

What Is DoD Buying?

Defense Acquisition Trends 2020

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This paper analyzes the trends in what DoD is buying using data from the Federal Procurement Data System (FPDS). It examines the trends in where defense contract spending is heading and whether those trends align with the priorities outlined in the 2018 National Defense Strategy (NDS). Specifically, this brief examines the key trends in defense spending on products, services, and research and development (R&D), and by platform portfolio.

Previous CSIS analysis of the fiscal year 2019 topline DoD trends showed key trends emerging in the defense acquisition enterprise as it sets out to undergo perhaps “the most transformational acquisition policy change we’ve seen in decades.”¹ The analysis found that defense contract obligations continue to grow; technology development has continued to shift toward Other Transaction Authorities (OTA) and away from traditional acquisition approaches. However, this shift in approach only resulted in mixed trends in platform portfolios corresponding to the 2018 National Defense Strategy (NDS) priorities. This paper builds on that analysis in order to explore in greater detail the trends in what DoD is buying within industry sectors.

This report covers prime unclassified contract obligations and employs the standard methodology used in CSIS reports on federal contracting. For over a decade, the CSIS Defense-Industrial Initiatives Group (DIIG) has issued a series of analytical reports on federal contract spending for national security by the government. These reports are built on Federal Procurement Data System (FPDS) data, which is downloaded in bulk from USAspending.gov. DIIG maintains its own database of federal spending, which includes data

from 1990 to 2019. This database is a composite of FPDS and DD350 data. For this report, the study team relied on FY 2000–FY 2019 data. All dollar figures are in constant FY 2019 dollars, using the latest Office of Management and Budget (OMB) deflators. For additional information about the CSIS contracting data analysis methodology, see <https://github.com/CSISdefense/Lookup-Tables>.

For this paper, CSIS focused on the following research questions:

- Area: What are the key trends in the defense products, services, and research and development (R&D) sectors?
- Products: What are the key trends in the defense products?
- Services: What are the key trends in the defense services sector?
- Platform Portfolio: Have there been significant shifts within critical sectors of the defense industrial base?

AREA

As detailed in prior CSIS analysis of contract data, there has not yet been a significant shift in the DoD’s investment posture toward the emerging technologies emphasized

in the 2018 NDS.² However, FY 2019 defense contract data does show some emergent shifts in the composition of the DoD’s investment portfolio. Defense products, which had seen the largest gains during the beginning of the defense contracting rebound, slowed down—increasing just 3 percent last year, a rate in line with the total growth of the defense contracting rebound. Defense services continued its growth path from last year, increasing 13 percent in FY 2019, a rate significantly above the total growth in defense contracting. Finally, defense R&D contract obligations increased 13 percent in FY 2019. Overall, if including both R&D contract and defense OTA obligations, defense R&D spending increased 22 percent in FY 2019. This is consistent with the observation in CSIS’s FY 2018 analysis, which showed that technology development has been shifting decisively toward OTAs and away from traditional acquisition approaches.

Technology development has been shifting decisively toward OTAs and away from traditional acquisition approaches.

PRODUCTS

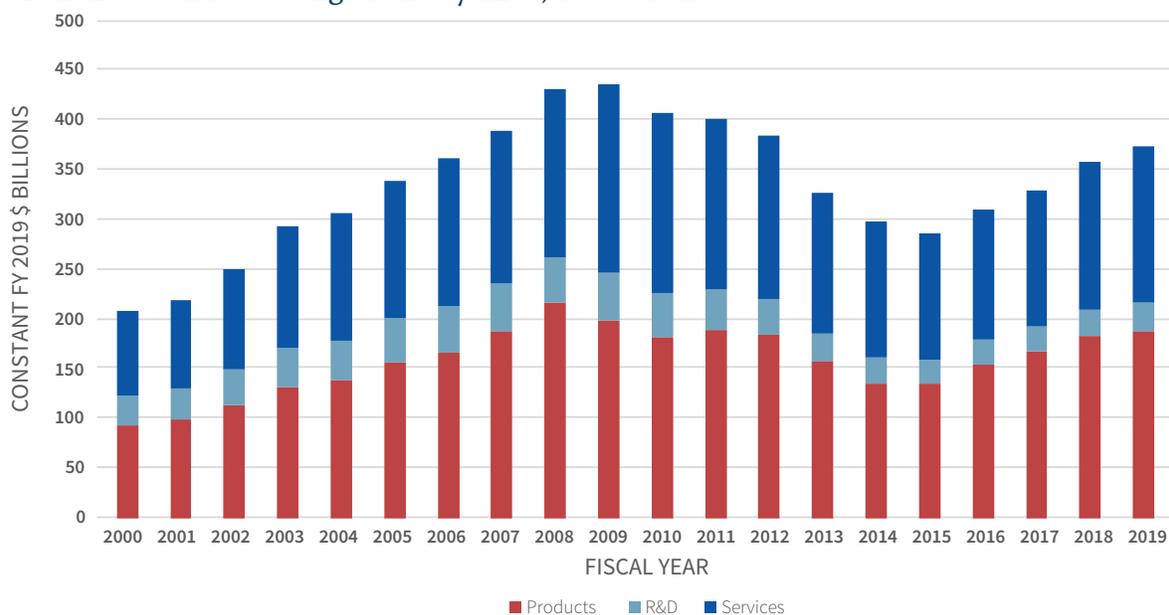
Over the course of the defense drawdown, products have seen the largest growth in spending, increasing 39 percent between FY 2015 and FY 2019.

The recent trends in spending on defense products show a few emerging trends, notably in the areas of engines and power plants, clothing and subsistence, and fuels.

Defense spending on engines and power plants increased 23 percent in FY 2019, rising from \$13.3 billion to \$16.4 billion. Between FY 2015 and FY 2019, defense engines and power plants spending increased from \$8.93 billion to \$16.38 billion, an 83 percent increase. In a recent report on aircraft engines, CSIS found a persistent sawtooth pattern in engine spending, likely driven by large buys for the F-35 program that do not fall neatly on an annual timeframe. This category is broader than aircraft engines alone, however. The two years of strong growth break that trend and represent a return to the heights of engine spending at the start of this century.³ This growth comes at a critical time for the military engine industrial base, which is at an inflection point, and which is experiencing substantial turmoil on the commercial side as detailed in depth in the recent report.

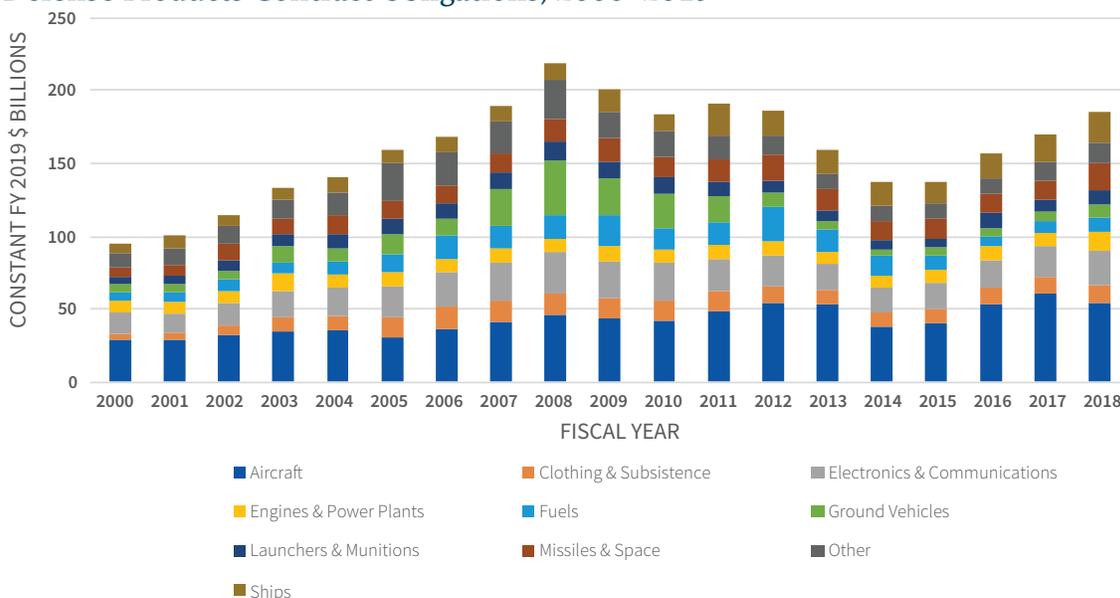
Defense clothing and subsistence spending declined 1 percent in FY 2019, a dip in spending in an area that had been previously rising. Despite this dip, between FY 2015 and FY 2019, defense clothing and subsistence spending increased 19 percent, rising from \$10.26 billion in FY 2015 to \$12.23 billion in FY 2019.

Figure 1: Defense Contract Obligations by Area, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

Figure 2: Defense Products Contract Obligations, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

Defense spending on fuels has been on the decline over the course of sequestration and the defense drawdown, declining 18 percent between FY 2015 and FY 2019. Defense spending on fuels did increase between FY 2017 and FY 2018 only to decline 21 percent last year. DoD spending on fuels has always been cyclical, but spending is down across the board. This is likely due to a combination of oil prices and reduced overseas operations as DoD fuel use is heavily driven by aircraft. Given these trends, it is likely that defense spending on fuels is likely to remain flat to declining in the coming years.

SERVICES

Defense services contract obligations increased 5 percent in FY 2019, rising from \$151.97 billion to \$159.65 billion. This continued the ongoing trend of increasing spending on services across DoD in recent years. Between FY 2015 and FY 2019, defense services contract obligations increased 23 percent.

Equipment-related services (ERS) saw near-minimal growth from the previous year, going from \$29.4 billion in FY 2018 to \$29.5 billion in FY 2019. As a result, ERS went from 19 percent of DoD services contract obligations to 18 percent. Between FY 2015 and FY 2019, defense ERS contract obligations increased 23 percent.

Facilities-related services and construction (FRS&C) experienced the largest growth among all services categories in FY 2019, increasing 11 percent from FY 2018. Total defense FRS&C contract obligations rose from \$37.7 billion in FY 2018 to \$41.8 billion in FY 2019, their highest levels in the last

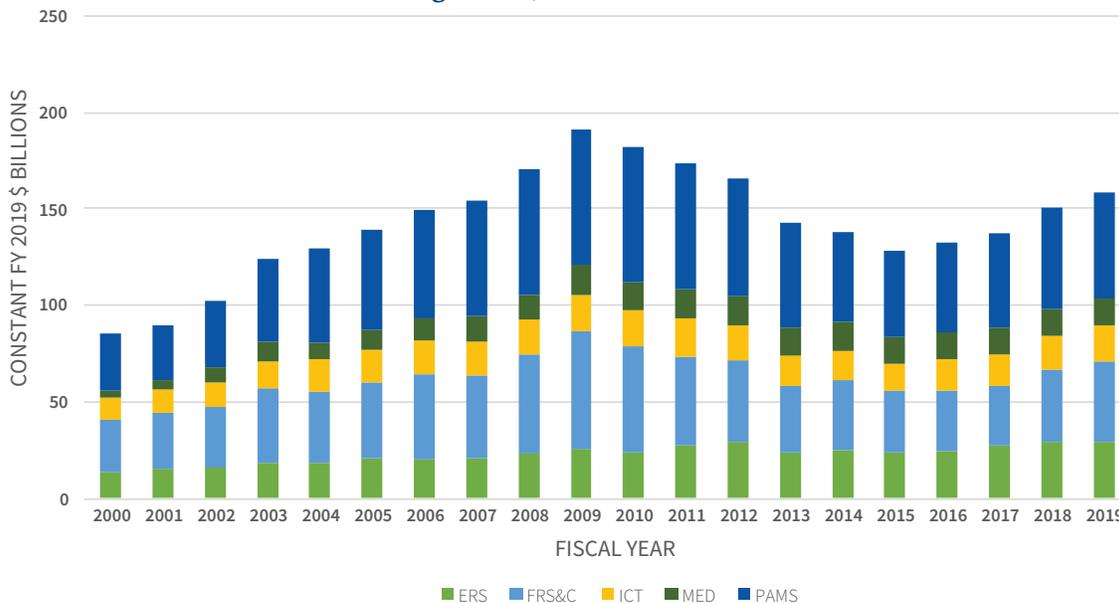
seven years. Between FY 2015 and FY 2019, defense FRS&C contract obligations increased 31 percent.

Information communication technologies (ICT) contract obligations continued to steadily grow in FY 2019. This growing demand also reflects pressures on the DoD organic workforce as discussed in a recent CSIS report on talent management for the technical workforce in areas such as cyber and artificial intelligence.⁴ This steady growth highlights the need to better understand the roles for science, technology, engineering, and math workers across DoD. Defense ICT contract obligations totaled \$18.9 billion last year, a 5 percent increase from the \$17.9 billion spent in FY 2019. Between FY 2015 and FY 2019, defense ICT contract obligations increased 31 percent, a rate well above the 23 percent growth in total defense services.

Medical (MED) contract obligations leveled off in FY 2019 after years of steady growth. MED contract spending had been gradually growing between FY 2015 and FY 2017 but experienced a slight dip in FY 2018 before remaining constant at \$14.2 billion in both FY 2018 and FY 2019. Between FY 2015 and FY 2019, defense MED contract obligations rose from \$13.6 billion to \$14.2 billion, a 5 percent increase.

Professional, administrative, and management support (PAMS), the largest defense services category, experienced growth in line with the overall growth rate of defense services. Defense PAMS contract obligations increased from \$52.8 billion in FY 2018 to \$55.4 billion, a 5 percent increase. Between FY 2015 and FY 2019, defense PAMS contract

Figure 3: Defense Services Contract Obligations, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

obligations increased 21 percent, a rate slightly below the overall defense services growth rate.

Figure 3 shows defense contract obligations by services category between FY 2000 and FY 2019.

R&D

Previous CSIS research for FY 2018 shows that “[the] DoD has made some recovery in its development pipeline for major weapon systems, but recovery has been uneven across the different R&D activities.”⁵ The FY 2019 data show that R&D contracting for the early and middle stages of the development pipeline for major weapon systems have recovered, but that this is not the case for later stages.

In the earliest stages, sometimes referred to as seed corn investments, defense basic research (6.1) contract obligations increased from \$3.77 billion in FY 2018 to \$3.95 billion in FY 2019, a 5 percent increase. Defense applied research (6.2) contract obligations increased 11 percent in FY 2019, rising from \$7.02 billion to \$7.78 billion. Defense basic research and applied research contract obligations both increased 18 percent between FY 2015 and FY 2019.

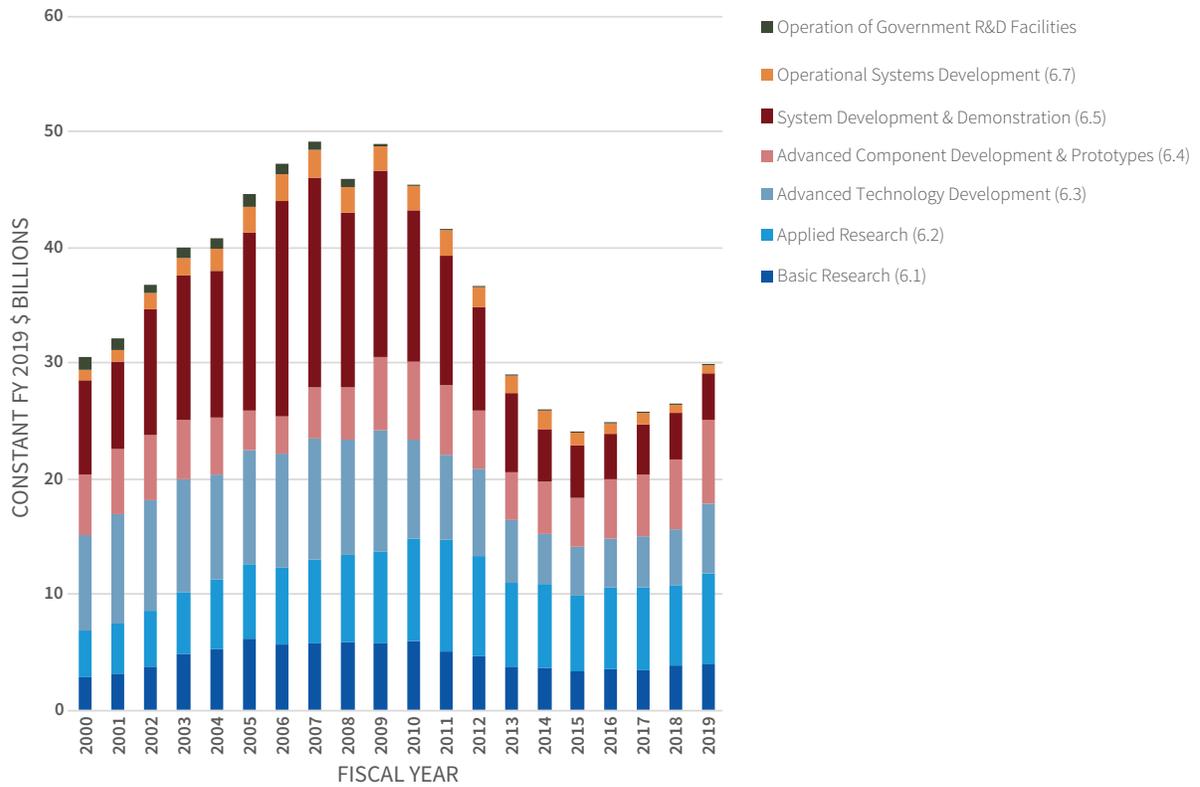
Both of the mid-stage R&D activities, advanced technology development (6.3) and advanced component development and prototypes (6.4), continued to grow at rates greater than the overall growth in defense R&D contract obligations. Advanced technology development (6.3) contract obligations increased from \$4.80 billion in FY 2018 to \$6.05 billion in FY 2019, a 26 percent increase. Advanced component development and prototypes contract obligations increased

21 percent in FY 2019, rising from \$6.03 billion to \$7.27 billion. Between FY 2015 and FY 2019, advanced technology development and advanced component development and prototypes contract obligations increased 44 percent and 73 percent respectively.

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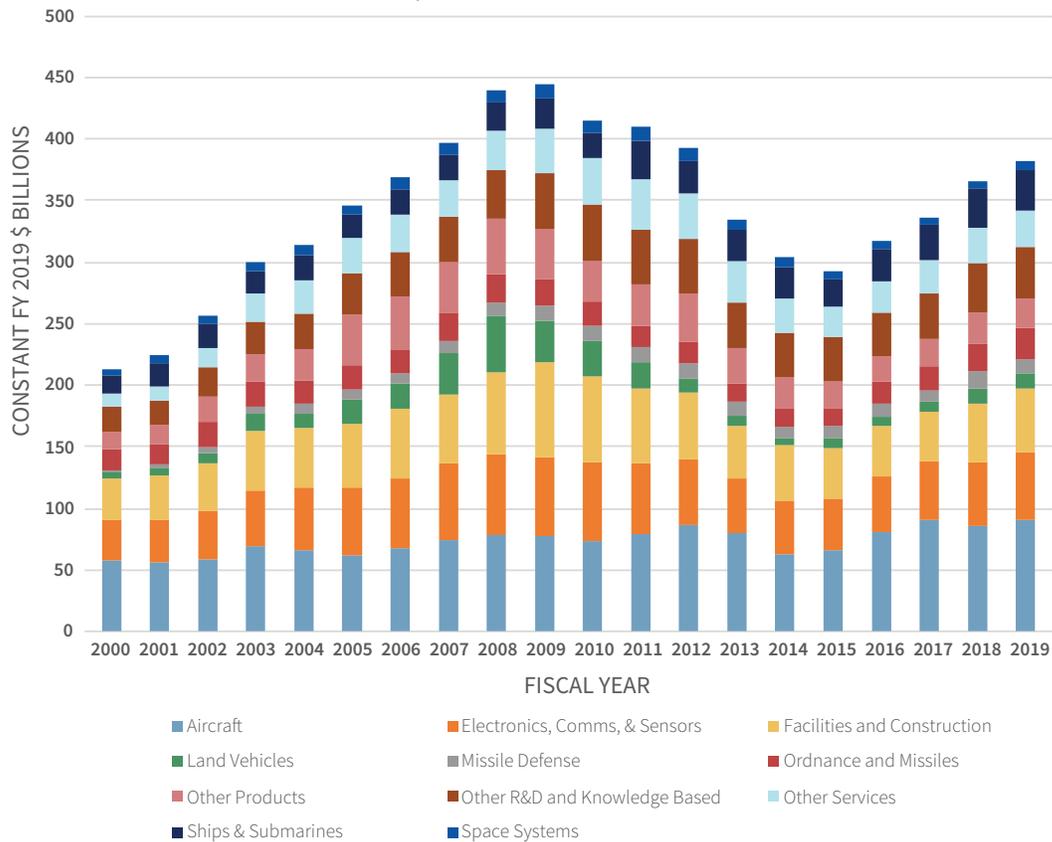
System development and demonstration (6.5) and operational systems development (6.7) remained relatively flat in FY 2019. System development and demonstration contract obligations totaled approximately \$4.1 billion in FY 2018 and FY 2019, while those for operational systems development totaled approximately \$0.7 billion in the past two years. Between FY 2015 and FY 2019, system development and demonstration and operational systems development contract obligations have declined 10 percent and 34 percent respectively. The FY 2019 data remains consistent with the idea that the acquisition of R&D is undergoing a transformation; however, it is too soon to tell what results have been delivered by the new system. The middle tier of acquisition debuted in the FY 2016 National Defense Authorization Act and was further embedded in

Figure 4: Defense R&D Contract Obligations, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

Figure 5: Defense Contract Obligations by Platform Portfolio, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

law and regulation in subsequent years. Programs in that tier are expected to demonstrate capabilities within two to five years, and the rise in advanced component development and prototypes is consistent with the goals and methods of the middle tier. However, the disparate trends suggest that this recent crop of programs may be having difficulty making the transition to production. This question will merit further attention as middle-tier and OTA-based programs work their way into the system but may indicate that previous CSIS findings that “reforms which decentralize OSD oversight do not appreciably decrease MDAP cycle time” may apply to middle-tier programs as well.⁶

Figure 4 shows defense contract obligations by stage of R&D from FY 2000 to FY 2019.

PLATFORM PORTFOLIO

The data show mixed trends for the platform portfolios emphasized in the NDS: air and missile defense, nuclear, space, cyberspace, and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR), and critical sectors like land vehicles.

AIRCRAFT

Since the onset of sequestration and the defense drawdown and subsequent contracting bounce back, there has been a continuous whipsaw between growth and decline in aircraft. Over the last four years, aircraft defense contract obligations rose from \$65.7 billion in FY 2015 to \$79.9 billion in FY 2016, then further rose to \$89.9 billion in FY 2017, before falling

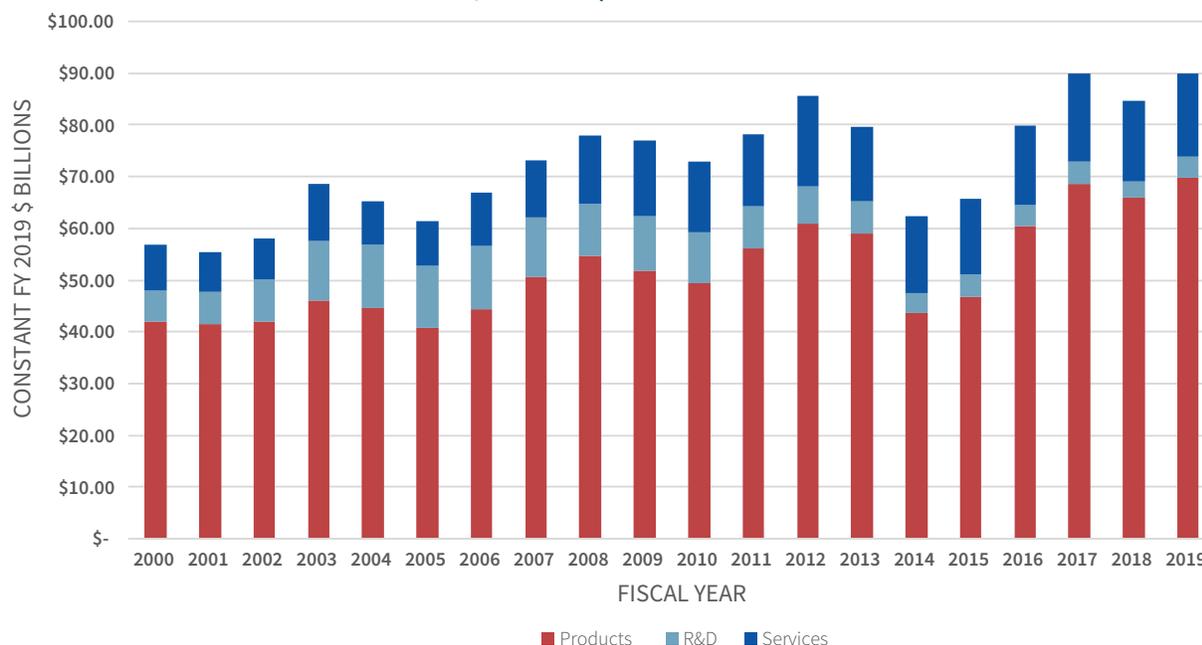
to \$84.8 billion in FY 2018 and then rising to \$90.0 billion in FY 2019. In total over the course of the defense contracting rebound, aircraft contract obligations have increased 37 percent since FY 2015, a rate higher than topline growth (31 percent). However, the data show that this growth trend is less pronounced within different areas of the aircraft industrial base.

Aircraft products increased 6 percent last year, rising from \$66.0 billion in FY 2018 to \$69.7 billion in FY 2019. Between FY 2015 and FY 2019, aircraft products increased 49 percent. Unlike the overall platform portfolio, this growth was marked by continuous growth year-to-year except for a 4 percent decline between FY 2017 and FY 2018. Products rose as a share of defense aircraft spending from 71 percent in FY 2015 to 77 percent in FY 2019.

Defense aircraft R&D spending has been trending slightly downward since FY 2015. Defense aircraft R&D spending declined from \$4.3 billion in FY 2015 to \$3.0 billion in FY 2018 before rising 39 percent last year to \$4.2 billion. Although defense aircraft R&D spending is down 1 percent from where it was in FY 2015, it remains to be seen if the return to growth in FY 2019 was merely a return to previous spending levels or the start of a new growth period of aircraft R&D spending.

Defense aircraft services spending has been the most volatile of the three areas over the course of the defense contracting rebound. Defense aircraft services contract obligations grew rapidly over the first three years of the defense contracting

Figure 6: Defense Aircraft Contract Obligations by Area, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

rebound before declining in FY 2018. Defense aircraft services contract obligations increased 6 percent last year, but like aircraft R&D, it remains to be seen if this growth is merely an illusion or the start of a new growth period.

Figure 6 shows defense aircraft contract obligations between FY 2000 and FY 2019.

SPACE SYSTEMS

Space systems, the obligation rate for which had been previously flat or slightly declining over the defense contracting bounce back, saw substantial growth in defense contract obligations in FY 2019. Space systems contract obligations increased from \$6.1 billion in FY 2018 to \$7.3 billion in FY 2019, a 20 percent increase. In spite of this, contract obligations remain lower than the levels seen before sequestration and the defense drawdown.

Spending on space systems products has been volatile over the course of the defense contracting bounce back, reflecting the trends in most of the platform portfolio. After falling precipitously in FY 2015, space systems products grew before sharply falling again in FY 2017. Since FY 2017, space systems products have started to rebound, increasing 93 percent between FY 2018 and FY 2019. However, space systems products contract obligations are still down 2 percent between FY 2015 and FY 2019.

Comparatively, space systems R&D spending has been on a steady growth path since FY 2015. Between FY 2015 and FY 2019, space systems R&D contract obligations increased

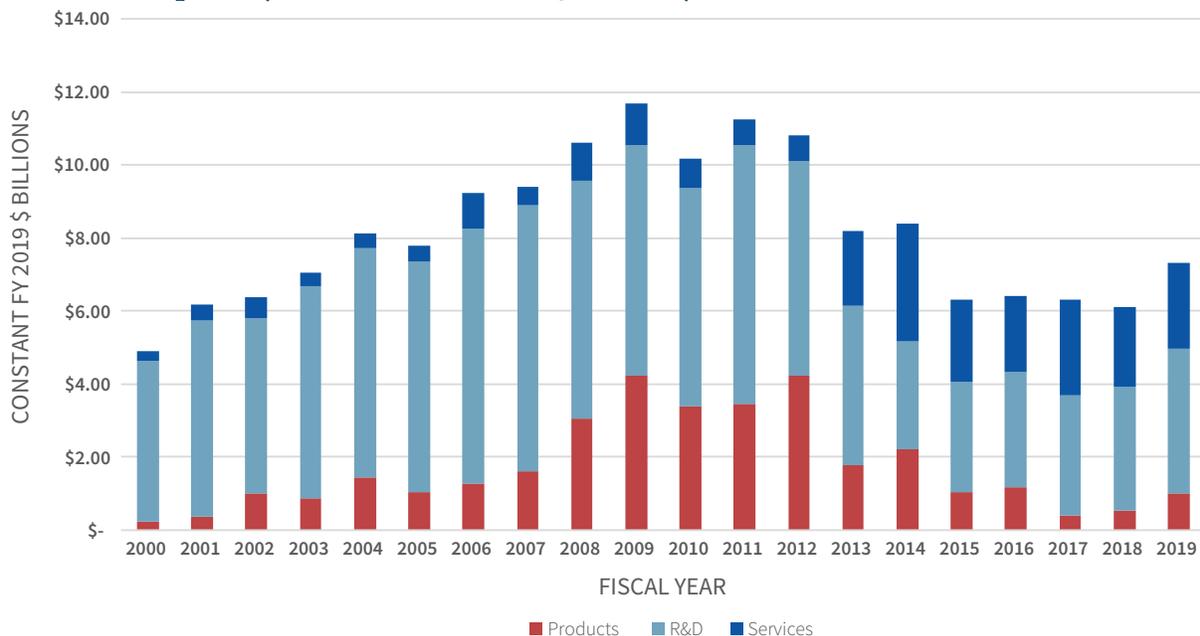
from \$3.1 billion to \$4.0 billion, a 30 percent increase. Last year, space systems R&D contract obligations increased from \$3.4 billion to \$4.0 billion, a 30 percent increase.

Space systems services spending has been up and down over the course of the defense contracting bounce back but not to the same extent as space systems products spending. Space systems services contract obligations increased 6 percent last year, going from \$2.2 billion in FY 2018 to \$2.3 billion in FY 2019. Overall, space systems services contract obligations are up 4 percent between FY 2015 and FY 2019.

LAND VEHICLES

The land vehicles sector has seen significant pressures in recent years as a result of sequestration and the defense drawdown. Previous CSIS analysis found that land vehicles was the “sector heaviest hit by sequestration and the defense drawdown,” while DoD’s own analysis found that “budget fluctuations, program uncertainty and manufacturer capacity constraints have created a ‘fragile market’ for military ground vehicles.”⁷⁷ Last year, after years of steady, but slow, growth, land vehicles contract obligations plateaued. In FY 2019, land vehicles contract obligations totaled \$12.95 billion compared to \$12.89 billion in FY 2018. Between FY 2015 and FY 2019, land vehicles contract obligations increased 62 percent from \$7.98 billion to \$12.95 billion. While total land vehicles spending plateaued, there were differences within products, services, and R&D spending.

Figure 7: Defense Space Systems Contract Obligations by Area, 2000–2019



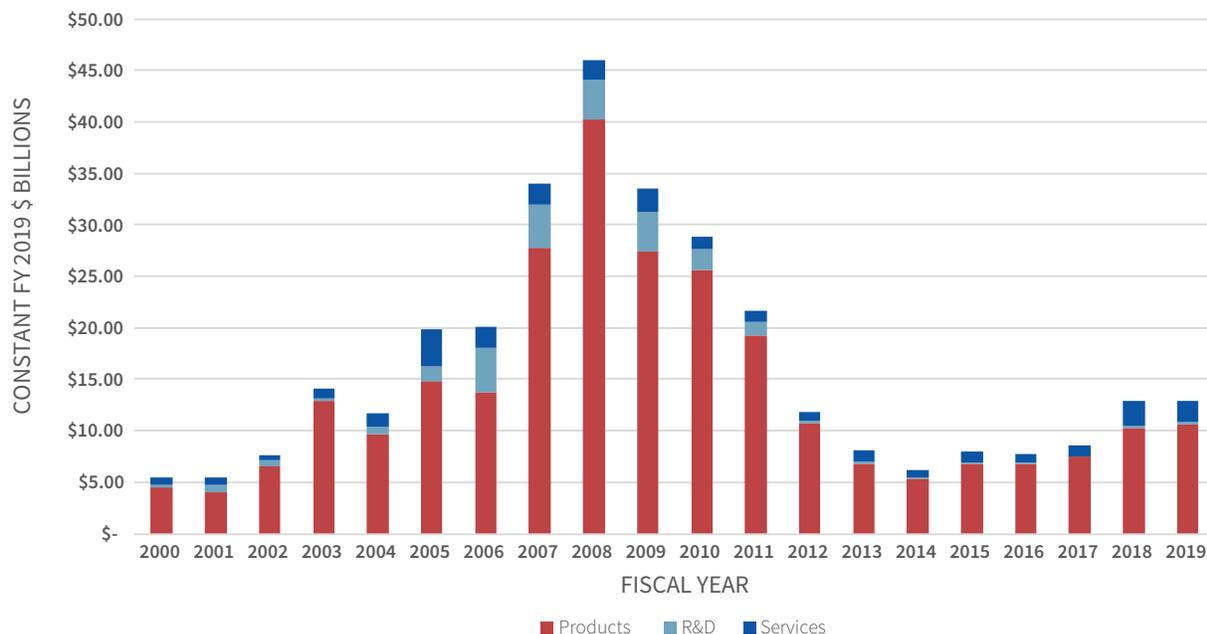
Source: Federal Procurement Data System; CSIS analysis.

Although total land vehicles spending plateaued last year, land vehicles products contract obligations continued to grow in FY 2019. Land vehicles products contract obligations increased from \$10.23 billion in FY 2018 to \$10.64 billion in FY 2019, a 4 percent increase. As a share of land vehicles products contract obligations, products rose from 79 percent to 82 percent but still below its historical average share. Between FY 2015 and FY 2019, defense products contract obligations increased 58 percent.

Land vehicles R&D contract obligations declined 9 percent between FY 2018 and FY 2019. Land vehicles R&D contract obligations totaled \$0.26 billion in FY 2019 compared to \$0.29 the previous year. Despite the decline last year, land vehicles R&D contract obligations are up 87 percent between FY 2015 and FY 2019.

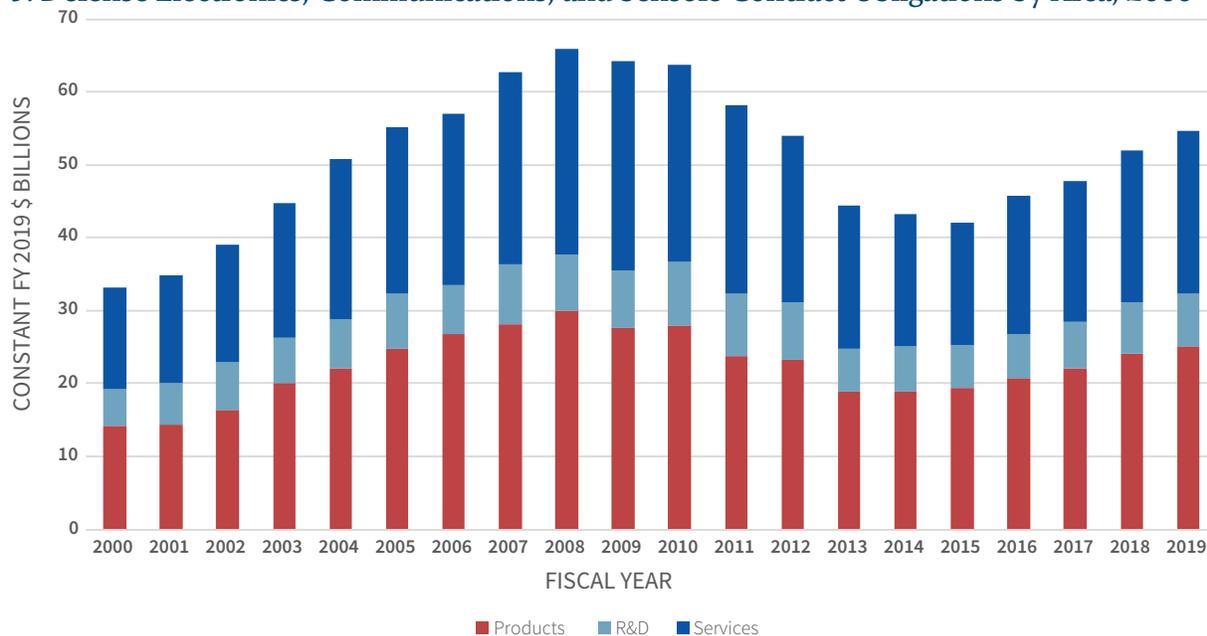
Land vehicles services contract obligations declined 14 percent between FY 2018 and FY 2019. Land vehicles

Figure 8: Defense Land Vehicles Contract Obligations by Area, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

Figure 9: Defense Electronics, Communications, and Sensors Contract Obligations by Area, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

services contract obligations fell from \$2.37 billion to \$2.05 billion. However, similar to land vehicles R&D, land vehicles services contract obligations are up 86 percent between FY 2015 and FY 2019 despite falling last year.

ELECTRONICS, COMMUNICATIONS, AND SENSORS

Electronics, communications, and sensors (EC&S) once again increased in FY 2019, continuing their constant steady growth throughout the defense contracting rebound. EC&S contract obligations increased 5 percent in FY 2019, a rate in line with the topline growth, going from \$52.0 billion in FY 2018 to \$54.7 billion in FY 2019. Between FY 2015 and FY 2019, EC&S contract obligations have increased 30 percent. The trends show that EC&S spending is up across the entire platform portfolio.

Defense EC&S Products contract obligations totaled \$25.1 billion in FY 2019, a 4 percent increase from the \$24.1 billion spent in FY 2018. Between FY 2015 and FY 2019, defense EC&S products contract obligations increased from \$19.4 billion to \$25.1 billion, a 29 percent growth. Both the 4 percent increase last year and 29 percent growth between FY 2015 and FY 2019 were rates just below the overall rate of growth in the platform portfolio.

Defense EC&S R&D contract obligations increased 4 percent last year, rising from \$7.0 billion in FY 2018 to \$7.3 billion in FY 2019. Between FY 2015 and FY 2019, defense EC&S contract obligations increased from \$5.8 billion to \$7.3 billion, a 26 percent increase. While the 4 percent

growth in defense EC&S obligations last year was just below the 5 percent overall growth in EC&S spending, the 26 percent growth between FY 2015 and FY 2019 lagged the 30 percent growth in total EC&S spending.

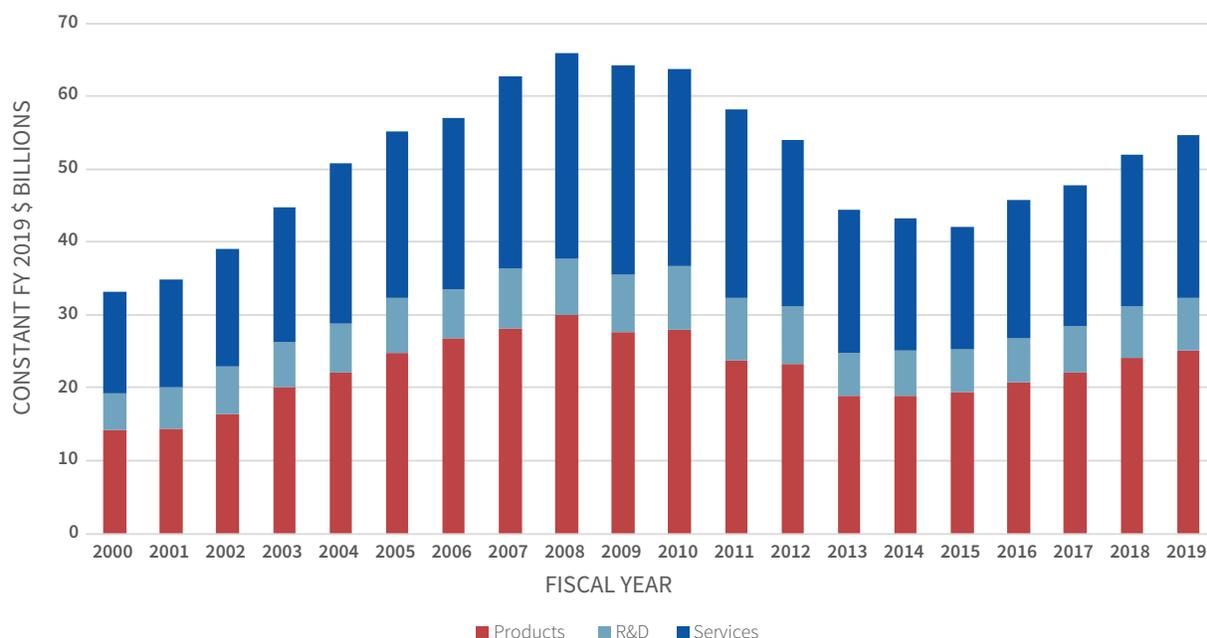
Defense EC&S services spending growth in recent years has outpaced the overall platform's rate of growth and aligns with the growth in information and communication technology services discussed in an earlier section. In FY 2019, defense EC&S services totaled \$22.3 billion, a 7 percent increase from the \$20.9 billion spent in FY 2018. Between FY 2015 and FY 2019, defense EC&S services increased 33 percent, rising from \$16.8 billion in FY 2015 to \$22.3 billion in FY 2019.

AIR AND MISSILE DEFENSE

Air and missile defense contract obligations continued to whipsaw over the course of the defense contracting rebound, declining 18 percent in FY 2019 despite their emphasis in the 2018 NDS. Air and missile defense contract obligations fell from \$13.7 billion in FY 2018 to \$11.3 billion. Even with this recent decline, air and missile defense contract obligations increased 13 percent overall between FY 2015 and FY 2019.

The significant increase in air and missile defense products in FY 2018 proved to be more a one-year mirage, but its decline in FY 2019 suggests that the increase in FY 2018 effectively balanced out the FY 2017 decline more than it represented the start of a significant trend. Air and missile

Figure 10: DoD Air and Missile Defense Contract Obligations by Area, 2000–2019



Source: Federal Procurement Data System; CSIS analysis.

defense products totaled \$6.95 billion in FY 2019, a 30 percent decline from the \$9.98 billion spent in FY 2018. However, in air and missile defense products, contract obligations are still up from the post-sequestration levels, increasing 9 percent between FY 2015 and FY 2019.

While air and missile defense products spending fell, both air and missile defense R&D and services saw increases last year. In FY 2019, air and missile defense R&D and services contract obligations increased 15 percent and 21 percent respectively. Between FY 2015 and FY 2019, air and missile defense R&D contract obligations increased 27 percent—over twice the overall 13 percent growth in air and missile defense—while air and missile defense services contract obligations increased just 9 percent.

CONCLUSION

Analysis of the trends in what DoD is buying reveals a few key trends:

- Defense spending has largely been concentrated in products, and while some of that spending has aligned with the emerging technology priorities outlined in the 2018 NDS, there has not yet been a significant shift in the composition of what DoD is buying.
- Defense services spending continued its steady growth over the course of the defense contracting rebound. Growth in defense services spending has largely been concentrated in FRS&C and ICT.
- The trends have been uneven within the platform portfolios across the defense contracting rebound. Some platform portfolios like EC&S have seen steady growth over the course of the defense contracting rebound while others like aircraft and space systems have seen more volatility.
- Land vehicles, despite its steady growth over the defense contracting rebound, remains an area of concern with implications for the health of the industrial base. ■

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ENDNOTES

- 1 Rhys McCormick, “Defense Acquisition Trends 2019: Topline DoD Trends,” CSIS, *CSIS Briefs*, October 10, 2019, https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/191011_McCormick_AcquisitionTrendsTopline_v4.pdf.
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- 4 Morgan Dwyer, Lindsey Sheppard, Angelina Hidalgo, and Melissa Dalton, “To Compete, Invest in People: Retaining the U.S. Defense Enterprise’s Technical Workforce” CSIS, *CSIS Briefs*, November 23, 2020, <https://www.csis.org/analysis/compete-invest-people-retaining-us-defense-enterprises-technical-workforce>.
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