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Supply Chain – Our Greatest Direct Cost

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Supply Chain – Our Greatest Direct Cost

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Abstract

The Department of Defense (DoD) spends a lot of appropriated dollars and relies heavily on prime contractors to procure the goods and services needed to support our national defense. Prime contractors have been traditionally known as vertically integrated manufacturers, meaning they tightly control operations by taking ownership of many stages of the production process. However, there is now a perceived shift to horizontal integration, where they are relying more and more on subcontractors and suppliers for essential components and materials. If the perceived shift is significant enough, it raises important questions about transparency and the DoD's ability to effectively negotiate fair and reasonable contracts when they lack privity with key subcontractors. Through analysis of Cost and Software Data Reports and Defense Pricing, Contracting, and Acquisition Policy (DPCAP) Sole Source Peer Review data, this research confirms that direct material and subcontractor costs have increased as a percentage of total contract expenditures. While there may be ongoing efforts to optimize and potentially consolidate oversight functions within the DoD, addressing the challenges stemming from increasing reliance on subcontractors remains crucial. To address the identified challenges, policy recommendations will be made to include strengthening DoD oversight in a manner that complements ongoing optimization efforts, expanding the Industrial Base Analysis & Sustainment (IBAS) program, and implementing a Small Business Innovation Research (SBIR) Subcontractor Fast Track initiative.

Background

Although there is increased widespread perception that Department of Defense (DoD) subcontracting has grown over time, there has not been enough quantifiable research to review. In 1993, a dinner now known as the "Last Supper" at the Pentagon hosted by then-Secretary of Defense Les Aspin and his deputy, William Perry, was the catalyst of what was to become of the industrial defense base (Tirpak, 1998). The dinner was scheduled to serve as a notice that defense spending was going to fall rapidly. Following major cuts in defense budgets after the Cold War, the industrial base of defense contractors was forced to scale down operations or exit the market altogether. Of those that remained in the market, many were consolidated through mergers and acquisitions (M&A). As a result, the remaining competitors face having to be both suppliers and rivals in order to meet DoD demand. This dynamic known as "competimates" creates critical concerns when the subcontractors withhold crucial cost and pricing information from the prime due to proprietary concerns. In turn, government Contracting Officers are faced

with ensuring fair pricing and effective negotiations when there is lack of information between competimates.

Since the 1990s, the defense sector has consolidated substantially, transitioning from 51 to only five aerospace and defense prime contractors. Therefore, the DoD is increasingly reliant on a small number of contractors for critical defense capabilities. For example, 90% of missiles procured come from only three sources. As a result, promoting competition and ensuring it is fair and open for future programs is a critical DoD priority (Office of the Under Secretary of Defense for Acquisition and Sustainment [OUSD(A&S)], 2022). The trend toward consolidation has continued over the past 8 years due to vertical and horizontal integrations and the entry of private equity firms performing roll ups. The increased consolidation within the defense industry can reduce the availability of key supplies and equipment, diminish vendors' incentives for innovation and performance in government contracts, and lead to supply chain vulnerabilities (OUSD[A&S], 2022).

The Issue

The DoD spends significant dollars on subcontracts and materials. In addition, as the industrial base has consolidated through M&A, competitors supplying each other (competimates) has become more and more common. In many of these instances, subcontractors do not share information critical to negotiations, information they deem proprietary, with the prime contractor. In these instances, government involvement where there is not privity of contract becomes critical. As we have determined through our research, the integration has increased over time, and it is in the DoD's best interest to adjust policies and procedures.

As the government works to modernize its weapon defense, it is increasingly procuring complex services and solutions that align with defense priorities. Updating military technologies and capabilities can lead to a higher proportion of costs to subcontractors and specialized expertise. With imminent emerging technologies, defense contractors have found vertical integration difficult to achieve when there is required specialized expertise across multiple fields and domains. In addition to the modernization of its defense base, the DoD also spends billions on the sustainment of its current fleets. As original equipment manufacturers (OEMs) discontinue parts, creating a pressing need to combat obsolescence and sustain critical defense weapon systems throughout their lifecycles, prime contractors are increasingly integrating legacy system sustainment into their portfolios to remain competitive.

While horizontal and vertical mergers affect the defense industrial base and present competition concerns, vertical mergers in particular have seen an increase in recent years. This vertical integration has the acquiring company controlling different stages of its supply chain, from raw materials to final production distribution. This integration and consolidation can help achieve efficiencies and reduce costs; however, it also is a concern for the DoD. For example, when a company has in-house capabilities down to the second and third-tier supplier levels, it can not only bid on a new platform as the prime contractor but as a "package deal," essentially selecting itself to provide subsystems. The problem with this is that other second and third-tier suppliers might never get a chance to bid on the subsystem work dominated by the prime, and the in-house division, facing no competitor, has little incentive to innovate or keep costs low. As time goes on, competitors may disappear from lack of work, innovation is further stifled, and prices go up (Tirpak, 1998). Ultimately, the DoD concern is that vertical mergers allow the buyer to take anticompetitive actions that provide an advantage over competitors.

The U.S. strategy of reorienting around great power competition in the 2010s and early 2020s has been an area of concern for DoD officials. In a 2022 report, the DoD found that consolidation had made it "increasingly reliant on a small number of contractors for critical

defense capabilities" and observed that further "consolidations that reduce required capability and capacity and the depth of competition would have serious consequences for national security (Nicastro, 2024). One of the outcomes of consolidation, has been linked to overcharging by defense companies, due to the reduction of competition and suppliers has reduced government leverage in negotiating contracts.

A smaller defense base means frequent sole source environments in which prime contractors may have less incentive to aggressively control subcontractor costs. Not having a competitive environment means the contractors face less pressure to minimize overall costs. They might be willing to accept higher subcontractor costs if it simplifies their management. Similarly, the prime can simply pass subcontractor costs directly to the government, which potentially reduces their perceived need to scrutinize costs closely. As most sole source contracts are negotiated on the basis of cost plus a reasonable profit or fee, if a subcontract cost in the base year is higher, the future cost and therefore revenue/gross margin will grow. This significantly negates the prime contractor incentives to control subcontractor costs over time. The government needs to be vigilant in its oversight and use appropriate contract types and incentives to ensure cost control, even in the absence of competition in major program acquisitions.

Quantifying the Shift

This paper and research analyzed contract data from sources such as Defense Pricing, Contract and Acquisition Policy (DPCAP) Price Cost and Finance's (PCF) Sole Source Peer Review data throughout recent years, Government Accountability Office (GAO) assessments, Cost Assessment Data Enterprise's (CADE) Cost and Software Data Reports (CSDR), and insights from industry reports to contextualize these trends and identify areas in which there could be potential policy adjustments.

According to Defense Federal Acquisition Regulation Supplement (DFARS) 234.71, "all contracts, subcontracts, government-performed efforts, and major components (e.g., government furnished equipment), including FMS and programs in sustainment, regardless of acquisition phase and contract type, including non-FAR agreements, valued at more than $50 million, then-year dollars, for current and former ACAT I – II programs" are subject to cost data reporting requirements. As a result, contractors submit their reports to the CADE portal which were used for this analysis.

Cost and Software Data Reports Data

Two different data sets were compiled from CSDR. One report was for major Operations and Support (O&S) programs with data spanning from 2009–2025. The second report was for major Production programs with data from 2015–2025. Direct material costs, inclusive of subcontractor and vendor costs (and inter-work transfers) were compared against total direct costs to determine the proportion of material costs within overall contract expenditures for both data sets.

The below chart titled Comparison of Total Direct Material Subcontractor Costs Over Time presents a side-by-side comparison of the earliest and latest reported direct material and subcontractor cost percentages for various major defense programs providing O&S. The data revealed a consistent upward trend across most programs, indicating a definite increased reliance on subcontractor and material cost from prime contractors when comparing the earliest and latest available reports. While a small amount of programs only show a gradual increase, others—such as Programs 3, 5, and 18—show a dramatic shift. These upward increases support the hypothesis that prime defense contractors have fundamentally shifted their sourcing strategy and business models over time. This first data set consisted of 33 initial major

programs which had available data through the CADE portal. However, of those, only 19 had enough data to evaluate.

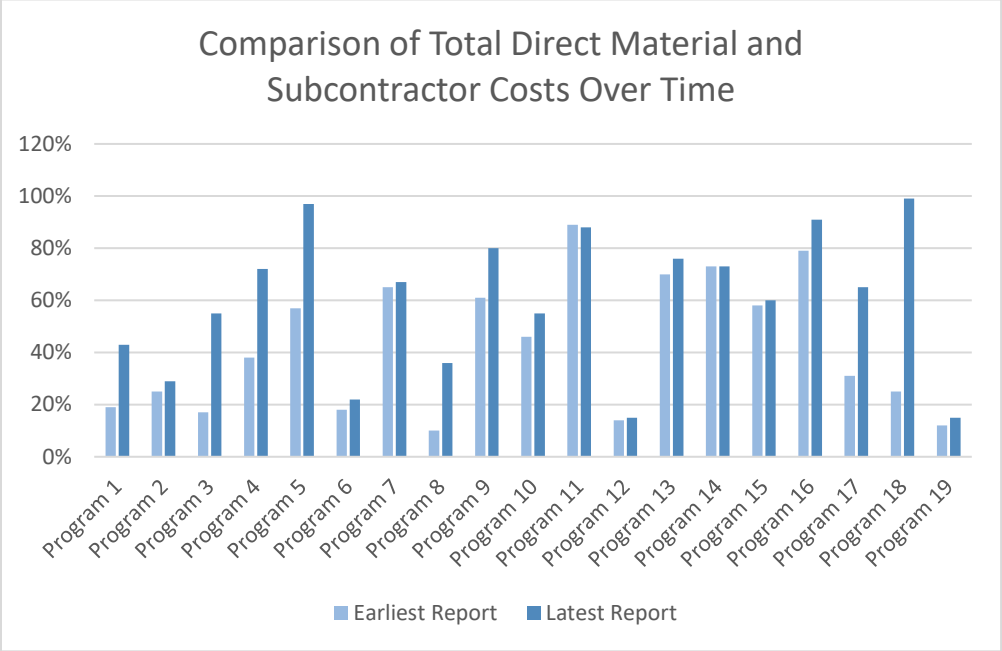

Figure 1. Comparison of Total Direct Material and Subcontractor Costs Over Time

Note: The data presented in this analysis was sourced from the Contractor Acquired Data Entry (CADE) portal, an internal database that is not publicly accessible.

The second data set, which analyzed the 2015-2025 major production programs, consisted of 67 programs with available data through the CADE portal. This data consistently showed a 71% average of total direct material and subcontractor costs. Additionally, it indicated slight overall percentage increases throughout the 10-year period for the majority of the programs. In summary, the following average percentages for 2015–2025 are as follows:

Calendar Years	Average Percentage
2015-2017	71%
2018-2020	73%
2021-2025	71%

Figure 2. Average Percentage for 2015–2025

Note: The data presented in this analysis was sourced from the Contractor Acquired Data Entry (CADE) portal, an internal database that is not publicly accessible.

The data analysis revealed a notable distinction between O&S and production programs. An examination of programs spanning 2009–2025 indicated that O&S programs exhibit consistently higher percentages of total direct material and subcontractor costs compared to production programs analyzed from 2015–2025. This disparity suggests that the unique demands of sustaining existing systems, particularly in the face of obsolescence and the diminishing availability of original equipment manufacturers (OEMs), may be driving prime contractors to rely more heavily on subcontracting for O&S activities.

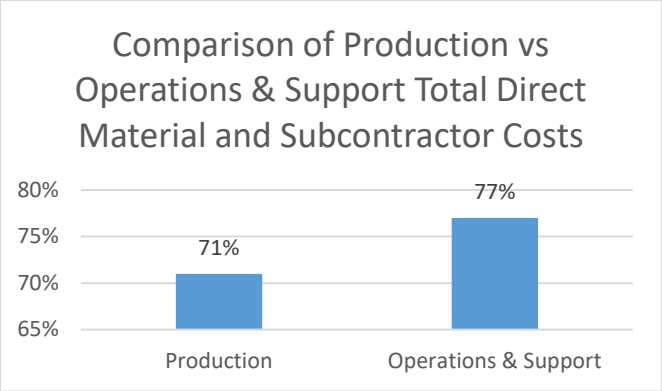

Figure 3. Comparison of Production vs. O&S Total Direct Material and Subcontractor Costs

Note: The data presented in this analysis was sourced from the Contractor Acquired Data Entry (CADE) portal, an internal database that is not publicly accessible.

While Cost and Software Data Reporting (CSDR) offers a wealth of data on defense program actual incurred costs, its potential is often underutilized within the acquisition community. Concerns exist that the data collected through CSDR is not consistently or effectively translated into actionable insights to inform acquisition decisions. This lack of rigorous follow-up limits the ability to leverage CSDR data for proactive cost management, contract negotiations and performance improvements throughout the program lifecycle. As a result, there is a need for enhanced mechanisms to ensure that CSDR findings are systematically integrated into the acquisition process.

Sole Source Peer Review Data

The quantitative analysis performed of DPCAP PCF's Sole Source Peer Reviews were based on data spanning from October 2023 to January 2025. This time encompassed almost 2.5 years of data focusing on preliminary and post negotiation memorandums from phase II of peer reviews from various military services such as Department of the Air Force (DAF), Army, Space Force, Missile Defense Agency (MDA), and many others. In a few rare occasions, preliminary negotiation memorandums from phase I peer reviews were utilized when post negotiation memorandums and phase II peer reviews were not available. The same formula from the CADE report was used to calculate the proportion of material costs within overall contract expenditures. This ratio was then averaged by fiscal year (FY) to reveal yearly trends in material cost allocation.

The FY 2022 data reflected an average percentage of 80.22%, which represented 14 non-service peer reviews. We excluded non-service contracts, such as Contractor Logistics Support, since these are more service oriented over a specific lifecycle. The FY 2023 data essentially mirrored the FY 2022 percentage, with 80.04%, which included 11 peer reviews. The FY 2024 data slightly went down as a percentage, to reflect 78.38%, which included 39 peer reviews. For FY 2025, we were only able to include three peer reviews that met our criteria (i.e., non-service), which had an average percentage for FY 2025 to date of 75.75%. As FY 2025 was only able to include three peer reviews, we will not include the resulting percentage in our analysis. In summary, the following average percentages for FY 2022–2024 are as follows:

Fiscal Year (October 1-September 30)	Average Annual Percentage
2022	80.22%
2023	80.04%
2024	78.38%

Figure 4. Average Annual Percentage per Fiscal Year

Note: The data presented in this analysis was sourced from DPCAP's Price Negotiation Memorandums (PNMs). This dataset is unpublished and not publicly accessible.

This data for the past 3 years reflects minimal change from each FY. We can conclude that the material as a percentage of direct costs have gone up the past 10 years, with the current data averaging about 78%–80%.

While rising direct costs certainly impact bottom lines, their ripple effects extend far beyond immediate budgetary concerns. One crucial area profoundly affected by these escalating costs is the defense supply chain, a complex network responsible for equipping and sustaining military forces. The increasing price of raw materials, manufacturing, and transportation creates significant challenges for maintaining a robust and responsive defense industrial base.

The Supply Chain

Supply chains rely on prime government contractors in order to function effectively. The United States' position as a leader in defense depends on a government supply chain that can keep up with the cost of demand (Greenwood Aerospace, 2023). Ideally, the DoD benefits from competitive market forces that form the basis for contract pricing, dictating the boundaries of what is fair and reasonable (Greenwood Aerospace, 2023). The ability to obtain data necessary to negotiate fair and reasonable prices has been particularly difficult for sole-source items.

The United States relies on its industrial base to provide and develop necessary technologies and weapon systems to maintain our national security objectives. Reliance on our industrial base poses risks, such as depending on foreign and single source suppliers and supply chain inefficiencies (GAO, 2022). This has created a challenge within the DoD, as suppliers for critical materials, such as replacing and upgrading obsolete parts on weapon systems, have not been immune to supply chain inefficiencies (over reliance on any single supplier??). Some of the factors that threaten the resilience of the defense supply chain are the declining capacity and competition in certain defense sectors (i.e., shipbuilding; GAO, 2022). This has caused a declination in the health of the defense industrial base, specifically with the DoD's supply chain, production capacity, and surge readiness, which are areas that are interconnected and are critical to U.S. national security interests.

The National Defense Authorization Act (NDAA) for FY 2025 contains provisions impacting government contractors and their supply chains. In particular, the NDAA requires the Secretary of Defense to implement policies, procedures, and tools to incentivize all DoD contractors to assess and monitor the entire DoD supply chain for potential vulnerabilities and noncompliance risks (Howard et al., 2024). If these vulnerabilities are not addressed within the defense industrial base, this leaves the nation exposed to supply chain disruptions and potential adversarial influence. In order to meet the mission of our armed forces, a healthy defense industrial base built on resiliency, diversity, and secure supply chains is essential (Shinego, 2024).

There has been a shift in subcontracts/materials in proportion to other direct costs. There should be a law/policy to provide a check against the government paying higher prices for contractors to cover their expenses to acquire companies in the supply chain, particularly where that business model precludes effective competition (Vergun, 2022). If nothing is done to combat this, these expenses will continue to be embedded in the contract prices taxpayers pay for products the warfighter must have to perform the mission. This ultimately will mean that the more we pay, the less combat capability we can acquire for a ready force (Vergun, 2022). The DoD needs to be able to perform adequate price reasonableness determinations. Therefore, changes such as legislative reforms are a necessity in order to ensure that the DoD stops paying excessive prices for essential parts/materials (Vergun, 2022).

Competition: The Driving Force

Competition is an indicator of the necessary industrial capability to deliver the systems, key technologies, services, materials, and products the DoD requires to support its mission. The DoD benefits from competitive markets via improved cost, schedule, and performance for products and services needed to support our national defense (OUSD[A&S], 2022). Incentivizing innovation through competition drives the defense industry to offer its best technical solutions at a best-value cost and price. Whereas insufficient competition may leave gaps in filling our mission needs, remove pressures to innovate to outpace other firms, result in higher costs to taxpayers as leading firms leverage their market position to charge more, and raise barriers for new entrants (OUSD[A&S], 2022).

A market that has many buyers and many sellers results in more competition, which drives the pricing for goods and services. The DoD aims to ensure that its contract obligations fund “fair and reasonable” contracts and do not allow contractors to gain excessive profits. The lack of competition may result in the types of excessive profits that the DoD aims to avoid (Congressional Research Service, 2023). When there are two or more offerors for a given contract, the DoD considers this as “adequate price competition.” This method incentivizes contractors to win the contract by bidding a lower price than their competitors.

Contractor Recommendations

Our research trend indicates that the material costs percentage is increasing as a percentage of direct costs. Is there anything that can be done to combat this trend? Is cost control a top priority for DoD contractors? It seems plausible that contractors overall would want to focus on controlling their costs in order to improve their profitability and drive long-term success. If contractors can effectively control and minimize costs, they can improve their competitiveness, increase profitability, and improve operational efficiency.

One of the ways that contractors can look at minimizing their costs is to see where they can reduce costs without reducing or compromising the product or service quality. Cost accounting can assist in helping contractors allocate expenses accurately, understand their cost structure, and make informed decisions regarding pricing, resource allocation, and project cost control strategies (Gowtham, 2024). Another tool that contractors can utilize is a project management technique called earned value management (EVM). EVM is a technique that helps companies monitor project costs, assess performance, and take corrective actions. It does this by integrating cost, schedule, and performance data. This assists in tracking the value of work completed in relation to the planned budget and schedule (Gowtham, 2024).

An additional step contractors can take to control costs is creating a financial plan or budget. This allows companies to effectively monitor their income and expenses over a specified time period. A budget will serve as a cost control measure by setting limits or targets for various cost categories. Monitoring actual expenses against the budget allows companies to

identify deviations and take potential corrective actions (Gowtham, 2024). Effective budget control will help companies manage expenses and maintain financial discipline.

There are many ways in which contractors can apply strategies to assist in controlling costs. Some of these ways include supplier and inventory management, process optimization, waste reduction, and pricing strategies. One of the most important techniques to effectively manage costs is understanding inventory and supplier management. Contractors should continually focus on developing and maintaining strong relationships with their suppliers to negotiate favorable terms and conditions. This also includes maintaining clear communication, selecting reliable and cost-effective suppliers, and building collaborative partnerships to drive cost savings and improve overall supply chain efficiency (Gowtham, 2024). Effective inventory management monitors inventory levels to keep up with business demands, and controlling inventory to minimize carrying costs, reducing obsolete stock, in order to optimize cash flow. Companies can help control and minimize waste by implementing recycling programs, optimizing production processes to minimize scrap or rework, and promoting sustainable practices (Gowtham, 2024). This strategy aids in minimizing waste generation while maximizing resource utilization. Companies can use pricing strategies such as value-based pricing, cost-plus pricing, or dynamic pricing. By setting competitive prices that balance customer value and profitability, they achieve a better understanding of market dynamics, cost structure, in an overall effort to increase revenue (Gowtham, 2024).

While consolidation in the defense industrial base is looked at positively by many in order to gain efficiencies, these companies are thereby also decreasing the overall competition. The companies that vertically integrated can provide the larger defense companies the opportunity (if they choose) to potentially shut out as sellers those traditional second- and third-tier component suppliers who, operating at the lower end of the manufacturing “food chain,” normally sell to the “primes” (Tirpak, 1998). When consolidation occurs, it is important for the DoD to keep competition alive. As the supplier base narrows, it is important to have at least two sources in every sector to compete. Even in a sole-source environment, the DoD can offer ideas to keep competition and innovation alive. For example, a research and development effort can be started up for the next-generation system to create an alternative, rather than depend on one supplier. This also includes the prospect of dissimilar competition by having variants as an example of using different approaches to the mission itself (i.e., competing missiles versus airplanes).

Some argue that the consolidation will remove pressures to innovate and outpace other firms, and ultimately the taxpayer will suffer as leading defense contractors leverage their market position to charge more and raise barriers for new entrants (Tirpak, 2022). As an example, satellite suppliers have dwindled from eight to four over the past 30 plus years. Reduced competition and fewer suppliers will have an adverse effect in filling defense needs.

Subcontractor Management

Typically, prime contractors should have a strong incentive to manage and control costs at the subcontract level because they are financially responsible for the overall project budget and profit margin. In fact, FAR 42.202(e)(2) states that “the prime contractor is responsible for managing its subcontracts” (FAR, 2025). While prime contractors are accountable for delivering products or services within the agreed-upon budget, are they continually trying to monitor and control their subcontractor costs? One of the contract types, Firm Fixed Price (FFP), provides prime contractors with maximum incentive to control costs, as they are responsible for the risk of cost overruns. Prime contractors are ultimately responsible for the allowability of subcontract costs. When they are denied access to their subcontractor records, they need to request field pricing and evaluation of their proposals to determine fair and reasonable prices. Prime

contractors need to effectively manage their subcontractors so they do not risk suboptimal program outcomes and risk being accused of excessive pass-through costs.

One of the ways to manage subcontractor costs is to correlate the most effective contract type with the product or service being procured. The risk associated with the work to be performed is an important factor when selecting a contract type. The contract type and the negotiated contract pricing are interrelated and, therefore, should be considered together. The contract type will include certain elements that create the contractor compensation arrangement. These will usually include any contract financing, profit or fee, and contract terms and conditions. In particular, the use of cost-plus-incentive-fee (CPIF) and fixed-price-incentive Firm Target (FPIF) contracts are highly correlated with programs that achieved better cost and schedule outcomes (OUSD[AT&L], 2016). Through incentives, such as CPIF, the prime contractor can earn more profit/fee by reducing cost, exceeding performance objectives or achieving the desired schedule. An incentive-type contract can allow the government to share in cost savings if structured appropriately. The profit/fee motive is what incentivizes the prime contractor by providing the opportunity to realize an increased profit for attaining cost, performance, or schedule criteria. Negative incentives can also be used to motivate contractors to avoid reduced profitability when desired outcomes fall short. Incentive contracts can be structured to achieve desired objectives through reasonable and attainable targets (OUSD[AT&L], 2016).

Policy Recommendations

Based on the findings which indicate a measurable shift in more direct materials and subcontractor expenditure within defense spending, it is important to acknowledge the impact on cost efficiency, transparency, and DoD Contracting Officers' ability to ensure fair and reasonable pricing. Given the aforementioned challenges, it is imperative there be policy adjustments to strengthen oversight and transparency throughout the DoD.

Increase the DoD's Oversight Capabilities

One of the key challenges that Contracting Officers repeatedly encounter is the inability of prime contractors to obtain cost or pricing data from their subcontractors due to proprietary data resulting in excessive realized profits. Primes continually struggle to provide sufficient justification for pricing, citing competition concerns or trade secrets, which in turn hinder our contracting professionals from assessing fair and reasonable pricing. To address this concern, the DoD should consider requiring prime contractors to formally notify contracting officers when they encounter difficulties in negotiations with their subcontractors. This notification should occur as soon as practicable to enable early intervention and facilitate alternative solutions into acquisition timelines. Increasing government awareness sooner rather than later, as currently seen, could help mitigate cost transparency and prevent government overpayment.

To formalize this requirement, the DoD could amend DFARS PGI 215.404-3, Subcontract Pricing Considerations, to mandate prime contractors to notify when cost data is being denied. Similarly, FAR 15.403-4, Requiring Cost or Pricing Data, could be amended to clarify that subcontractor refusal to provide cost data would be subject to additional reviews.

Alternative strategies could require contractors to justify cost reasonableness through independent audits or similar third-party verification. Formal enforcement by establishing a standardized template that prime contractors must submit to contracting officers detailing their efforts to obtain data as well as methodology for price reasonableness. To ensure compliance with either of these requirements, the DoD could implement penalties for non-compliance, such as withholding fees or reducing incentive payments in addition to making this requirement a key

factor when completing Contractor Performance Assessment Reporting System (CPARS) ratings.

Expansion of Industrial Base Analysis & Sustainment Program

Industrial Base Analysis & Sustainment (IBAS) is an initiative that was established in 2014 under 10 U.S.C. § 2508 to (1) support the monitoring and assessment of the industrial base, (2) address critical issues in the industrial base relating to urgent operational needs, (3) support efforts to expand the industrial base, and (4) address supply chain vulnerabilities. Managed by the Office of the Deputy Assistant Secretary of Defense for Industrial Base Policy (ODASD[IBP]), the program plays a key role in identifying risks to our industrial base. In order to effectively address the impact of increasing horizontal integration within the defense industrial base, IBAS should systematically track deficiencies arising from subcontractor dependencies and the growing reliance on sole-source vendors. To fully leverage IBAS capabilities, it would be beneficial to assess the percentage (by both number and dollar value) of suppliers in the industrial base data that are sole-source, demonstrating the extent of reliance and emphasizing the potential impact of targeted interventions.

IBAS could map and track subcontractor relationships across major defense programs and pinpoint areas where M&As have limited competition. Concurrently, it could identify single points of failure where there have been significant supply chain disruptions. These disruptions could be due to production shortfalls, bankruptcies, or foreign acquisitions. Establishing or developing an early warning indicator framework could identify these reliances early on and help predict vulnerabilities. Tracking and analyzing these risks could help anticipate and mitigate these issues in future major defense spending. IBAS has historically been used to create new domestic sources, often resulting in sole-source suppliers where no domestic alternative existed. A significant and potentially transformative shift would be to strategically leverage IBAS to create and expand the pool of domestic vendors who can compete with each other, fostering a more resilient and cost-effective industrial base.

The program can fund initiatives which bolster the DoD industrial base. Currently it invests heavily in six priority industrial capability development areas. These are Submarine and Shipbuilding Workforce, Kinetic Weapons, Microelectronics, Critical Chemicals, Castings and Forgings, and Energy Storage and Batteries (OUSD[A&S], n.d.). Funding could be prioritized in finding alternative suppliers where consolidation has previously decreased competition, particularly in areas where sole-source reliance is demonstrably high. This funding could incentivize new entrants, increasing competition at the subcontractor level and mitigating the risks associated with concentrated supply chains.

Small Business Innovation Research Subcontractor Fast Track

The Small Business Innovation Research (SBIR) program was established in 1982 by Congress to stimulate technological innovation by providing research and development (R&D) funds to small businesses with 500 or fewer employees. A proposed Subcontractor Fast Track SBIR would target small businesses that could potentially become alternative suppliers for the prime defense industrial base. A SBIR of this nature could enable small businesses to scale their production in order to supply big defense contractors with critical components or services. Participants of this SBIR could potentially enhance competition, reduce the supply chain risk by diversifying subcontractor portfolios, and stimulate economic growth and advancements in the military defense sector.

In the interest of establishing a SBIR Subcontract Fast Track, it is important to first identify critical programs or components which already struggle with limited suppliers. After successful award to these small businesses, it is important to continue to provide support and

resources beyond the contract. Offering technical assistance and mentorship is vital in ensuring they successfully develop and scale their ideas and innovations. Doing so would establish supplier diversity for critical defense needs and improved fresh innovative perspective to an already dated defense base.

Conclusion

Increased reliance of the DoD's prime contractors on subcontractors has heavily impacted and transformed the way the defense industrial base does business with the government. It has shifted cost structures and likely reduced transparency in government acquisitions. It is imperative that the government take action to ensure fair and reasonable pricing to protect taxpayer dollars. The consequences of unreformed consolidation demand policy intervention.

Our research has indicated that there has been an increase in material and subcontractor costs, in proportion to overall direct costs, over the past 15 years. Within the past 3 years, we found that material costs have averaged about 80%. Furthermore, our research data concluded that these costs for the same programs over time have also been on the rise. Since the consolidation of the defense industry over the past 30 years, there has been a shift in prime-contractor business models which has resulted in these prime-contractors subcontracting more work (in particular on the production of weapon systems) and concentrating on systems integration. These consolidations have led to an increasing reliance on a smaller number of contractors for critical defense capabilities. Consequently, promoting competition and ensuring it is fair and open for future programs should be a top priority.

One of the ways that contractors have taken control over their supply chain due to supply risk vulnerabilities, among other concerns, is to become a vertical integrator of their materials in two or more steps in the supply chain. When this process is done well, the benefits can include lower costs, greater control, and improved supply chain visibility. However, this can also lead to greater costs which comes from the upfront investment from acquiring or merging with suppliers, manufacturers, additional facilities and employees, and new business processes. Effectively, this also reduces competition, which helps to ensure that buying decisions are fair and objective. The future of the DoD will be shaped by steps taken now to increase competition and the number of suppliers in the defense industrial base.

In order to counter the rising shift in direct materials and subcontractor costs, we need to take necessary action, from promoting competition, expanding the defense industrial base, and reducing barriers for small businesses to compete to implementing policies that overall would increase our supplier diversity, reduce costs, and create innovative efficiencies. Imagine a future where our supply base thrives, fueled by healthy competition and a skilled workforce. To achieve this vision, we must delve deeper into understanding the dynamics of competition within our supplier network. Future research should specifically analyze competition rates within the supply base, examining the number of qualified suppliers vying for contracts at various tiers. Attracting and retaining top talent, while simultaneously bridging any skill gaps, will be crucial for fostering collaborative growth with all stakeholders. Controlling unit prices is another critical challenge. Building strong supplier relationships and negotiating advantageous terms are promising avenues to explore. Finally, dissecting unit prices based on acquisition type—sole source, competitive bids, off-the-shelf solutions, modified commercial products, and so on—will illuminate how different procurement strategies influence cost and unlock opportunities for optimization. This unit price analysis should further be broken down by acquisition type (sole source, competitive, COTS, etc.) to identify specific areas where cost control measures are most effective. This multifaceted approach will pave the way for a more robust and resilient

supply base. Additionally, further investigation into contract types and their correlation with subcontracting costs is also warranted.

Disclaimer

The views expressed are those of the author(s) and do not reflect the official policy or position of the Naval Postgraduate School, US Navy, Department of Defense, or the US Government.

References

Congressional Research Service. (2023, December 19). *Department of Defense contract pricing* (R47879). https://crsreports.congress.gov

Defense Federal Acquisition Regulation Supplement 234.71, Cost and Software Data Reporting (2025). Acquisition.gov https://www.acquisition.gov/dfars/subpart-234.71-cost-and-software-data-reporting

FAR 42.202, Assignment of Contract Administration (2025). Acquisition.gov

GAO. (2022, July 7). *Defense industrial base: DoD should take actions to strengthen its risk mitigation approach*. https://www.gao.gov/products/gao-22-104154

Gowtham, S. (2024, January 8). *Cost control: Definition, techniques, methods, strategies & examples*. https://happay.com/blog/cost-control/

Greenwood Aerospace. (2023, June 23) *Regulating supply and demand: Prime government contractor's influence on aerospace procurement*. https://www.governmentprocurement.com/news/prime-government-contractors

Howard, T., et al. (2024, December 18). *NDAA provisions impacting government contractors and their supply chains*. https://www.wiley.law/alert-NDAA-Provisions-Impacting-Governments-Contractors-and-their-Supply-chains

Nicastro, L. (2024, September 23). *The US defense industrial base: Background and issues for Congress* (R47751). Congressional Research Service. https://www.congress.gov/crs-product/R47751

Office of the Under Secretary of Defense for Acquisition and Sustainment. (n.d.). *Assistant Secretary of Defense for Industrial Base Policy*. OUSD A&S - Industrial Base Policy. https://www.businessdefense.gov/ibr/mceip/icam/index.html

Office of the Under Secretary of Defense for Acquisition and Sustainment. (2022, February). *State of competition within the defense industrial base*. DoD. https://media.defense.gov/2022/feb/15/2002939087/-1/-1/1/state-of-competition-within-the-defense-industrial-base.pdf

Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. (2016, March). *Guidance on using incentive and other contract types* (USA001270-16-DPAP). https://www.acq.osd.mil/dpap/policy/policyvault/USA001270-16-DPAP.pdf

Sanders, R. (2024, November 21) *Why supply chain cost reduction has become a boardroom discussion*. EY. https://www.ey.com/en_us?coo/why-supply-chain-cost-has-become-a-boardroom-discussion

Shinego, W. (2024, December 4). *DoD leverages Defense Production Act to galvanize critical supply chains*. DoD. https://www.defense.gov/news/news-stories/article/aricle/3985393/dod-leverages-defense-production-act-to-galvanize-critical-supply-chains/

Tirpak, J. A. (1998, July 1). The distillation of the defense industry. *Air & Space Forces Magazine*. https://www.airandspaceforces.com/article/0798industry/

Tirpak, J. A. (2022, February 16). New Pentagon report raises alarm over industry consolidation, future of competition. *Air & Space Forces Magazine*. https://www.airandspaceforces.com/new-pentagon-report-raises-alarm-over-industry-consolidation-future-of-competition/

Vergun, D. (2022, January 19). *DoD hopes for legislative action on product, services pricing policy*. DoD News. https://defense.gov/news/news-stories/article/article/2904198/dod-hopes-for-legislative-action-on-product-services-pricing-policy/

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