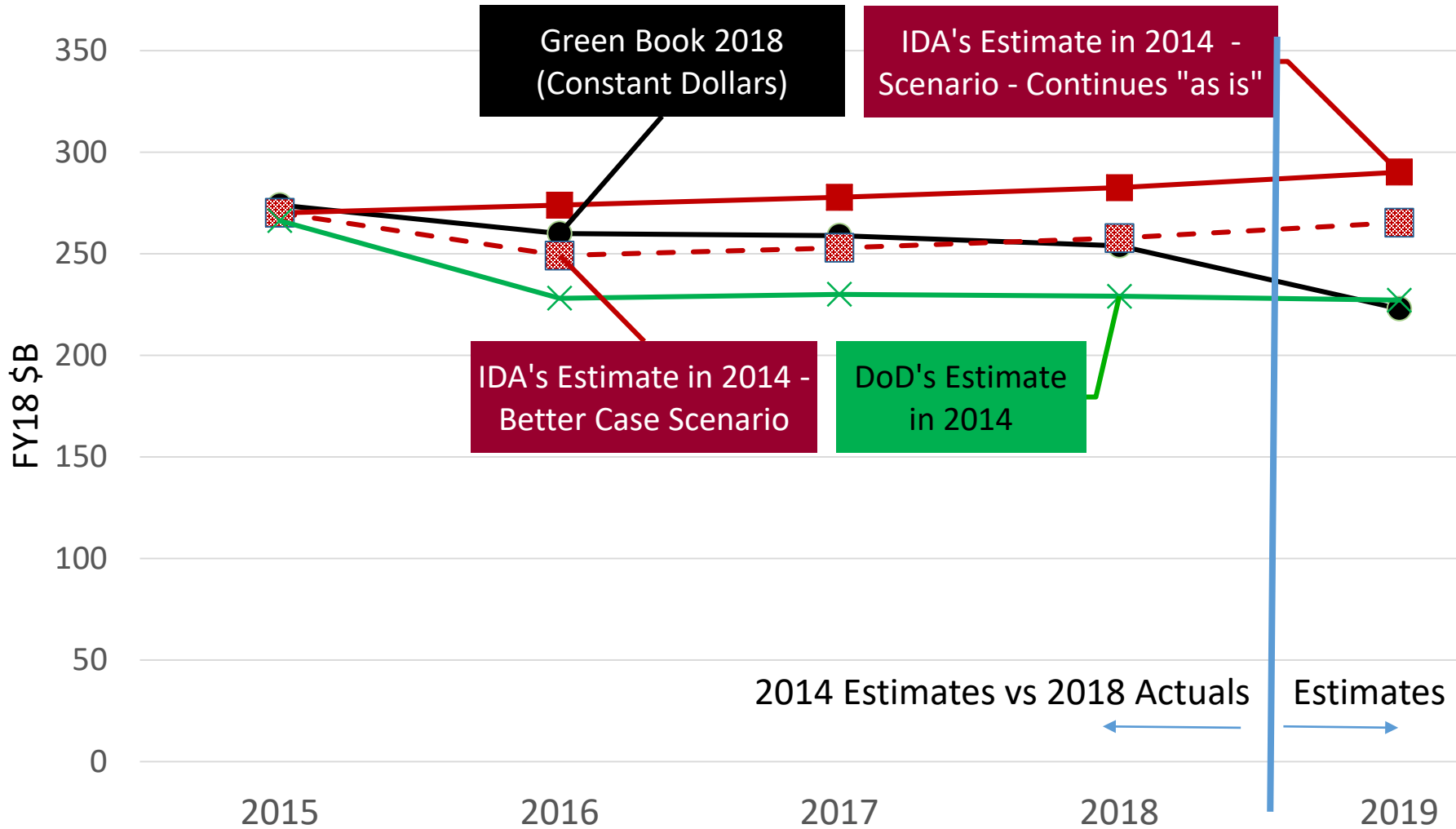
Model (\$B)	FY13	Delta	FY14	Delta	FY15	Delta	FY16	Delta	FY17	Delta	FY18	Delta	FY 19	Delta	FY14-19 Total Delta
Total O&M w/ OCO	264	(19)	270	(7)	279	(4)	239	(47)	241	(50)	240	(57)	238	(66)	(232)
Model Estimate	283		277		283		287		291		296		304		



- Model predicts a \$232 B shortfall in O&M budget starting in 2014 (\$426 B w/out OCO)
- Shifting deployed forces to United States reduces shortfall to \$100 B (including OCO)
- More than half of the shortfall is attributable to Defense-wide O&M



How We Did – Looking Backwards (Topline O&M – Includes Defense-wide)



This technique has been more significantly more accurate over time than FYDP projections from 1962 to present day