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Beyond Industrial Policy: How Engaging Capital Markets Can Help Our Industrial Base Scale

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Beyond Industrial Policy: How Engaging Capital Markets Can Help Our Industrial Base Scale

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Abstract

Industrial policy is all the rage in the United States. Dramatically increased investments in Defense Production Act (DPA) Title III programs, the first-ever National Defense Industrial Strategy (NDIS), and the $52 billion Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act have clearly demonstrated U.S. government commitment to address industrial base weaknesses.

Despite these efforts, however, weaknesses abound. We cannot build munitions fast enough to resupply Ukraine, much less U.S. military stockpiles. Major systems continue to deliver late and in quantities that could not match wartime production needs. Moreover, it is not at all clear that DPA or CHIPS investments will be enough to fully address those vulnerabilities in our defense industrial base.

This paper examines the impact and challenges of industrial policy through large-scale industrial base investments and explores options to attract and scale private sector capital investment to scale production and address industrial base weaknesses.

Introduction

There are currently two major themes in the defense industrial base. The first focuses on fostering innovation to increase the speed of the delivery of capabilities to the warfighter and ramping up the scale of the delivery of these capabilities. There are many efforts across DoD to increase the speed of the development of systems through prototyping. These include the use of Other Transactions Authorities (OTAs) and other approaches to incentivize new high-tech companies to bring commercial technology to bear against defense challenges.

The second theme focuses on strengthening industrial capacity. Industrial policy is all the rage in the United States. This involves reshoring or friendshoring of industrial capabilities, many of which were previously produced in the United States. Industrial policy is one key tool in helping build industrial capacity that has been used with increasing frequency and scale since the COVID-19 pandemic. Dramatically increased investments in Defense Production Act (DPA) Title III projects, the first-ever National Defense Industrial Strategy (NDIS), and the $52 billion Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act have clearly demonstrated U.S. government commitment to address industrial base weaknesses.

These efforts are mutually reinforcing and making substantial progress, but weaknesses in the defense industrial continue apace. Experiences in the past several years have demonstrated challenges in the ability to produce systems at scale to support allies, refresh U.S. military stockpiles, or meet expected attrition rates in simulations of major overseas contingencies. Major systems continue to deliver late and in quantities that could not match wartime production needs. Supply chains remain a challenge for production.

Many of the difficulties in scaling production originate in how the DoD acquires capabilities and builds industrial capacity. Changing DoD acquisition processes and increasing resources are indeed part of the solution. Numerous efforts are underway to address these challenges, from reform of DoD's Planning, Programming, Budgeting, and Execution (PPBE) process and the FORGED Act under consideration in the FY2026 National Defense Authorization Act (NDAA). I separately addressed many of these issues in a 2024 report focused on industrial mobilization (McGinn, 2024b), and there have been numerous other recent reports have focused on fostering innovation in how DoD engages with the defense industrial base.

It is becoming increasingly clear, however, that efforts will not be sufficient to address national security challenges in the defense industrial base. Absent a major war or a national emergency, there appears to be little appetite in Congress or the Executive Branch for dramatically raising defense spending to Cold War levels given concerns about the national debt.

Research Question

Given this constrained environment, there have been growing calls for greater private sector investment to help strengthen the defense industrial base. These have ranged from appeals for increased company spending on research and development (R&D) instead of stock buybacks to co-investment, cost-share, and commercialization strategies. Many of these are already key components of industrial base investments. How effective have they been, and what can these efforts tell us about the future?

Thus, this paper examines the following research question: what type of incentives would change the dynamic of private sector investment in defense?

Approach

The paper starts with a baseline examination of current company R&D incentive models (e.g., share buybacks, IRAD, etc.). These structures do not appear to incentivize industry investment beyond explicit government spending plans. I then turn to current industrial base programs that require some level of industry co-investment or cost share (e.g., consortia, industrial base investment programs (DPA Title III and IBAS)) to examine their effectiveness.

I then examine alternative methods to create industry incentives to invest in scaling in market areas pertinent to national security. This includes an examination of previous DPA loan efforts and emerging OSC funds as well as potential efforts such as advanced depreciation and even sovereign wealth funds.

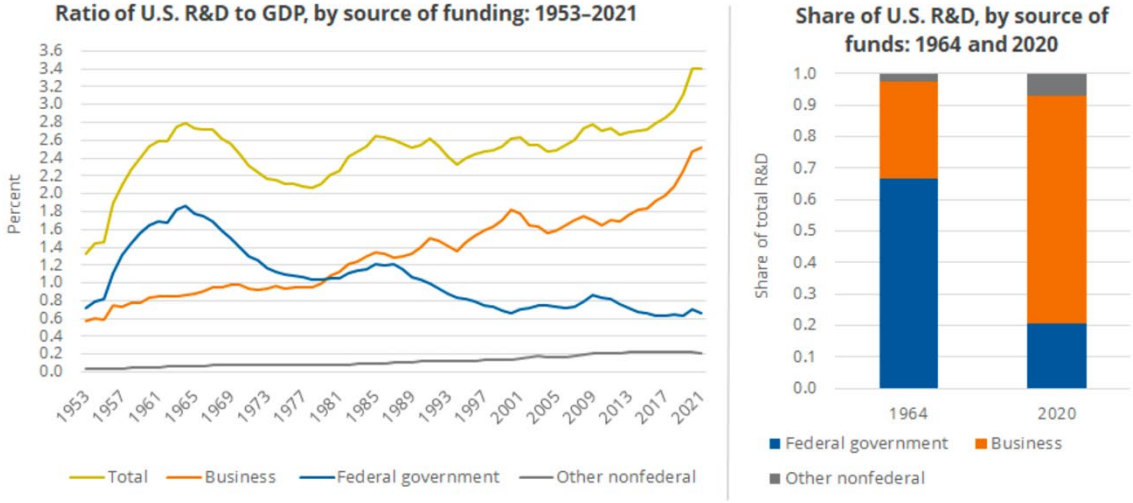
Current R&D Incentive Structures

Despite a decade's focus on innovating with commercial technology, the defense acquisition system largely remains focused on efficiency and cost savings. While this is a worthwhile goal, this regularly leads to limited production runs built precisely to the terms of the contract and results in industrial capacity that is very difficult to scale quickly as well as decades-long franchise programs that reduce competition.

This situation is principally the result of incentive structures that have existed largely since the end of the Cold War. As defense spending shrank from 6% of gross domestic product (GDP) to 3% in the early 1990s, DoD customers changed their buying behaviors. An increased focus on getting the most out of every shrinking acquisition dollar ironically led to longer acquisition timelines and greater cost.

Commercial vs. Government R&D Trends

In R&D, there have been more longstanding trends that have impacted incentive structures for defense companies. As Michael Brown and Pavneet Singh demonstrate in their 2024 report, federal R&D spending peaked in the 1960s at almost 2% of gross domestic product (GDP) or close to 70% of all R&D. That percentage has declined steadily in the intervening decades and private sector R&D has surpassed federal spending to rise to 2.4% of GDP in 2021 and over 70% of all R&D. Figure 1 illustrates this trend:



GDP = gross domestic product.

Figure 1: U.S. R&D, by Source of Funds

Source: National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series)

This trend is well known and helps explain the rise of private capital in private equity- and venture capital-backed firms in defense, but its impact on traditional firms' R&D practices is less well understood.

Stock Buybacks and More

Stock buybacks have been a perennial source of tension between government leaders and industry executives. Senior DoD officials have raised concerns when companies doing business with DoD use free cash flow to buy back existing shares of company stock in lieu of additional investments in R&D or production capacity. Comments by former Secretary of the Navy Carlos del Toro last year captured the essence of this critique: "You can't be asking for the American taxpayer to make greater public investments while you continue to goose your stock prices through stock buybacks, deferring promised capital investments, and other accounting maneuvers" (Demarest, 2024).

Why do defense companies pursue stock buybacks and not make large scale capital investments? As I noted with two co-authors last year,

> The issue revolves around the capital allocation decision. If large defense primes are not making significant investments, it is because they believe that this incremental dollar is unlikely to materialize into a profitable contract in the future. For that to change, these primes need to see a better return for the earnings they intend to retain and re-invest either via growth opportunities, greater frequency and volume of competitions, or margin improvement. (McGinn et al., 2024)

Stock buybacks are principally used by large publicly traded defense primes like Lockheed Martin, Northrop Grumman, or General Dynamics. Publicly traded defense firms number around 100, an extremely small percentage of the overall defense industrial base of well over 100,000 firms. Smaller publicly traded companies like Kratos and AeroVironment do not typically buyback shares because they see significant defense and national security opportunities in their market segments of unmanned systems, advanced electronics, and autonomy. If similar incentives existed for the larger primes, that is where their capital would go (McGinn et al., 2024).

Another major topic that is often raised is company independent research and development (IRAD). IRAD is available to traditional defense firms (i.e., those that are compliant with the Cost Accounting Standards). IRAD is used by companies to conduct research on promising technology areas that are not currently funded by DoD. Major primes can spend over $1 billion on IRAD. While IRAD is often termed as "company-funded," it is actually an allowable expense that is charged back to the government (DoD, 2023a; Lofgren, 2022).[1]

Beyond the allowability of IRAD, one of the points of contention is the degree to which company IRAD investments focus on areas of particular interest to DoD. During the 2010s, for example, then Under Secretary of Defense for Acquisition, Technology, and Logistics Frank Kendall attempted to establish a review process whereby companies engaged with DoD customers before and during IRAD projects. The intent was to make these engagements light-touch, but the industry was concerned that the review stage would add time and cost (Maucione, 2015). The initiative was eventually abandoned, but the need for a better alignment between DoD and industry on IRAD remains an issue. Revitalizing IRAD reviews is one option that merits further consideration (McGinn & Hyatt, forthcoming).

As the preceding makes clear, current structures do not incentivize significant independent R&D investment in the defense space. We will now look at recent efforts to spur innovation and industrial base investments to understand how they are impacting the incentives structures in the defense industrial base.

The Rise (and Peak?) of Industrial Policy

Industrial policy, as broadly defined by the Organisation for Economic Cooperation and Development and many others, is the use of government assistance to businesses to incentivize or directly subsidize the expansion of certain economic sectors (Siripurapu & Berman, 2023). U.S. government leaders have long avoided the use of industrial policy in most cases in favor of free market economics. This approach helped fuel U.S. economic growth but also led to the offshoring of industrial capabilities from the United States over time. The production, for example, of rare earth mineral processing, batteries, specialty chemicals, and other capabilities with significant environmental impact migrated to more favorable and lower labor cost markets such as Asia.

Despite this overall reticence, industrial policy has been part of defense sector for decades with Buy America laws focused on spurring domestic production of defense systems. With built in exemptions for close allies and partners and the natural need to make the most sensitive defense systems in the United States, it is not surprising that aerospace and defense is one of the strongest domestic manufacturing industries, with a $114 billion positive trade balance in 2023 (Aerospace Industries Association, 2024).

[1] See Appendix 3 of the DoD Contract Finance Study Report for a description of Independent Research and Development.

The real rise in the use of industrial policy in defense began in the late 2010s, however. In 2017–2018, Executive Order 13806 launched a presidentially directed comprehensive review of the U.S. manufacturing and defense industrial base to address current and future U.S. national security needs and to make policy, regulatory, legislative, and investment recommendations to the president. This review identified that Chinese firms had become single or sole source suppliers in numerous areas such as rare earth mining and processing, batteries, and specialty chemicals where the United States had once had a leading role. The final report of this review recommended immediate investment to rebuild U.S. capacity in these and numerous other areas (U.S. Department of Defense, 2018). DoD, under the Defense Production Act Title III, launched a series of projects beginning in 2019 to invest government resources in these areas.

COVID-19 dramatically accelerated industrial policy through a $1 billion appropriation to DPA in the CARES Act (McGinn, 2020). The Biden Administration continued this focus on industrial policy in its EO 14017 review of critical supply chains and subsequent investments through DPA as well as the Industrial Base Analysis and Sustainment (IBAS) program.

DPA Title III and IBAS

DPA Title III and IBAS are the two major defense industrial base investment programs and their funding levels have dramatically increased since COVID. Title III is one of three active sections of the DPA, which was originally passed in 1950. Title III gives the president the authority to make purchases, purchase commitments, loans, and loan guarantees to address a domestic industrial base shortfall. Prior to COVID, Title III was funded at around $50–$70 million per year. In the aftermath of COVID and a series of presidential executive orders during the Trump and Biden administrations, Title III investment increased tenfold on an annual basis (Defense News, 2024). IBAS was established in 2013 to improve the readiness and competitiveness of the U.S. industrial base. It was even more modestly funded in the mid-2010s, averaging under $20 million annually. IBAS has similarly grown in funding levels since 2020, including over $830 million in appropriations in FY 2023 (Manufacturing Capability Expansion Investment Prioritization, 2024).

Impacts and Challenges

The significant rise in funding levels is the first obvious impact of increased industrial base investments since 2020. Figure 2 illustrates the dramatic changes in both DPA Title III and IBAS (Manufacturing Capability Expansion Investment Prioritization, 2024).

Figure 2: DPA Title III and IBAS Funding, FY15–28
(Office of the Assistant Secretary of Defense for Industrial Base Policy, n.d.)

A significant number of projects have been launched in industrial capability areas such as rare earth and other critical minerals, castings forgings, microelectronics, and numerous other areas. In FY2023, for example, almost $520 million was appropriated for critical chemicals; hypersonics; strategic radiation hardened microelectronics; microelectronics packaging; strategic and critical minerals; castings and forgings; energy storage and batteries; and solid rocket motors (Office of the Assistant Secretary of Defense for Acquisition, 2024a).

The direct impact of the industrial base investments is critical, but the overall objective of these efforts is to create a sustainable industrial capability that can survive and thrive after the conclusion of the DPA or IBAS project. These have always been a major component of these industrial base investments, executed through cost share or commercialization strategies. This follow-on impact is critically important because most of the capabilities created have a substantial or even dominant portion of their respective markets that are commercial. Rare earth magnets and advanced batteries, for example, are overwhelmingly commercial with less than 1% of the market for defense purposes.

With most of the major recent DoD industrial base projects still underway, it is impossible to definitively measure how well they are achieving their overall commercialization objectives. There have been a number of follow-on or concurrent investments by private capital, government, as well as commercial customers that are promising, however. Some examples include:

- DoD supported the redevelopment of Mountain Pass, the nation's first operating rare earth mine and processing facility, now managed by MP Materials, through both DPA and IBAS investments in 2020 and 2022, respectively (DoD, 2020). This government funding was a critical signal to the commercial market that helped MP Materials secure two essential subsequent contracts: a long-term supply agreement with GM (MP Materials, 2021) as well as a $59 million award administered by the Department of Energy to build their own fully-integrated rare earth magnet manufacturing facility in Fort Worth, TX (MP Materials, 2024). This tax credit allocation helped advance the construction of that facility.
- IperionX, a high-performance titanium producer, received a $12.7 million DPA award in 2023 (DoD, 2023b), recently announced a framework agreement to sell 80 metric tons of titanium products to United Stars every year for 10 years. United Stars is a key supplier of aerospace, defense, and commercial parts to Boeing, BAE Systems, Lockheed Martin, General Electric, Lucid Motors, GM, Toyota, Caterpillar, Oshkosh, and John Deere, among others (Businesswire, 2025).
- Concurrent with DPA investments of $6.4 million in Fortune Minerals for cobalt production and $8.3 million in Lomiko Metals for graphite (DoD, 2024b), the Canadian government announced $7.5 million and $4.9 million in funding for the companies, respectively (Canadian Broadcasting Corporation, 2024). The projects represent the first U.S.–Canadian government partnerships supporting Canadian critical minerals initiatives for the benefit of both countries' supply chains.
- The Munitions Campus pathfinder project has secured 1,100 acres of land near Crane, IN, entirely funded with private capital, creating a shared supply chain ecosystem from critical chemicals through munitions production. This includes a signed agreement with Prometheus Energetics, a joint venture between Kratos Defense & Security Solutions and RAFAEL Advanced Defense Systems, which will serve as the first anchor tenant of the campus, as well as signed commitments from at least 13 additional smaller companies (ACMI, 2025).

Getting a better sense of these types of follow-on investments will be critical to understanding whether the government market signal is having the desired return on investment. Currently, there are no concerted efforts underway to measure the impact of follow-on activities and assess the sustainability of industrial capacity being developed through industrial base investment. This always been one of the major concerns about using industrial policy-focused tools like DPA. Many of the industrial capabilities that the United States is attempting to strengthen or reshore previously migrated to other markets that are more commercially profitable. While these significant industrial base investments will have an impact, it will take years for these investments to build industrial capacity, and it is not clear that these investments will build self-sustaining domestic industrial ecosystems in areas ranging from rare earth processing and specialty chemicals to microelectronics and small drones.

The Inflation Reduction Act and CHIPS

The Biden Administration employed industrial policy in two of its major legislative accomplishments, the Inflation Reduction Act (IRA) and the CHIPS and Science Act. President Biden issued a presidential determination in June 2022 providing the Department of Energy (DoE) with the authority to utilize the DPA to "rapidly expand American manufacturing of five critical clean energy technologies" including solar panels, heat pumps, and critical power grid infrastructure (U.S. DoE, 2022). The IRA's DPA investments of $500 million were evenly split between DoE and DoD (U.S. DoE, n.d.-a).

CHIPS, meanwhile, was one of the largest-ever appropriations focused on rebuilding U.S. domestic manufacturing of semiconductors. With semiconductor manufacturing heavily concentrated in Taiwan and East Asia, U.S. policy-makers were increasing concerned with ensuring the availability of semiconductor technology in the United States given potential trade disputes or even armed conflict. After almost 2 years of debate, Congress passed and President Biden signed into law the CHIPS and Science Act in 2022 that appropriated $52 billion to boost domestic semiconductor manufacturing through grants and other financial incentives (Blevins et al., 2023).

Impacts and Challenges

The Departments of Commerce, Defense, and Energy spent the remainder of the Biden Administration working to obligate these funds and incentives to companies. With the IRA, for example, DoD awarded $250 million to 12 companies through DPA Title III to establish "domestic manufacturing capability for a reliable and sustainable supply of strategic and critical materials for large-capacity batteries and other supply chains key to national defense." These awards went to the development of capabilities such as lithium mining, high quality graphite, battery-grade manganese, and other areas (Office of the Assistant Secretary of Defense for Acquisition, 2024). By January 2025, the CHIPS Program Office in the Department of Commerce had awarded over $36 billion to numerous companies across the United States (National Institute of Standards and Technology, n.d.).

The change in presidential administration in 2025, however, led to the pause of many of these investments. The Executive Orders for the IRA DPA Presidential Determinations, for example, were rescinded in March 2025 (Federal Register, 2025), and many IRA projects in other agencies were cancelled (IRA Tracker, n.d.). With CHIPS, it is currently unclear what the future holds for the program and the awards made during 2024 (Shephardson, 2025).

These difficulties illustrate some of the challenges with large scale industrial policy efforts. The IRA, for example, was not a bipartisan effort. No Congressional Republicans voted for the bill, and there was a great deal of partisan disagreement about the appropriateness of invoking the DPA for solar cells, heat pumps, and other IRA priorities (U.S. House Committee on Energy and Commerce, 2023). Thus, when industrial policy is not done on a bipartisan basis, it becomes at risk when there is a change in political power.

The CHIPS Act, on the other hand, was passed on a bipartisan basis. It was not a large bipartisan majority, but there was a broad national consensus about the need to revitalize domestic semiconductor manufacturing. The inherent challenge with CHIPS was that such a large Congressional appropriation requires political concessions or considerations to help secure passage. Thus, controversial provisions about child care and project labor agreements were included in the final bill that passed Congress (Blevins et al, 2023).

The IRA use of the DPA has played a major role in the discussions of DPA reauthorization. The House Financial Affairs Committee held two hearings in 2024 on DPA reauthorization, and the focus of these hearings was the importance of keeping DPA focused exclusively on defense and national security issues, in particular threats from our pacing competitor, China (U.S. House Committee on Financial Services, 2024). This year's DPA reauthorization debates in Congress will certainly center around these issues (McGinn, 2024a).

Limitations of Industrial Policy

While the rise of the use of appropriations and—by extension—industrial policy to address defense industrial base weaknesses has had an impact, the preceding also demonstrates that there are two clear limitations to significant use of appropriations to achieve industrial base goals. The first limitation is that the larger the investment of public funds, the

greater the chance for these investments to get caught up in political considerations. While most of the individual DPA and IBAS projects were narrowly focused on specific industrial capabilities, the much larger IRA and the CHIPS and Science Act efforts came to be seen, particularly in the former, as partisan initiatives, which significantly undermined their ultimate viability.

The second limitation is that there is simply not enough money to fix all of our industrial base weaknesses. There is no appetite for perpetual government subsidies to sustain uncompetitive industries. Even the massive CHIPS and Science Act is widely seen as insufficient to reestablish domestic semiconductor manufacturing. With ever-growing budget deficits, the appetite for additional massive public sector industrial base investment programs is just not there in the absence of a major war or a true national emergency. In retrospect, it appears that CHIPS was likely the peak for industrial policy and the large-scale use of appropriated funds for industrial base assessment.

Despite these clear restraints, the need for defense industrial base strengthening remains essential. How can U.S. policy-makers square this circle? That's where the power of U.S. private capital, one of the nation's global discriminators, comes to bear.

Innovation Excursion[2]

Before turning to potential solutions, it is important to briefly describe some of the important innovation efforts that have helped to reengage private capital in defense markets. Many of these issues have been treated in depth elsewhere (Brown & Singh, 2024), but the experiences of these efforts underscore the need for additional methods to engage private capital in defense.

Innovation Hubs

The Defense Innovation Unit (DIU) and respective military department innovation organizations have played a major role in bringing in startups and non-traditional companies, many of which have never done business with DoD. These organizations have played a major role in growing the use of Other Transactions Agreements, in particular Commercial Solutions Openings, that have enabled experimentation and prototyping on a wide range of national security challenges (Defense Innovation Unit, 2024).

SBIR/STTR

Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) are long-standing innovation programs across the U.S. government. Their attractiveness has grown substantially in recent years across Federal agencies. As illustrated in Figure 3, DoD obligated almost $3 billion in SBIR/STTR in FY2023, almost three times that in 2013 and roughly half the total USG investment in SBIR/STTR. Still, their low initial values and struggles with transition discourage many smaller companies. Air Force AFWERX has developed the STRATFI/TACFI programs to help companies transition from Phase II projects and bridge the proverbial valley of death (AFWERX, n.d.). These programs require various levels of matching funding that can from sponsor or private sources and have been widely lauded by private capital-backed firms. Pursuing these types of approaches will help early-stage companies grow and scale rapidly.

[2] This section draws heavily from McGinn and Hyatt, "Novel Ways to Incentivize Industry," (forthcoming).

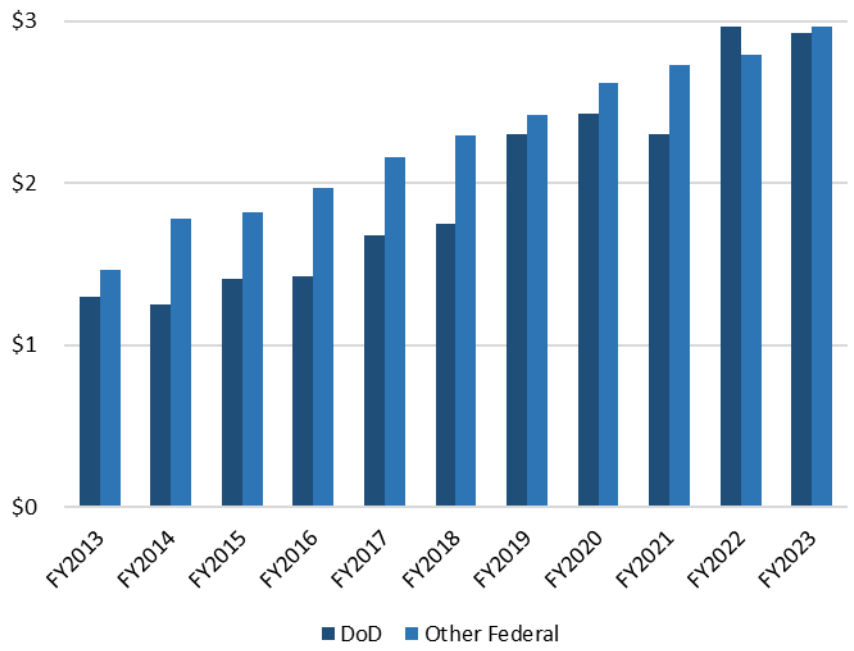


Figure 3: SBIR/STTR Funding, FY2013-2023 ($B)
(Source: SBIR.gov, Baroni Center analysis)

The tracking of the impact of SBIRs, however, has been a longstanding issue because there is no straightforward current way to track the transition of SBIRs as they move out of Phase II. This hinders the ability of government to track the impact of SBIR funding, but it also affects the ability of both government and the private sector to track the impact of venture dollars in defense. In-Q-Tel developed a methodology for tracking the impact of venture dollars from its intelligence investments through PitchBook, so DoD should explore similar methodologies for its SBIR investments.

Public-Private Partnerships

Public-private partnerships (PPPs) have become more common in recent years. PPPs "describe the cooperative relationship between public and private organizations in which the two or more parties share costs, resources, and risk associated with the delivery of goods and services" (Roumboutsos & Saussier, 2014). They allow for more private sector participation than can be achieved through traditional means, and can be harnessed for a wide array of defense needs and priorities, including AI advancement, depot maintenance, efficient defense acquisitions, and many others. Private companies may also have access to additional sources of capital or revenues. For the federal government, PPPs offer several advantages, allowing the public sector to offset risk and acquire lower-cost, and providing more reliable services while also promoting economic growth and employment opportunities. PPPs typically require an agency to work with the private partners and to oversee the planning efforts. To establish a strong PPP, it is important that all parties commit to a long-term relationship, and that they bring complementary skillsets. All stakeholders should also be committed to resource sharing in support of PPP objectives.

DoD has increasingly focused on PPPs as contractual arrangements to elicit more participation from industry, especially to collaborate on innovations that benefit Pentagon strategy and operations. One major example has been the creation of DoD Manufacturing Innovation Institutes (MIIs). These MIIs focus on areas such as additive manufacturing, flexible

electronics, lightweight metals, and advanced textiles that leverage the commercial sector to promote innovations in manufacturing technologies that support the U.S. warfighter (Manufacturing USA, n.d.).

Overall, PPPs are not a mechanism guaranteed to promote innovation in every scenario, and do entail transaction costs, but they constitute an impactful tool to facilitate greater DoD-industry collaboration. With over three-quarters of domestic R&D spending originating from the private sector, PPPs offer a pathway to onboard that innovation and capitalize on the resources of entrepreneurs through more close-knit collaboration.

Consortia[3]

The consortia model is another tool in the defense acquisition toolbox. From a single consortium in 2000, this method of fostering partnerships and collaboration has grown rapidly with at least 42 consortia by 2022. Membership has also expanded at a brisk pace with estimates of more than a fifteenfold increase from 2010 to 2019. When used appropriately alongside other acquisition methods, it fosters innovation, expands the industrial base, and accelerates procurement. The key to maximizing its potential lies in maintaining flexibility, improving data transparency, and ensuring the government workforce remains skilled in both traditional and alternative acquisition pathways.

Consortia offer numerous benefits to both government and industry. First, they can aid federal acquisition efforts by promoting government–industry collaboration resulting in early engagement and open discussion which can translate into better-defined requirements and innovative solutions. Second, consortia can facilitate industry partnerships and collaboration, which can occasionally be missing in government contracting while also creating new links in defense supply chains. Third, it can help expand the defense industrial base as the majority of members are often non-traditional contractors and small businesses, segments of the defense ecosystems that DoD is actively trying to recruit. Fourth, consortia can provide vital surge capacity by furnishing a collection of primed potential supplies while also increasing resources available to help manage and navigate the complexities and nuance of federal procurement. Lastly, consortia can help provide federal program offices with experience and necessary skills that may be absent in the existing workforce.

Impact and Challenges

These and other innovation efforts have made tremendous progress in fostering innovation across the DoD community. The dramatic rise in OT agreements and spending, for example, is illustrated in Figure 4:

[3] This section relies heavily on Schwartz and Halcrow (2022).

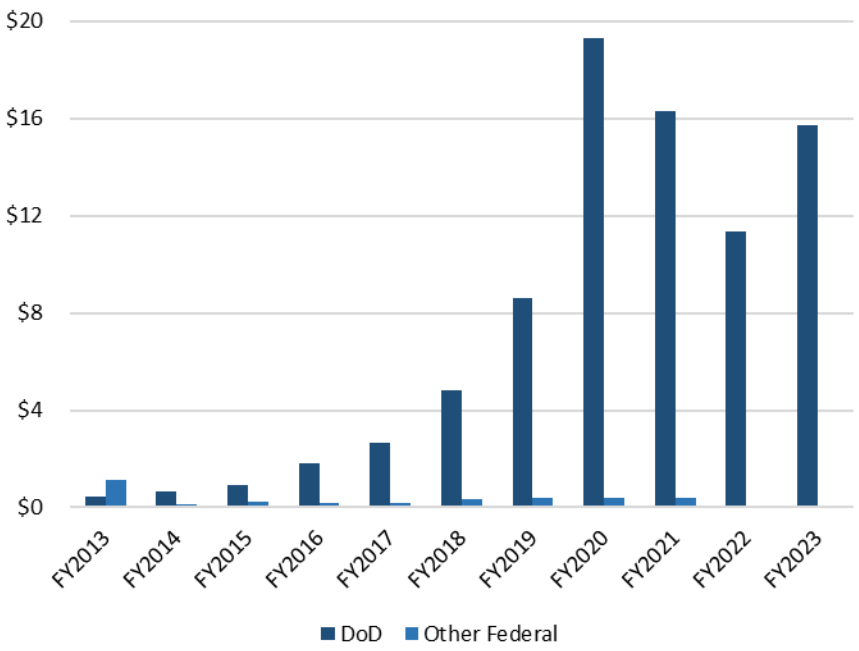


Figure 4: Other Transactions Authority Obligations, FY2013-2023 ($B)
(Source: SAM.gov, Baroni Center analysis)

From 2018 to 2023 alone, DoD use of OTAs increased over 220% to $16 billion.

While this progress has been dramatic, the challenge with all these innovation efforts has been transitioning from prototypes to programs of record. This has been a major focus of recent reform efforts such as the Congressional Commission on PPBE Reform (2024) and could be a focus of the recently announced Executive Order review focused on defense acquisition reform (Executive Office of the President, 2025). The increased deployment of private capital in defense could have a major impact in helping to transition from innovation to production so we turn to that now.

New Models for Capital Markets in Defense

The power of U.S. capital markets is one of nation's major competitive advantages in the global marketplace. The increasing private sector investment in defense through private equity and venture capital funds has led to an emerging focus on how to harness the power of our capital markets to spur increased production capacity and other industrial capabilities in our defense industrial base.

Interestingly, this spurring of increased industry investment is relevant for companies across the defense industrial base. These companies, however, have different time horizons which impact the types of opportunities that will be attractive to different types of firms. Large traditional businesses, whether they are publicly traded or privately held, are primarily concerned with near-term contracts. Because of their size, however, they have the backlog of existing business to develop longer-term opportunities and navigate government processes. Private equity-backed firms, meanwhile, typically have a 5-to-8-year horizon. They are focused more on income and look to grow and position their companies for eventual transaction. Venture capital (VC) firms, meanwhile, typically have a 10-year horizon with their portfolio companies. VCs are more focused on growth so having visibility into future opportunities is of key importance to them.

OSC and Beyond

The Office of Strategic Capital (OSC) has created a loan authority in DoD for the first time in decades. While private capital investment has flowed freely into software-heavy capabilities for years, there is an increasing need to spur private capital into the development of critical hardware-focused capabilities (Brown & Singh, 2024; Murphy et al., 2024). OSC was established to address this specific need. Using authority granted under Section 903 of the FY24 NDAA, OSC was able to launch its first funding opportunity in early 2025 to issue direct loans to companies in the critical technologies value chain. OSC received $9 billion in credit applications, well in excess of the nearly $1 billion in initial lending authority (DoD, 2025b). This is a tremendous start and shows the significant private capital desire to invest in defense.

OSC has also established the Small Business Investment Company Critical Technologies Initiative (SBICCT Initiative), which is a partnership between DoD and the Small Business Administration to attract and scale private investment in DoD critical technology areas. The first cohort of funds is projected to invest over $4 billion into over 1700 portfolio companies, from traditional and non-traditional firms (DoD, 2025a).

Beyond OSD, the DPA already has loan and loan guarantee authority under Title III, but this authority has not been utilized for decades. Several attempts have been launched to revitalize this authority, as recently as during the COVID-19 pandemic, but none have been successful to date.

Finally, there have been increasing calls for the establishment of a U.S. sovereign wealth fund. Sovereign wealth funds are traditionally found in countries with excess natural resources and therefore excess funds for investment. That is not the case in the United States, but President Trump issued an executive order calling for the creation of such a fund and the leadership of the Intelligence Community's In-Q-Tel (IQT) have similarly argued recently (Bowsher & Sewall, 2025).

Purchase Commitments, Credit Guarantees, and Off-Take Agreements

A key market signal for private sector investment is recurring demand. This is difficult in defense because resources are appropriated year-by-year and there are often significant swings in demand. Recent multi-year procurement programs in some munitions have helped create that kind of demand signal, but Congressional support for a major expansion of multi-year procurement is not readily apparent.

Another way to achieve this kind of demand signal, either through venture funding or traditional contractor's use of capital expenditures (CapEx) funding is through the establishment of purchase commitments, credit guarantee programs, off-take agreements, or strategic supply agreements. Policy-makers can establish credit guarantee programs that would help PE and traditional industry (and perhaps VC) derisk their investments in CapEx and other longer-term investments. Establishing loan guarantee program like the Department of Energy's would help address that financing gap(U.S. Department of Energy, n.d.-b).

Purchase commitments under DPA Title III would be additional way of helping set a constant demand signal to help spur private sector investment. DoD is looking to establish purchase commitments for specialty chemicals and critical minerals, but purchase commitment projects are not an option currently because Congress has appropriated DPA funds over the past several years using standard Procurement funds which expire in 2 years, contrary to traditional DPA appropriations which do not expire. That needs to change to start using this important authority (McGinn, 2024a).

Accelerating Depreciation Costs

Alternatively, DoD could also increase the amount or speed of depreciation allowed on CapEx or major investments. This would increase the attractiveness of private capital investment for production facilities ahead of direct appropriations. This will require Congressional legislation, but provisions are currently under consideration by a couple of committees that may address this issue.

Changing Margin Incentives

Finally, federal contractors are currently limited to a certain percentage of profit on non-fixed price contracts. Current levels generate cash and steady levels of profits, but do not readily facilitate increased investment, particularly in publicly traded companies, but also in venture-backed firms. Enabling companies to earn greater margins and therefore greater profits would frankly incentivize them much more than anything else. If DoD structured incentive contracts to enable higher margins for greater performance, for example, DoD could unlock tremendous sources of private capital in defense, much greater than even larger production contracts. This would likely require significant changes in or the elimination of Cost Accounting Standards, which would likely require significant legislative and regulatory change.

Way Ahead

This paper helped to analyze the benefits and limitations of efforts to utilize industrial policy through appropriated funds to strengthen the defense industrial base. The final section identified some methods that could be used to help incentivize the greater use private capital in the defense marketplace. Each of these models needs additional development to determine their feasibility and use cases, but the experience of CHIPS and other appropriations-based efforts has made it clear that we are at, or likely beyond, "peak" industrial policy. It is time to move beyond large scale industrial policy efforts such as CHIPS and put the tremendous power of our capital markets to work to help strengthen our defense industrial base for the future.

The key with all these incentives is that they address the metrics on which traditional, private equity, and venture capital firms are evaluated by their investors and shareholders. Addressing some or all of these incentive structures will spur the level of private capital investment needed to address DoD's needs and today's national security challenges.

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