# Analysis of Department of Defense (DoD) Spending on Ground Combat Systems (GCS) from FY2016-2020

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## Overview

This report analyzes U.S. Department of Defense (DoD) contract spending from Fiscal years 2016 through 2020. More specifically, it looks at three major GCS programs, specifically, the Abrams tank, Bradley fighting vehicle, and the Stryker armored personnel carrier. It assesses spending trends per program, key vendors, contracting office spend, and an overview of contract purchases.

Analyzing and understanding this data may help highlight where the DoD is spending and inform where they may want to reallocate funds.

## Methodology

Due to the nature of the data, I had to use a couple different methods to preprocess and prepare the data for analysis:

Data Cleaning and Filtering:

* The data was filtered down by focusing exclusively on DoD contracts, FY2016-2020, and contracts related to the GCS programs. I also excluded any data that omitted the ‘Awarded Amount’ value, since those rows couldn’t be used in financial analysis.
* Vendors Top Names contained many similar, but different values, which needed to be corrected so we could ensure total award amounts were correct. This was accomplished by using fuzzy matching, which groups similar names together.

## Key Findings

##### Spending Trends by GCS Program

The following graphic below shows spending trends by fiscal year and GCS program. Some key takeaways include:

* Abrams had the highest total spending by large margin, at $5.7B, with a large spike and steady spend during FY2017 and beyond. This could be due to a few reasons, but it looks like Abrams had some modernization programs kick off around that time.
* Stryker spending was steady and totaled around $1.9B over the course of our analysis, peaking in FY2019. The steady spend could be due to maintenance costs, and the peak could be for a few different reasons, including new variants, modernization, or increased maintenance costs.
* Bradley investments were a bit more variable than Stryker and totaled out to around $1.7B. With peak spending coming at the same time for Abrams, this uptick is likely due to modernization efforts.

A graph with lines and numbers

AI-generated content may be incorrect.

##### Key Vendors

A few different contractors dominated the total contract award amounts, with General Dynamics receiving more than triple the next closest vendor.

This is likely because General Dynamics owns and manufactures both Abrams and Stryker, the two programs with the highest spend.

BAE Systems comes in second, as the owner and manufacturer of the Bradley platform.

A bar graph with blue and white bars

AI-generated content may be incorrect.

##### Other Findings

The top 3 contracting offices included 0646 AQ TM CONTRACTING TEA – APO (had trouble finding CO name), US Department of the Army, and DLA Land – Warren. 0646 AQ TM CONTRACTING TEA – APO had by far the most spending, indicating that most of the contract spend was centralized through that contracting office.

For PSC Categories, most of the spending was focused on vehicle components. There was also a large chunk of spending on systems engineering, technical assistance, and other services.

## Key Takeaways

Each program seems to be at a different stage in its lifecycle.

* Abrams is seeing heavy investment in modernization, and it looks like that will stay steady heading into future fiscal years.
* Bradley and Stryker both seem to be in a more maintenance cycle, with Bradley seeing some uptick in recent years likely due to modernization efforts.

The top vendors and contracting office are also clear, which could pose a risk of increased pricing and reliance on one or two top vendors.

## References

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