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**GREG AND CAMILLE BARONI
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Beyond Industrial Policy:

How engaging capital markets
can help our industrial base scale

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Overview



Two major themes in the industrial base

- Fostering innovation to speed delivery of capabilities
- Industrial policy is all the rage

Despite these efforts, weaknesses abound

Research Question

How effective have industrial policy efforts been and what type of incentives would change the private sector investment in defense?

Approach

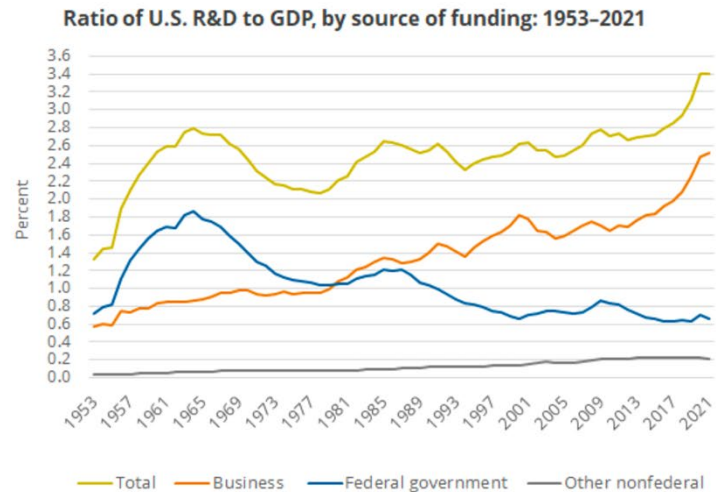
Examine current R&D incentive models; examine rise and limitations of industrial policy; look at innovation efforts

➔ Identify new models for industry incentives to invest in scaling national security capabilities

Current R&D Incentive Structures

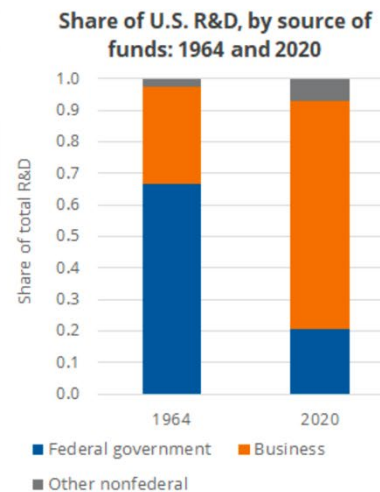
Commercial vs. government R&D trends

- Federal R&D spending peaked in the 1960s at ~ 2% GDP & 70% of all R&D
- Private sector R&D rose to 2.4% of GDP in 2021 & > 70% of all R&D



GDP = gross domestic product.

Figure 1: U.S. R&D, by source of funds



• Stock buybacks

- Stock buybacks have been a perennial source of tension between government leaders and industry executives
- The issue revolves around the capital allocation decision. For that to change, primes need to see a better return for the earnings via growth opportunities, greater frequency and volume of competitions, or margin improvement

• 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
- Revitalizing IRAD reviews is one option that merits further consideration



The Rise of Industrial Policy (1 of 2)

- Growth of DPA Title III and IBAS
 - Prior to COVID, Title III was funded at around \$50-\$70 million per year and IBAS was even more modestly funded, averaging under \$20 million annually.
 - Both increased tenfold on an annual basis in recent years
- Impacts and challenges
 - Follow-on investments
 - MP Materials – GM long-term supply agreement; \$59M DoE loan
 - IperionX – framework agreement with United Stars for supplying titanium to LMT, BA, BAE, etc.
 - Fortune Materials – \$13M concurrent Canadian govt. investment (cobalt and graphite)
 - Munitions campus – Kratos-Rafael JV to serve as anchor tenant for shared supply chain ecosystem in Indiania
 - Commerciality and viability concerns
 - USG investment can restart domestic production but can it remain commercially viable over time
 - No sustained efforts to track impact of industrial base investment

The Rise of Industrial Policy (2 of 2)

- **Inflation Reduction Act (IRA)**

- \$500M in DPA investments split between DoD and DoE
 - DoD obligated \$250M by 1/25 to support batteries and other supply chains
- DPA invocation controversial
 - Solar cells and heat pumps not viewed as “defense” by many
- IRA not bipartisan
- EOs and projects cancelled in 2025

- **CHIPS and Science Act**

- \$52B investment to boost domestic semiconductor manufacturing
 - Grants, loans, DPA, etc.
- Bipartisan effort but size led to political concessions to ensure passage
 - Childcare and project labor agreements
- Future of CHIPS unclear
 - \$36B obligated by 1/25 but a great deal of uncertainty

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:

1. The larger the investment of public funds, the greater the chance that these investments get caught up in political considerations
2. The second limitation is that there is simply not enough money to fix all industrial base weaknesses.
 - There is no appetite for perpetual government subsidies to sustain uncompetitive industries.
 - 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.

CHIPS was likely the peak for industrial policy and the large-scale use of appropriated funds for industrial base assessment

Innovation Excursion (1 of 2)

Before turning to potential solutions, it is important to describe some of the innovation efforts that have helped to reengage private capital in defense markets

Innovation Hubs

- DIU and other and innovation organizations have played a major role in bringing in startups and non-traditional companies

Public Private Partnerships (PPPs)

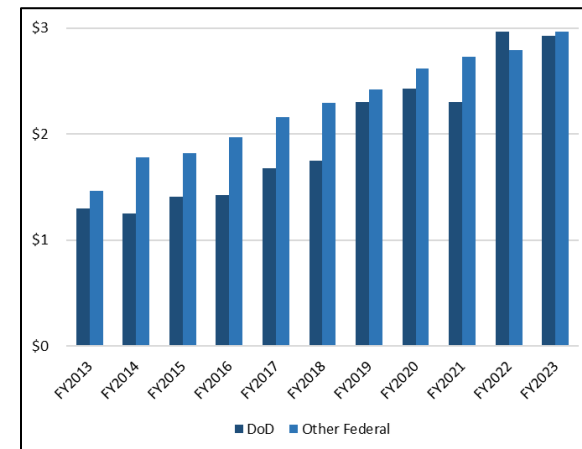
- DoD has increasingly focused on PPPs as contractual arrangements to elicit more participation from industry (Manufacturing Innovation Institutes, etc.)

Consortia

- Growth from 1 in 2000 to at least 42 by 2022
- Membership has also expanded at a brisk pace with estimates of more than a fifteenfold increase from 2010 to 2019

SBIR/STTR

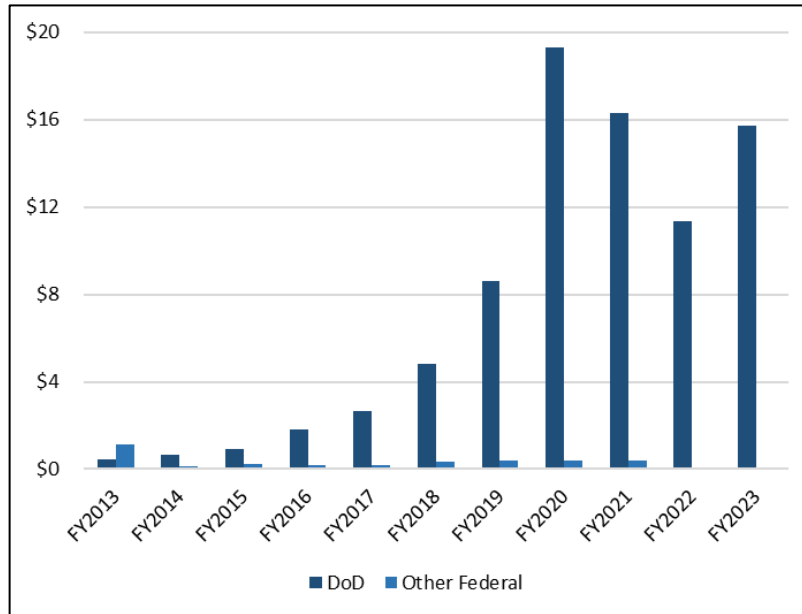
- SBIR/STTR investment has doubled in the past decade, rising to almost \$6 across USG
- Still, low initial values and struggles with transition discourage many smaller companies. Air Force AFWERX STRATFI/TACFI programs show promise, however



Source: SBIR.gov, Baroni Center analysis

Innovation Excursion (2 of 2)

These and other innovation efforts have made tremendous progress in fostering innovation across DoD...



Source: SAM.gov, Baroni Center analysis

DoD use of OTAs increased over 220% from 2018 to 2023 to nearly \$16 billion

...but the challenges with all these innovation efforts has been transitioning from prototypes and experimentation to programs of record.

The increased deployment of private capital could have a major impact in helping to transition from innovation to production

Beyond Industrial Policy – New models for Capital Markets in Defense (1 of 2)

Office of Strategic Capital (OSC) and beyond

- The power of U.S. capital markets is one of nation's major competitive advantages in the global marketplace
- Increasing private sector investment in defense through private equity and venture capital funds
- Increased industry investment is relevant across the defense industrial base
- Initial OSC funding opportunity of \$1B in lending authority received \$9B in credit applications
- Other potential options available
 - DPA loan and loan guarantee authority
 - Sovereign wealth fund

Beyond Industrial Policy – New models for Capital Markets in Defense (2 of 2)

Purchase commitments and credit guarantees

- Recurring demand is key market signal. Multi-year procurement not likely scalable
- Purchase commitments, etc. would help PE, VC, and traditional industry derisk CapEx and other investments
 - DPA can execute PCs with one change
 - DoE loan guarantee program could be model for DoD

Accelerating depreciation

- Increasing the amount of or speed of depreciation allowed on CapEx or major investments would have a powerful impact on private capital

Changing margin incentives

- Structuring incentive contracts to enable higher margins for greater performance would incentivize companies across industrial base
- Would likely require changes in or elimination of cost accounting standards



Way Ahead

Industrial policy efforts have strengthened the defense industrial base, but...

...experience of CHIPS and other large appropriations-based efforts, however, 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 and put the tremendous power of our capital markets to work
- Each of these models need additional development to determine their feasibility and use cases
- 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 these incentive structures will spur the level of private capital investment needed to address DoD’s needs and today’s national security challenges

Questions

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