



**Calhoun: The NPS Institutional Archive**  
**DSpace Repository**

---

Acquisition Research Program

Acquisition Research Symposium

---

2017-03

# Use of Incentives in Performance-Based Logistics Contracting: Initial Findings

Hunter, Andrew; Ellman, Jesse

Monterey, California. Naval Postgraduate School

---

<https://hdl.handle.net/10945/58826>

---

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

*Downloaded from NPS Archive: Calhoun*



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

**Dudley Knox Library / Naval Postgraduate School**  
**411 Dyer Road / 1 University Circle**  
**Monterey, California USA 93943**

<http://www.nps.edu/library>



# **Use of Incentives In Performance Based Logistics Contracting**

**Jesse Ellman  
Defense-Industrial Initiatives Group  
Center for Strategic and International Studies**

**April 26, 2017**

**CSIS**

CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES



DEFENSE-INDUSTRIAL  
INITIATIVES GROUP

## Definitions of Performance Based Logistics (PBL)

- **Main Definition:** *“Performance-based logistics (synonymous with performance-based product support) achieve outcomes through performance-based arrangements that deliver Warfighter requirements and incentivize product support providers to reduce costs through innovation.”* (PBL Guidebook, “FAQ”, pg. 92)
- **Additional Phrasings:**
  - “...A sustainment strategy that delivers affordable readiness...”
  - “...integrate the various product support activities of the supply chain with incentives and metrics.”
  - “...compress the supply chain and improve readiness...” (2001 QDR)
  - “...to deliver needed reliability and availability, reduce total cost, and encourage and reward innovative cost reduction initiatives.”
  - “...affordably and effectively satisfy Warfighter requirements (e.g., reliability, availability) and reduce Operating and Support (O&S) cost.”

## Origin of Research Effort

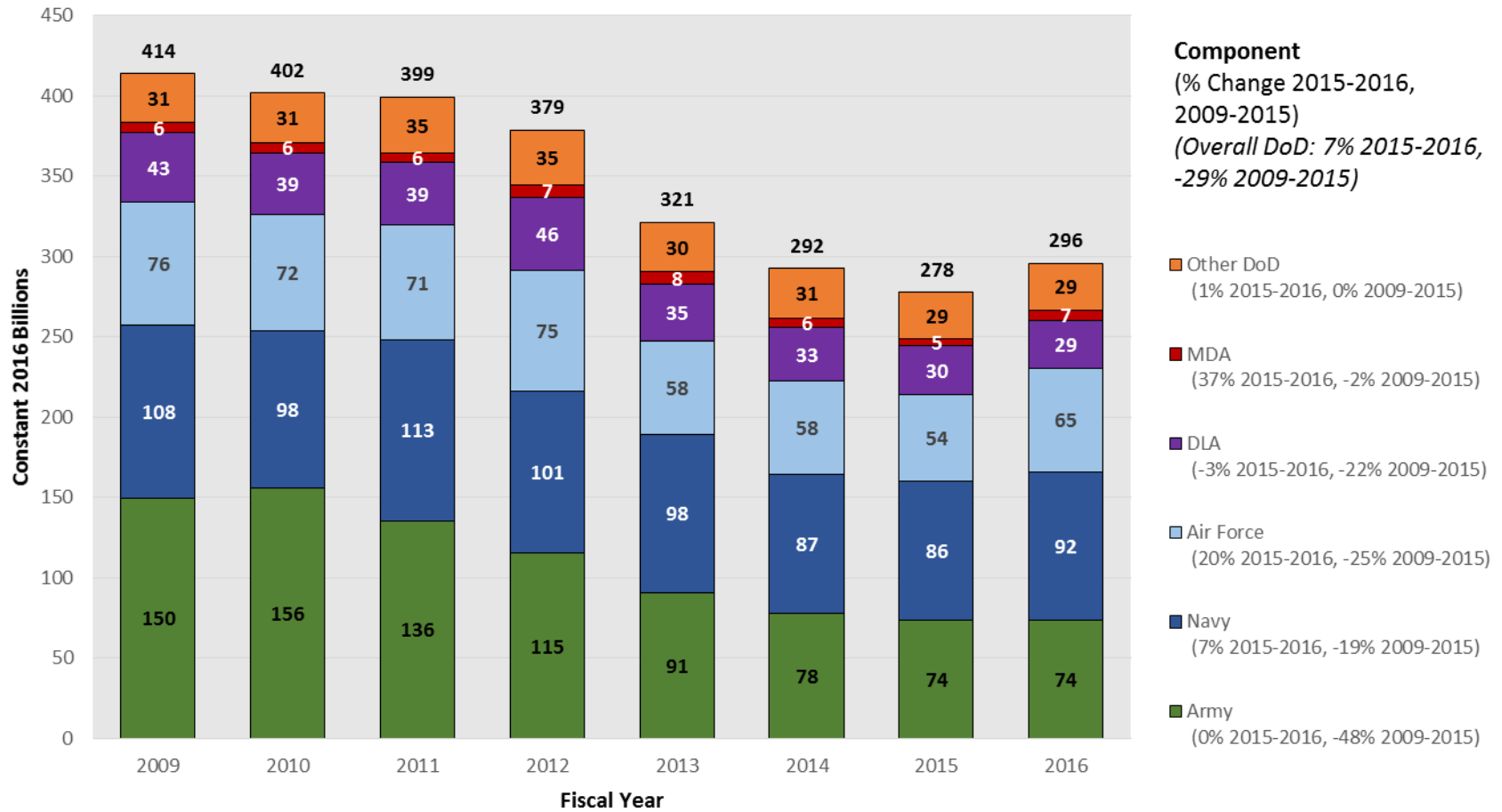
- This study is a successor to a previous CSIS study on PBL contracting, performed for the Defense Logistics Agency, which focused on both best practices for PBL contracting, as well as examining the addressable market for future use of PBL-type contracts.
- Link to prior report: <https://www.csis.org/analysis/performance-based-logistics>

# How DoD Currently Uses Performance-Based Logistics Contracts

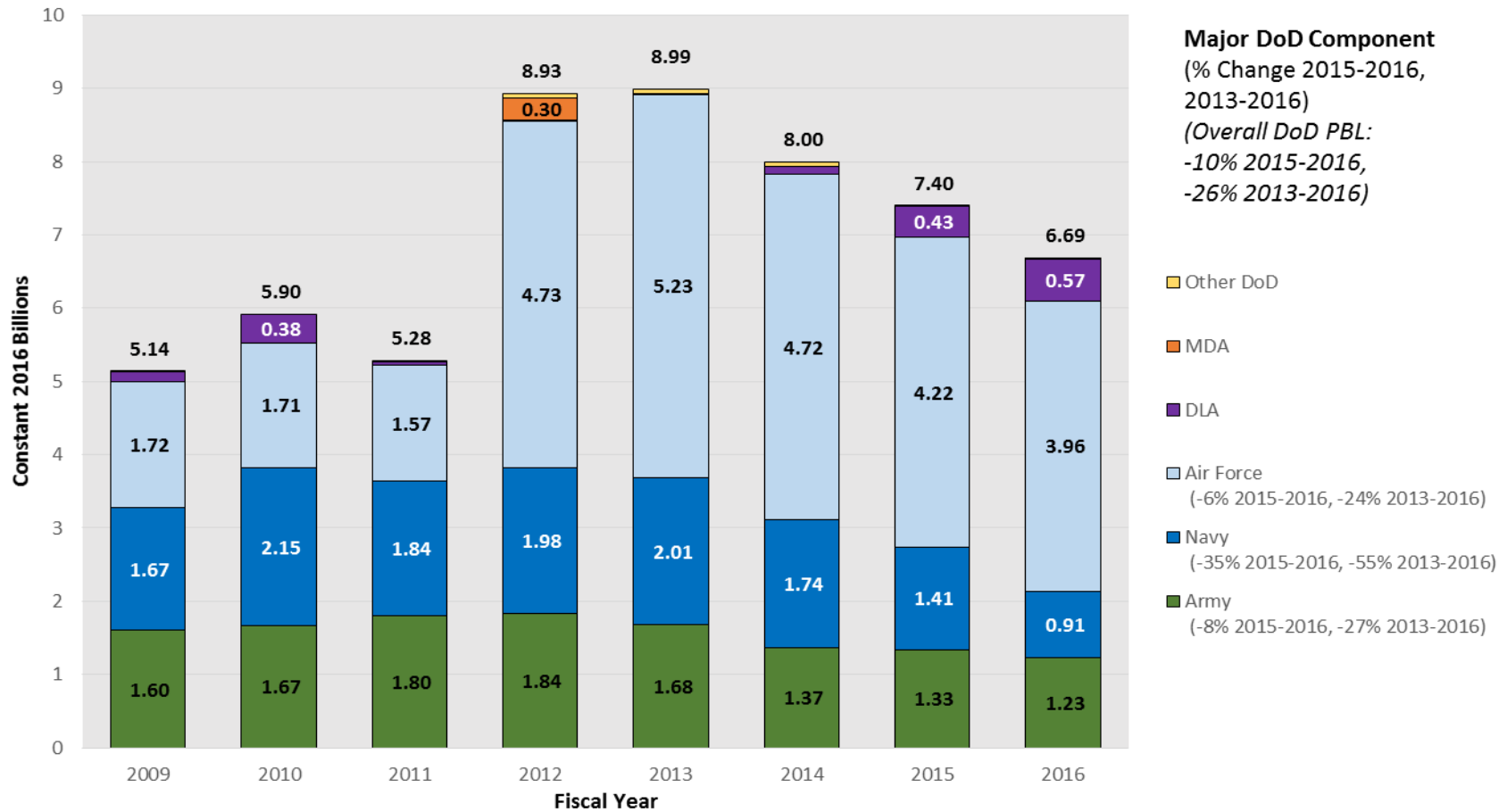
## Notes on Methodology

- The data for this analysis is drawn from the Federal Procurement Data System (FPDS), a publicly-available repository of federal contracting data.
- FPDS contains data on all prime, non-classified contracts over \$3,500 awarded by the federal government.
- FPDS contains no fields that systematically identify a contract as a PBL contract. CSIS has manually identified PBL contracts in FPDS based on a number of sources, including the ZBL system equipment code, federal contract solicitations, and contract award announcements.
- All dollar figures are in constant 2016 billions.

# The Six-Year Drawdown in Defense Contract Obligations Ended in 2016

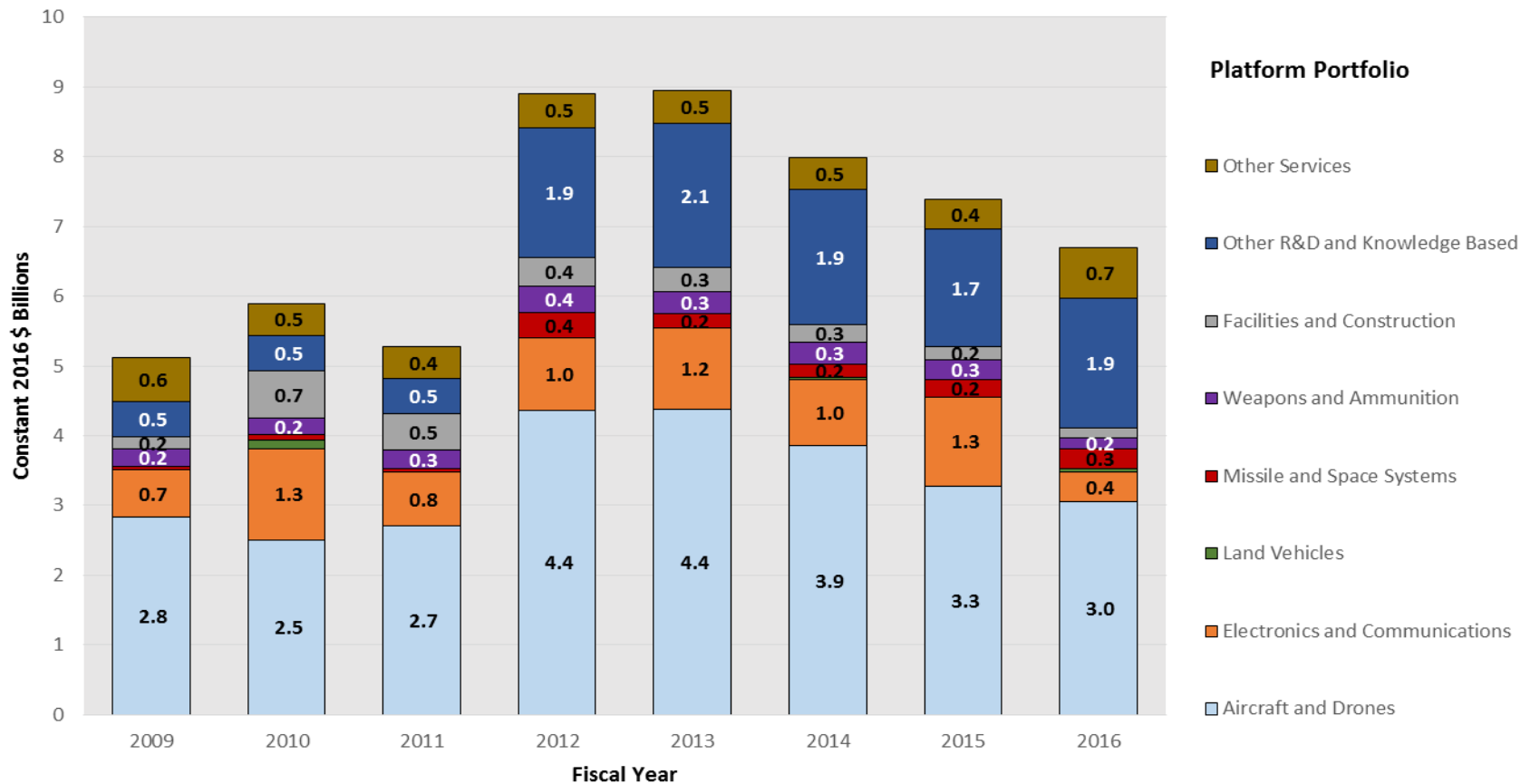


# DoD PBL Contract Obligations Decline at Three Times the Rate of Overall DoD Contracts since 2013

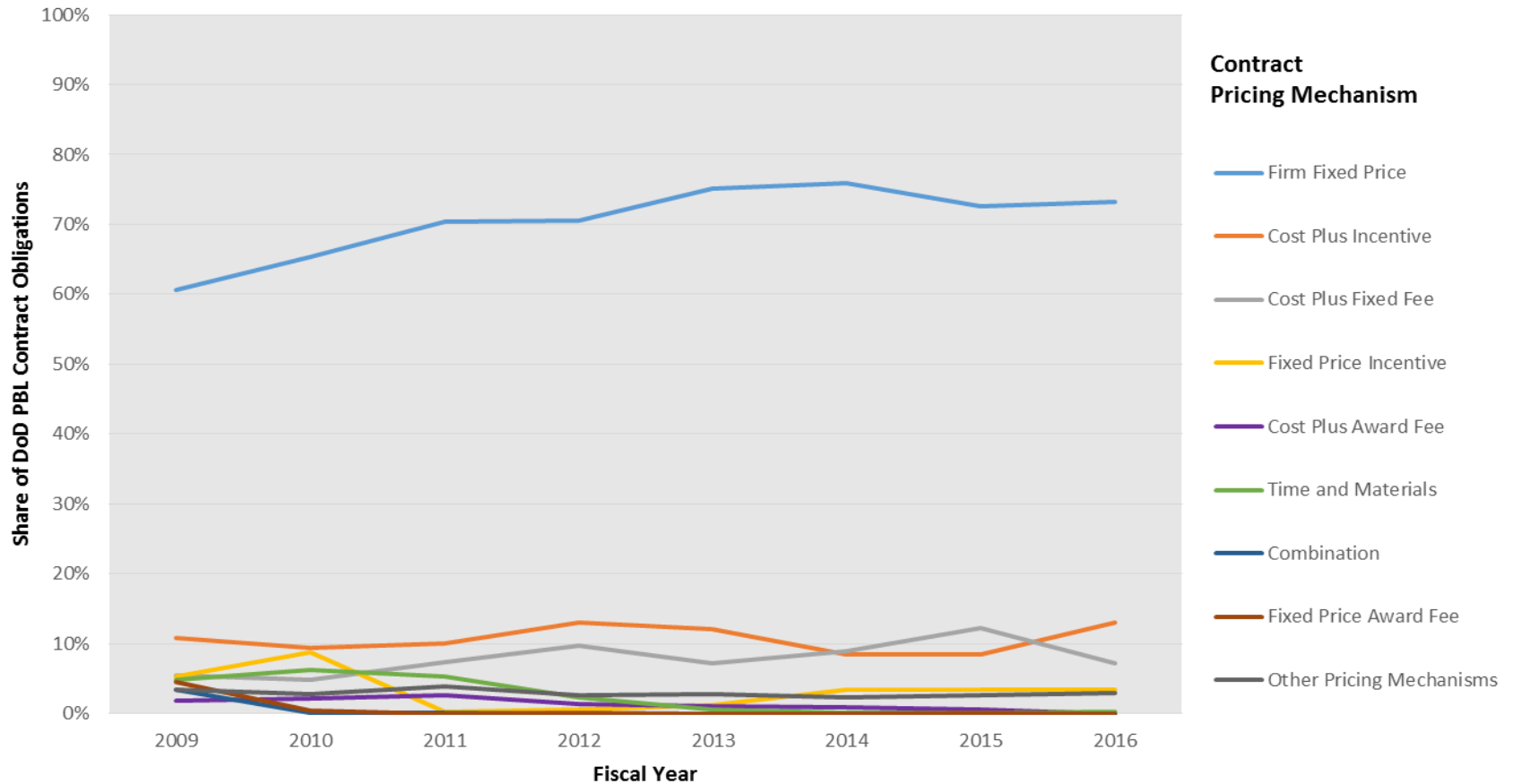




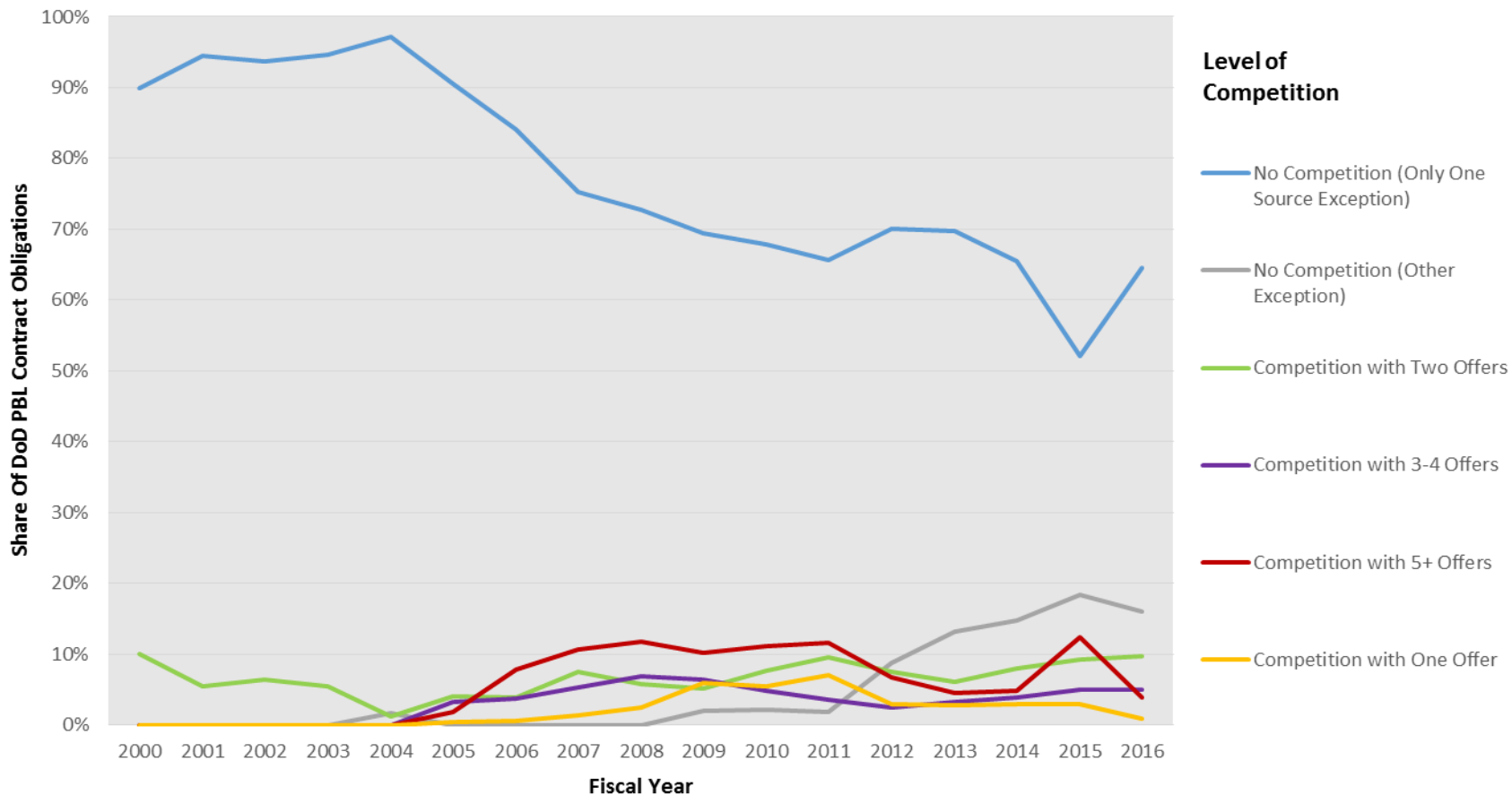
## Neither Land Vehicles Nor Ships & Submarines Have Seen Significant PBL Contracting



## A Significant Minority of DoD PBL Contract Obligations are Structured as Cost-Based Contracts



# Most DoD PBL Contracts are Awarded Without Competition



## The DoD PBL Contracting Market Has Grown Increasingly Concentrated Since 2009

Rank	Vendor	Total DoD PBL Contract Obligations 2009-2016	Share of Total DoD PBL Contract Obligations 2009-2016
1	Boeing	14.5	26%
2	L3 Communications	7.4	13%
3	Northrop Grumman	6.5	12%
4	Lockheed Martin	4.4	8%
5	General Electric	3.3	6%
	<b>Top 5 Total</b>	<b>36.1</b>	<b>64%</b>
6	Airbus	3.0	5%
7	General Dynamics	2.2	4%
8	Rolls Royce	2.2	4%
9	Maritime Helicopter Support [Lockheed Martin/Sikorsky Joint Venture]	1.8	3%
10	Bell-Boeing Joint Program Office	1.5	3%
11	Textron	1.5	3%
12	Raytheon	1.3	2%
13	General Atomics	1.2	2%
14	Honeywell	0.9	2%
15	Dyncorp International	0.5	1%
	<b>Top 15 Total</b>	<b>52.2</b>	<b>93%</b>
	<b>Overall DoD PBL</b>	<b>56.3</b>	

# Initial Interview Findings

## Interview Methodology

- CSIS has engaged with a number of experts with extensive experience in negotiating and managing PBL contracts with DoD.
- These experts are responsible for PBL contracts that span the range of PBL programs, from platform-level PBLs to system-level PBLs to component-level PBLs.
- While the initial interviews have focused on vendors performing PBL contracts for DoD, CSIS will also interview commercial PBL vendors and vendors performing for international government customers, as well as those international government customers.

## Incentives in a PBL Environment

- Incentives can take two forms in a PBL environment – explicit and implicit.
  - Explicit incentives are laid out as such in the contract:
    - Negative incentives – monetary penalties for not hitting performance metrics; contract termination for poor performance
    - Positive incentives – monetary bonuses for exceeding performance targets at specified levels; contract extension for good performance
  - Implicit incentives are other contract terms/structures that influence behavior
- Incentives can influence behavior in two main ways
  - Making a vendor more or less likely to sign on to a PBL contract
  - Influence behavior during contract performance, e.g. making a vendor more or less likely to invest money up front to improve performance under a PBL contract

## Key Findings from Initial Interviews

- Contract length is the most powerful incentive
- Negative monetary incentives are effective, even down to the subcontractor level
- Positive monetary incentives are not seen as effective or desirable.



## Contract Length is the Most Powerful Incentive

- Virtually every expert that CSIS has interviewed thus far has cited contract length as the most powerful incentive in a PBL environment.
- PBLs generate savings and performance improvements because vendors are incentivized to invest up-front in equipment and process improvements that allow them to meet performance targets and reduce costs. In theory, these up-front investment costs will be offset by profits in later years, but that assumes that there are later years to the contract.
- Experts cited 10 years as an ideal contract term, but while this is not uncommon overseas, 5 years is the maximum seen in the U.S., with shorter (or year-to-year) contracts being relatively common.
- This is exacerbated by the single-year budget process, which means that even a longer-term contract is inherently risky, as Congress could simply cut funding.

## Negative Monetary Incentives are Effective, Even Down to the Subcontractor Level

- There is broad agreement amongst experts that negative monetary incentives are effective in driving behavior.
- A main reason for this effectiveness is that the performance is, if not completely, then at least largely within the ability of the vendor to plan around and control.
  - Incentives tied to metrics that vendors had less control over, or were harder to predict, were less desirable due to the greatly increased risk profile.
- On some PBL contracts, vendors held their larger subcontractors responsible for performance-based penalties.
  - Smaller vendors, which could be wiped out by such penalties, were not similarly held responsible.

## Positive Monetary Incentives are not Seen as Effective or Desirable

- Experts interviewed felt that the reward for meeting positive monetary incentives was rarely worth what it cost to drive up performance to meet those incentives.
  - Predicting the cost of meeting higher performance targets is particularly difficult, so properly pricing the associated monetary incentive can be challenging.
  - The government is often reluctant, if not unwilling, to agree to incentive levels high enough to make hitting the higher performance target potentially profitable.
  - Less than 5 percent of DoD PBL contract obligations feature positive monetary incentives as a core feature of the contract structure, but a larger percentage likely include some positive monetary incentives.

## Other Findings of Note

- The government has an incentive to keep a certain percentage of work in-house, and vendors are hesitant to work with government subcontractors whose performance they are responsible for but cannot control.
- Vendors are hesitant to try to compete for existing PBLs, because of the perceived difficulty of dethroning incumbents.
- Some vendors expressed skepticism of “power-by-the-hour” PBL arrangements, due to number of hours frequently coming in below projections.