CREC CENTER FOR REGIONAL ECONOMIC COMPETITIVENESS

Southwest Pennsylvania

Defense Contracts Analysis

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Executive Summary

Ongoing changes within the defense industry and the large sums of money allocated by the U.S. government to defense and homeland security efforts make it essential that Southwest Pennsylvania (SW PA) thoroughly understand the far-reaching dynamics, assets, and opportunities of its defense-related supply chains. To this end, the Center for Regional Economic Competitiveness (CREC) conducted a comprehensive federal contracts analysis of the region's defense industrial base. The findings from this analysis indicate that SW PA should pursue strategies to promote its already robust defense industry cluster in order to provide firms and workers with more economic opportunities.

Contracting with the Department of Defense (DOD) represents a large potential market for firms working in industries that support supply chains related to the defense sector. The DOD awards over $400 billion in contracts annually across the United States and Pennsylvania continues to be a major destination for these defense contract dollars. The Commonwealth consistently ranks among the top ten states for federal-directed defense contract spending. CREC's analysis suggests that a meaningful amount of this DOD contract work is performed in SW PA. In Fiscal Year (FY) 2020, the region accounted for over 30 percent of the value of all DOD contracts whose work was performed within the commonwealth, on par with its overall contribution to Pennsylvania's gross state product.

The regional defense economy employed more than 150,000 people in 2020. However, sector employment growth has not kept up with state and national growth trends. While the defense sector has grown by 21 percent across the U.S. over the last ten years, and 11 percent statewide, SW PA's defense economy has grown by only 2.5 percent. A closer look at SW PA's most specialized defense sector industries suggest that the cluster is dominated by industries in metalworking and metal parts manufacturing that have shed jobs in the past decade. Despite this trend, other areas of SW PA's defense industry cluster have grown. Knowledge-based research and development jobs, especially in the fields of nanotechnology and physical, engineering, and life sciences have grown rapidly, achieving notable levels of job concentration and specialization when compared to the rest of the U.S.

Defense contract opportunities are especially rife for those in the manufacturing and professional, scientific, and technical services sectors, which account for 95 cents of every $1 dollar spent on defense contract-related work performed in the region. Large manufacturers, like Bechtel, Fluor Corporation, and DRS Laurel Technologies are important regional drivers for manufacturing-centered DOD contract spending. Johnstown-based DRS Laurel Technologies, for instance, received a $247 million DOD contract in FY2020 for work related to electronics and communications equipment. There is a wider array of firms involved in research and development activities, including work being done at Carnegie Mellon University and the University of Pittsburgh.

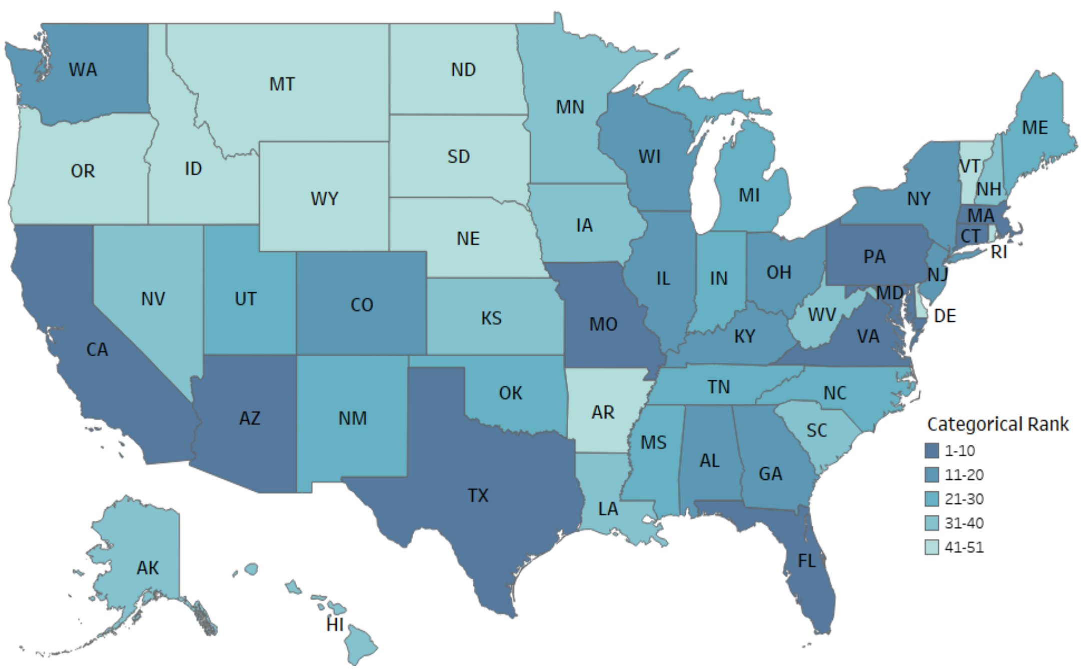
The following sections of this report include the findings from CREC's analysis and ways to leverage this information to develop strategies that promote regional defense sector growth and increase the abilities of businesses in SW PA to secure a greater share of defense contracts.

Introduction

Rapid and ongoing changes within the defense industry make it imperative that Southwest Pennsylvania (SW PA) thoroughly understand the far-reaching dynamics, assets, and opportunities of its defense-related supply chains.[1] To support this effort, the Center for Regional Economic Competitiveness (CREC) conducted a comprehensive federal contracts analysis of the region's defense industrial base. The findings from this analysis indicate that SW PA should actively promote a robust defense industry cluster to provide businesses and workers more economic opportunities.

A large potential market exists in Department of Defense (DOD) contract awards. The DOD awarded nearly $404 billion in contracts in the most recent fiscal year analyzed.[2] Figure 1 shows that California, Virginia, Texas, Florida, and Maryland are among the states receiving the largest dollar amounts from contract awards. Pennsylvania has the 6th largest state economy and ranks 7th in total DOD contract awards, but just 24th in DOD contracts as a percent of state gross state product. To increase market share in defense contracts requires a dedicated focus on the part of the policymakers and industry stakeholders.

Figure 1: Ranking of Total Defense Contract Spending by State, FY 2019



Source: USASpending.gov, derived from Office of Local Defense and Community Cooperation (OLDCC) analysis

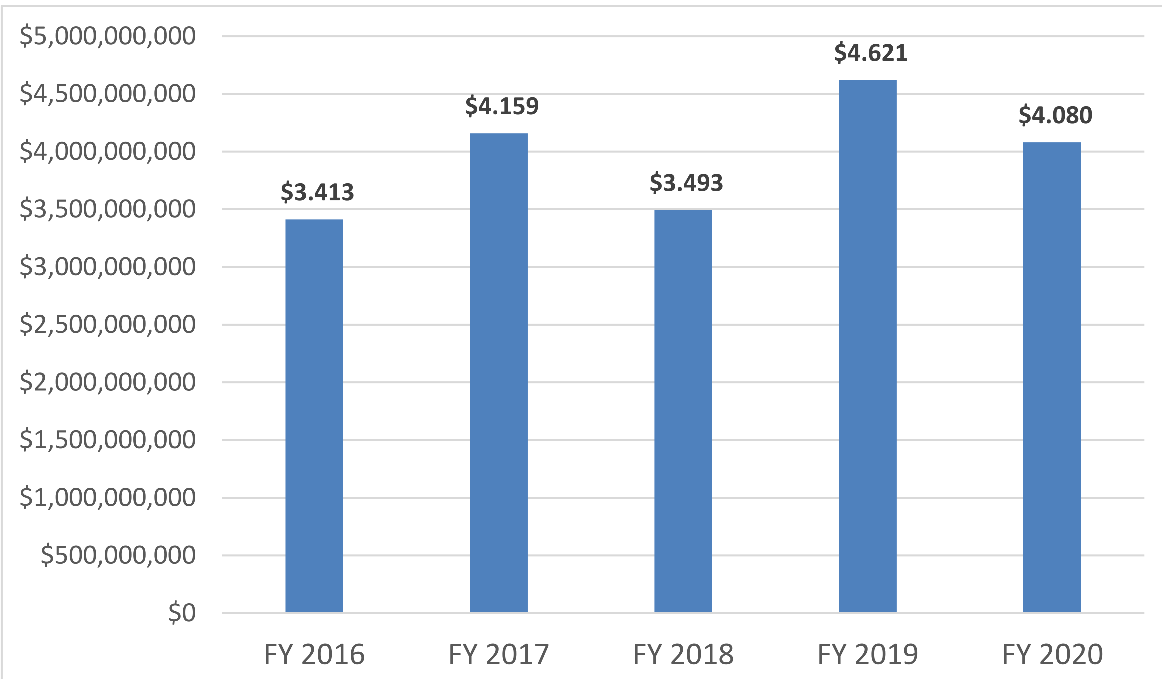
[1] Southwest Pennsylvania includes Lawrence, Beaver, Washington, Greene, Butler, Allegheny, Fayette, Armstrong, Somerset, Westmoreland, Indiana, Cambria counties.

[2] U.S. Department of Defense Office of Local Defense Community Cooperation, "Defense Spending by State Fiscal Year 2019." Defense Spending by State, Fiscal Year 2019 (oldcc.gov)

Southwest Pennsylvania Defense Economy Overview

SW PA contractors have attracted over $19 billion in DOD contract obligations over the past five years. Transaction-level contract data from the Department of Defense suggests that obligated DOD dollars flowing into the region have fluctuated somewhat from year to year but overall remain relatively stable. In three of the past four fiscal years, the region has garnered over $4 billion in DOD obligations, with the exception of FY2018, which saw a 16% decline to just below $3.5 billion. The value of all Department of Defense obligations reached its highest level in FY2019, totaling more than $4.62 billion. In FY2020, the region saw the total value of DOD obligations decrease by approximately $530 million.

Figure 2: Total DOD Contract Obligations, Southwest Pennsylvania, FY 2016 – 2020



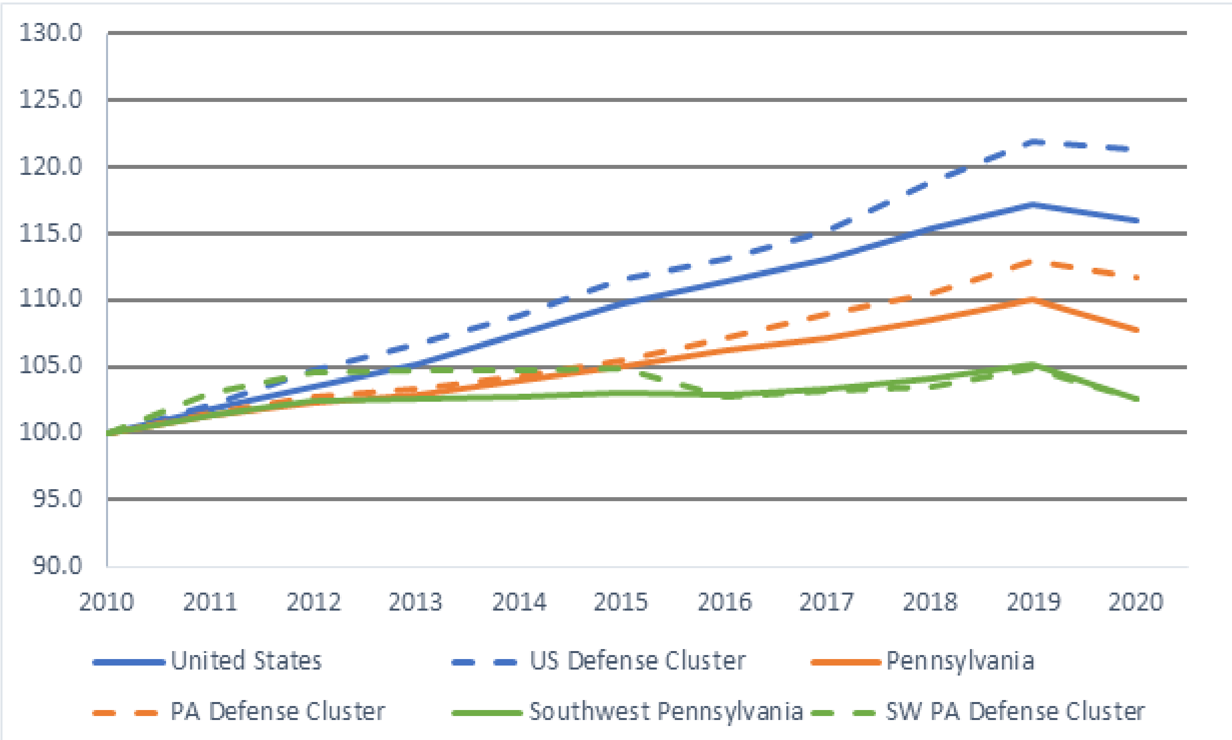
Source: USASpending.gov, total DOD prime contract award transactions where place of performance is SW PA. Billions of dollars

Data suggests many more Southwest Pennsylvania companies could capitalize on DOD contracts than currently do so. There are approximately 5,700 companies in the region (accounting for more than 150,000 jobs) in industries that provide goods or services to the defense sector.[3] However, the region's defense-related employment growth has slowed compared to state and national trends since 2013. Southwest Pennsylvania's defense cluster

[3] CREC has identified 231 industries that are important to maintaining the nation's defense industrial base – Defense Industry Cluster. Not all businesses in the cluster are actively involved in the defense supply chain.

employment has grown by approximately 2.5% since 2010, compared to 11% at the state and 21% percent at the national levels.[4] [5]

Figure 3: Index of Employment Growth, 2010 – 2020



Source: CREC analysis of EMSI data

The cluster map for defense industries in Figure 4 provides important information about the dynamics of the Southwest Pennsylvania defense economy and the importance of diversification. The ten industries represented are those with the largest location quotients in the Southwest Pennsylvania region.[6] Large bubbles on the chart represent industry clusters with large workforces, many of them related to steel, nonferrous metals, and metalworking machinery manufacturing.

[4] The defense sector also was more resilient during the coronavirus pandemic than the economy as a whole: while total employment levels at the national, state, and local level experienced an average employment decline of 1.9%, defense sector employment shrunk by an average of 1.2%.

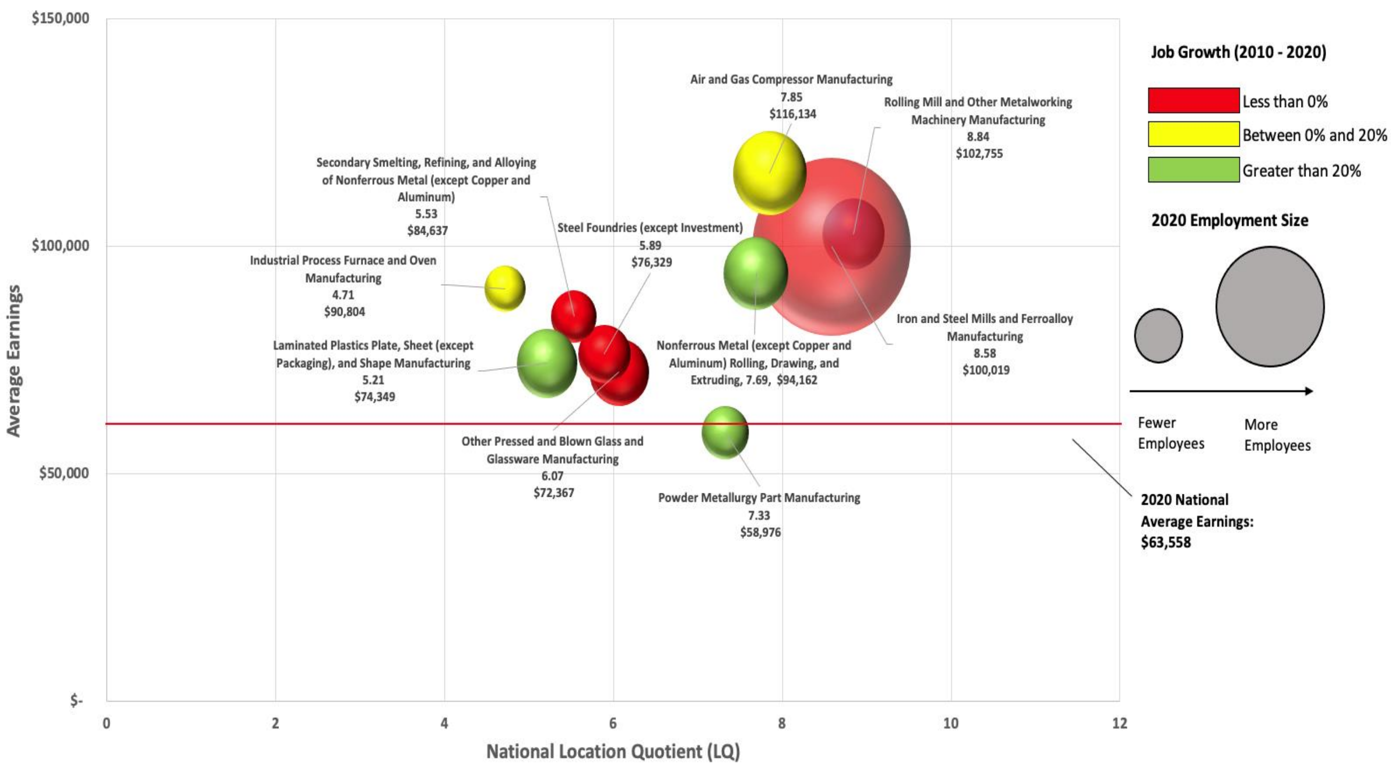
[5] The fastest-growing industries that have driven United States defense sector growth are: General Warehousing and Storage (110%); Medicinal and Botanical Manufacturing (75%); Light Truck and Utility Vehicle Manufacturing (86%); Plastics Packaging Film and Sheet Manufacturing (78%); and Administrative Management and General Management Consulting Services (66%).

[6] A location quotient (LQ) measures a region's industrial specialization relative to the nation. The LQ is computed as the industry's share of regional total employment divided by the industry's share of the national total. For example, an LQ of 1.0 in manufacturing means that the region and the nation are equally specialized; while an LQ of 2.0 means that the region has twice the employment concentration as the nation.

As seen in Figure 4, five of the ten most specialized industries in SW PA have experienced reductions in total employment over the last ten years. This group of shrinking industries includes one of the region's largest and most specialized, Iron and Steel Mills Ferroalloy Manufacturing, which has shed more than 15% of its jobs between 2010 and 2020. It is likely that the gradual declines in employment in the region's most specialized industries have weighed down defense sector growth in comparison to state and national trends. However, there is evidence of rapid growth in other areas of SW PA's defense industry cluster, particularly in knowledge-based industries. For instance, Research and Development in the Physical, Engineering, and Life Sciences enjoys a moderately high location quotient of 2.19 and has grown by approximately 37% within the last ten years. Research and Development in Nanotechnology, a smaller industry with a higher level of regional concentration, grew from just 16 to 745 jobs in the same ten-year period, a growth rate of over 4,000%.

Changes in the size of these industries significantly influence the employment prospects for those living in Southwest Pennsylvania. Recognizing opportunities to grow market share and to diversify the customer base from products or services offered for defense purposes to meet commercial needs is an effective strategy to maintain strong economic performance. Likewise, commercial applications drive many of these sectors, but they offer opportunities to provide innovative new products or services in response to the defense industry's needs.

Figure 4: Southwest Pennsylvania Defense Cluster Industries with High Levels of Specialization (2010 - 2020)



Source: CREC analysis of EMSI data

Southwest Pennsylvania Defense Contracts Analysis

Understanding where current DOD work is being performed in the region provides even more specific intelligence on vital industries and businesses tied to the defense economy. Firms in the region received over $19 billion in Department of Defense contract award obligations between 2016 and 2020. The leading contract awards were for Research and Development, Power Boiler and Heat Exchange Manufacturing, and Small Arms Manufacturing. Figure 5 shows the top 20 defense contracting industries in the region in the past five years, in terms of contract value. More than $9 of every $10 of DOD contract transactions (96.6%) flowed to these 20 industries in Southwest Pennsylvania.

Figure 5: Defense Contract Obligations by Industry in Southwest Pennsylvania, FY2016 – 2020

NAICS	Industry	DOD Contracts
541715	Research and Development in the Physical, Engineering, And Life Sciences (Except Nanotechnology and Biotechnology)*	$ 8,717,378,043
332410	Power Boiler and Heat Exchanger Manufacturing	$ 6,975,220,932
332994	Small Arms, Ordnance, And Ordnance Accessories Manufacturing	$ 661,249,140
334511	Search, Detection, Navigation, Guidance, Aeronautical, And Nautical System and Instrument Manufacturing	$ 610,664,864
334419	Other Electronic Component Manufacturing	$ 384,563,370
237990	Other Heavy and Civil Engineering Construction	$ 360,592,829
541330	Engineering Services	$ 321,678,513
236220	Commercial and Institutional Building Construction	$ 184,035,725
334290	Other Communications Equipment Manufacturing	$ 125,479,124
423450	Medical, Dental, And Hospital Equipment and Supplies Merchant Wholesalers	$ 103,257,810
561611	Investigation Services	$ 90,436,583
332993	Ammunition (Except Small Arms) Manufacturing	$ 86,127,067
336992	Military Armored Vehicle, Tank, And Tank Component Manufacturing	$ 84,788,112
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	$ 78,599,380
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	$ 78,468,779
336390	Other Motor Vehicle Parts Manufacturing	$ 71,275,292
335312	Motor and Generator Manufacturing	$ 41,698,808
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	$ 40,444,639
334519	Other Measuring and Controlling Device Manufacturing	$ 38,319,965
561210	Facilities Support Services	$ 34,545,838
	Top 20 Total	**$ 19,088,824,814**
	Top 20 as % of Total Southwest Pennsylvania Contracts	***96.6%***
	SW PA DOD Contracts total	**$ 19,766,159,996**

In addition to the Department of Defense, other agencies also contribute to the nation's defense and national security industrial base. The combined work of the Department of Defense, Energy, Justice, Homeland Security, and the National Aeronautics and Space Administration represent a broader Defense & National Security Cluster. In Southwest Pennsylvania, there were 2,069 firms that had contracted with an agency related to defense and national security and 1,475 firms received at least $10,000 in federal obligations in the last five fiscal years.[7]

Roughly 1,477 businesses contracted directly with the Department of Defense, as DOD spending in the region far outpaced all other agencies combined. This includes two of the region's top federal contract awardees in recent years: Bechtel National Inc, which maintains a subsidiary headquarters in Monroeville; and Fluor Marine Propulsion LLC, which operates the Bettis Atomic Power Laboratory in West Mifflin on behalf of the federal government.[8] Other notable appearances in the top ten include Carnegie Mellon University and DRS Laurel Technologies, a naval electronics firm based out of Johnstown.

Figure 6: Leading Federal Contracting Businesses in Southwest Pennsylvania, FY2016-2020

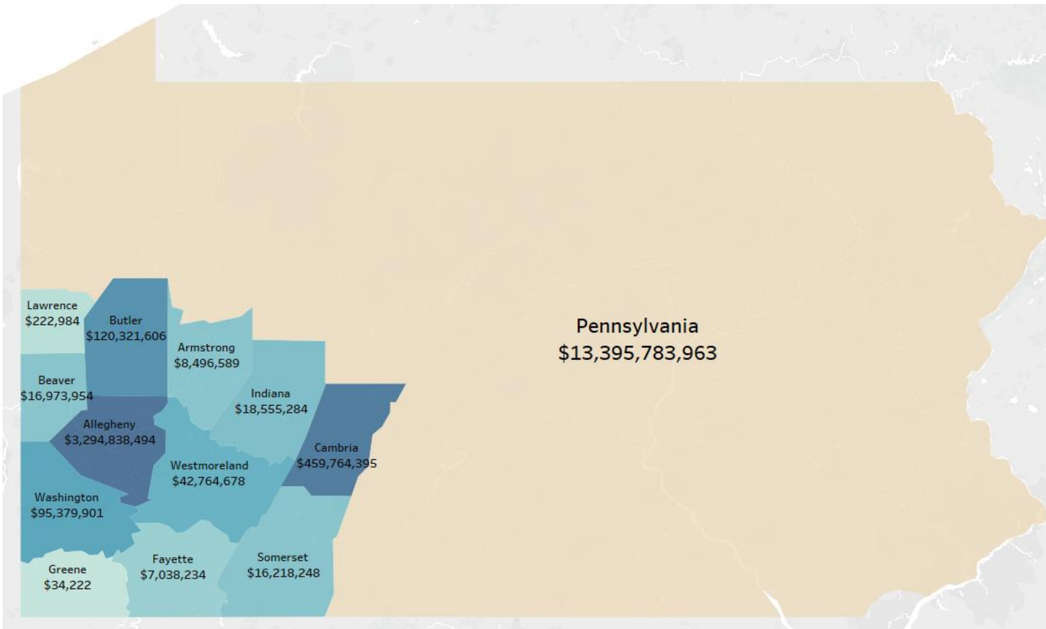
Company	Agency	Primary Product Provided	City	DOD Contracts
Bechtel Plant Machinery, Inc.	DOD	Power Boiler and Heat Exchanger Manufacturing	Monroeville	$ 5,245,863,452
Fluor Marine Propulsion, LLC	DOD	Research and Development in the Physical, Engineering, and Life Sciences (Except Nanotechnology and Biotechnology)	West Mifflin	$ 4,501,208,484
Fluor Marine Propulsion, LLC	DOE	Research and Development in the Physical, Engineering, and Life Sciences (Except Nanotechnology and Biotechnology)	West Mifflin	$ 3,766,773,542
Bechtel Marine Propulsion Corporation	DOE	Facilities Support Services	West Mifflin	$ 3,374,001,264
Bechtel Marine Propulsion Corporation	DOD	Research and Development in the Physical, Engineering, and Life Sciences (Except Nanotechnology and Biotechnology)	West Mifflin	$ 3,222,530,327
Bechtel Plant Machinery, Inc.	DOD	Power Boiler and Heat Exchanger Manufacturing	Pittsburgh	$ 1,719,008,795
Carnegie Mellon University	DOD	Research and Development in the Physical, Engineering, and Life Sciences (Except Nanotechnology and Biotechnology)	Pittsburgh	$ 718,750,253
Kongsberg Defense & Aerospace AS	DOD	Small Arms, Ordnance, And Ordnance Accessories Manufacturing	Johnstown	$ 656,714,277
DRS Laurel Technologies	DOD	Search, Detection, Navigation, Guidance, Aeronautical, And Nautical System and Instrument Manufacturing	Johnstown	$ 426,820,892
DRS Laurel Technologies	DOD	Other Electronic Component Manufacturing	Johnstown	$ 375,415,722

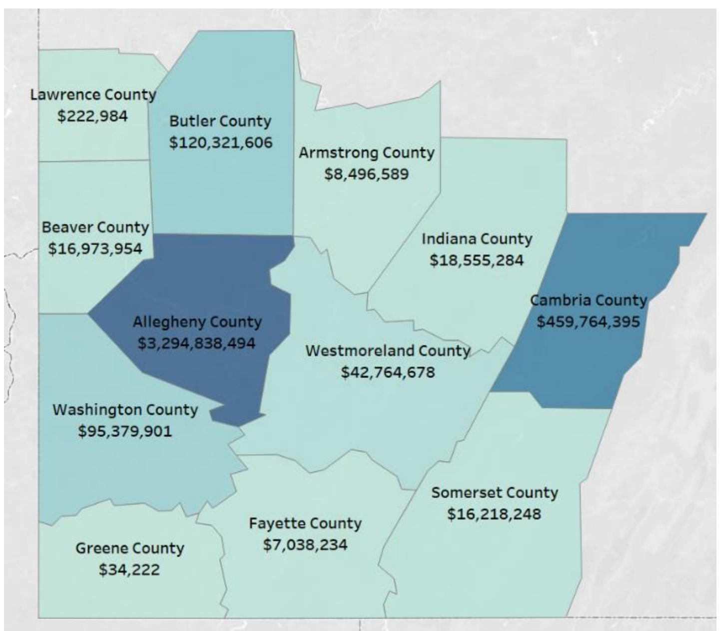
[7] USASpending.gov, DOD prime contract award transactions where "place of performance" is SW PA.

[8] Department of Energy, "Naval Nuclear Laboratory Contract," National Nuclear Security Administration, https://www.energy.gov/nnsa/naval-nuclear-laboratory-contract

Department of Defense contract obligations for work performed in the SW PA region reached over $4 billion dollars, or approximately 30.5% of the state total received obligations in FY2020. The map in Figure 7 shows the distribution of these obligations by the contract's primary place of performance.

Figure 7: Southwest Pennsylvania Defense Contract Obligations in FY2020





Allegheny County, which includes the city of Pittsburgh, captured the lion's share of all defense contracts in the Southwest Pennsylvania region. Led by contractors such as Bechtel Plant Machinery, Inc.; Fluor Marine Propulsion, LLC; and Carnegie Mellon University, the county accounted for over 80% of the DOD's defense contract obligations in FY2020. Cambria County, in the Johnstown metropolitan region, followed, accounting for approximately 11.3% of all regional defense contract dollars. Allegheny and Cambria counties combined accounted for 92% of all defense contract obligations. The other counties in the region were found to possess a much smaller share of total defense contract obligations. The Pittsburgh metropolitan counties of Butler, Washington, and Westmoreland were the only other counties to obtain a share of contract dollars greater than 1%.

New DOD contracts awarded in FY2020 to businesses for work performed in the region were concentrated in a handful of industries and contractors. The top ten industries that received new contracts made up approximately 73% of all newly awarded defense contract dollars in the region. Topping the list includes research and development in the physical, engineering, and life sciences as well as electronic component and computer terminal manufacturing. Figure 8 lists the top ten industry sectors in Southwest Pennsylvania by new contract dollars awarded in FY2020. As the table shows, DOD contracts in 2020 were highly concentrated in research and development.

Figure 8: Top Ten Defense Industry Sectors in Southwest Pennsylvania by Newly Awarded Contract Amount, FY2020

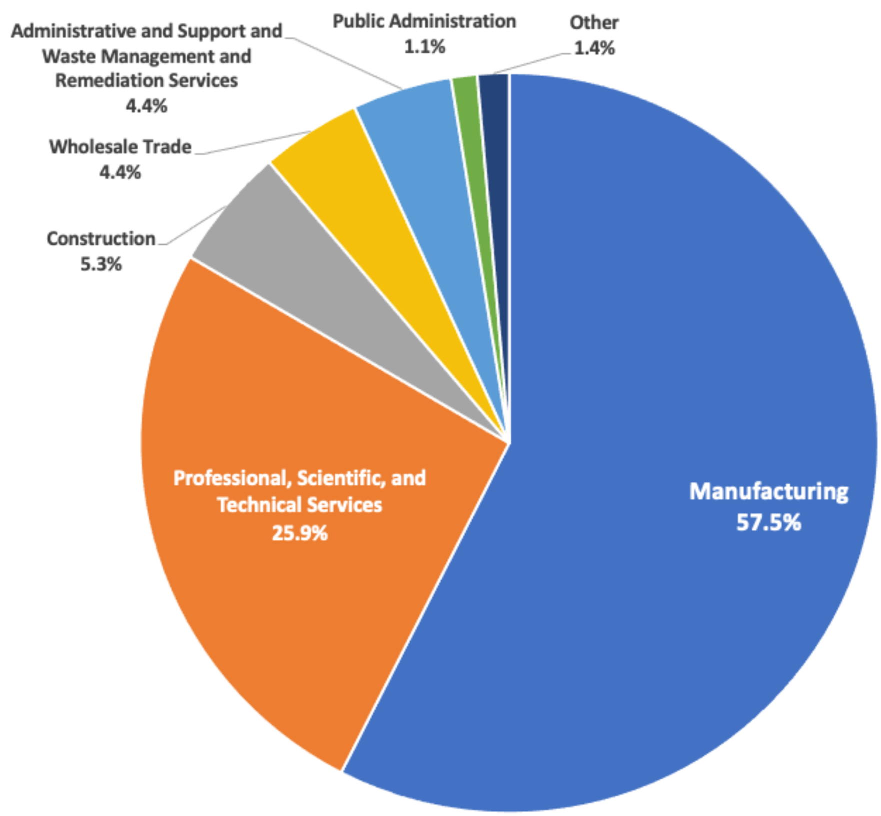
Rank	Industry	Obligated Dollar Amount	% of Total Value
1	Research and Development in the Physical, Engineering, and Life Sciences (Except Nanotechnology and Biotechnology)	$ 130,995,353	16.4%
2	Other Electronic Component Manufacturing	$ 85,020,432	10.6%
3	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	$ 80,720,816	10.1%
4	Small Arms, Ordnance, And Ordnance Accessories Manufacturing	$ 69,807,157	8.7%
5	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	$ 58,849,058	7.3%
6	Engineering Services	$ 42,828,208	5.3%
7	Medical, Dental, And Hospital Equipment and Supplies Merchant Wholesalers	$ 35,030,412	4.4%
8	Other Heavy and Civil Engineering Construction	$ 29,011,491	3.6%
9	Other Communications Equipment Manufacturing	$ 27,899,201	3.5%
10	Investigation Services	$ 27,021,854	3.4%
	Top Ten Industries Total	*$ 587,183,984*	*73.3%*
	All Other	*$ 213,935,924*	*26.7%*
	Total	***$ 801,119,908***	***100.0%***

Source: USAspending.gov, based on total obligated dollar amount of prime awards whose base award was awarded in Fiscal Year 2020.

Figure 9 reveals that manufacturing and professional, scientific, and technical services made up over 80% of newly awarded DOD contracts in Fiscal Year 2020. Taking into account the previous five fiscal years, these two industry categories account for 95 cents of every $1 dollar spent on defense contract-related work performed in the region. Employment data suggests these vital industries appear to be on dissimilar trajectories. The manufacturing sector, which is responsible for nearly 60% of newly awarded 2020 defense contract dollars, has steadily declined in the area. The region had approximately 64,070 defense-related manufacturing jobs in 2020, a reduction of roughly 3.5% from 2010's manufacturing employment levels.

In contrast, professional, scientific, and technical services, making up over 25% of newly awarded defense contracts, has seen significant growth. The sector comprised more than 119,000 jobs in 2020, boasting a 10-year growth rate of 14.2%. The field of Research and Development in the Physical, Engineering, and Life Sciences, found within this sector, has shown itself to be a particular bright spot, featuring high average wages and a 37% growth rate in the last ten years.

Figure 9: Distribution of Defense Industry Sectors in Southwest Pennsylvania (by % of Newly Awarded Contract Dollars), FY2020



Source: USAspending.gov, based on total obligated dollar amount of prime awards whose base award was awarded in Fiscal Year 2020

In 2020, Southwest Pennsylvania companies primarily contracted with the Department of Defense to provide electronics and communication equipment, and services. Figure 10 shows the top ten defense products and services provided by companies in the region for newly awarded defense contracts in Fiscal Year 2020. These ten products and services account for virtually all the value of newly awarded DOD contracts in the region. Although these product and service categories are general, they can inform targeted strategies of support. For instance, how can policymakers capitalize on the region's specialization in communications equipment and services, especially those related to research, to develop new opportunities for regional suppliers and capture a larger market share in the defense and commercial marketplaces, both nationally and internationally.

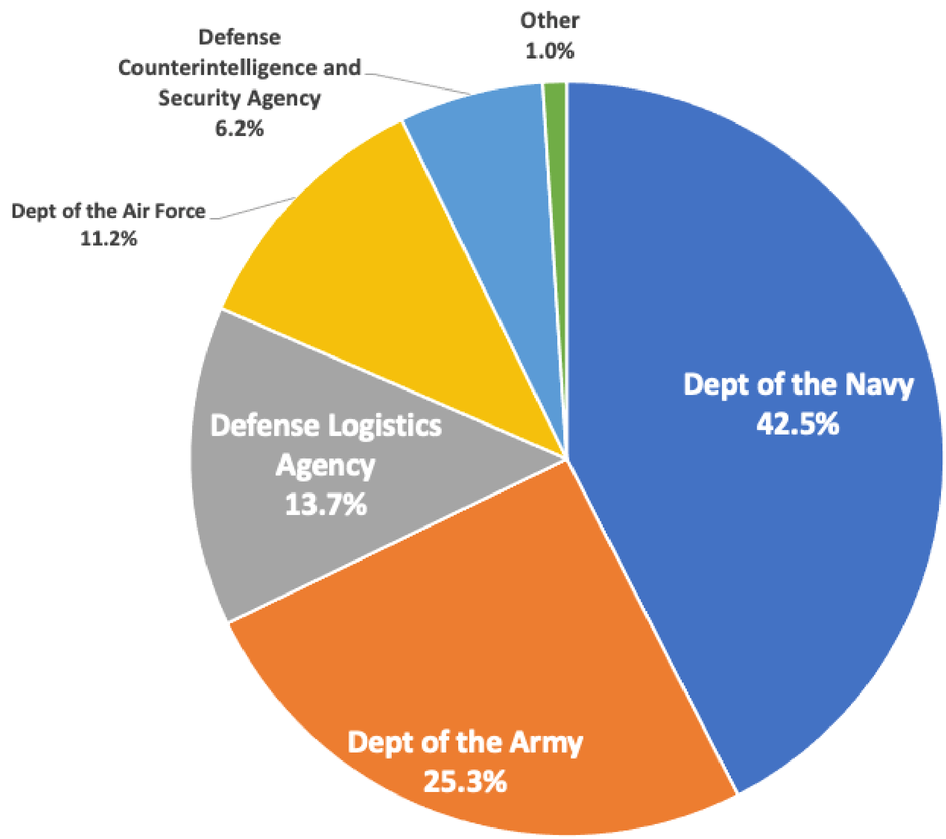
Figure 10: Top Ten Defense Products or Services Provided by Southwest Pennsylvania Companies, FY2020

Rank	Defense Product / Service	Obligated Dollar Amount	% of Total Value
1	Electronics and Communication Equipment	$ 288,460,127	36.0%
2	Services	$ 200,814,830	25.1%
3	All Others Not Identifiable to Procurement Program	$ 157,450,865	19.7%
4	Medical and Dental Supplies and Equipment	$ 37,510,359	4.7%
5	Ships	$ 31,726,365	4.0%
6	Construction	$ 27,434,853	3.4%
7	Airframes and Spares	$ 20,181,072	2.5%
8	Other Aircraft Equipment	$ 14,981,728	1.9%
9	Combat Vehicles	$ 14,556,954	1.8%
10	Missile and Space Systems	$ 2,661,531	0.3%
	Top Ten Products/Services Total	$ 795,778,684	99.3%
	All Other	$ 5,341,224	0.7%
	Total	**$ 801,119,908**	**100.0%**

Source: USAspending.gov, based on total obligated dollar amount of prime awards whose base award was awarded in Fiscal Year 2020.

To assist with economic development strategy and better focus efforts when reaching out to key DOD contacts, Figure 11 divides DOD contract awards in the region by the awarding Department of Defense sub-agency. Over 40% of newly awarded defense contracts in Southwest Pennsylvania were made by the Navy. The Army accounted for 25% of newly awarded contracts. The Defense Logistics Agency and the Air Force also had shares larger than 10%. The Defense Counterintelligence and Security Agency comprised a smaller share of just over 6%.

Figure 11: Newly Awarded DOD Contracts in Southwest Pennsylvania by Defense Sub-Agency, FY2020



Source: USAspending.gov, based on total obligated dollar amount of prime awards whose base award was awarded in Fiscal Year 2020.

Ten companies received almost 70% of newly awarded defense contract dollars for work performed in the region in Fiscal Year 2020. DOD awarded over 40% of new contract awards to two contractors: DRS Laurel Technologies and Carnegie Mellon University.

Figure 12: Top Southwest Pennsylvania Defense Contractors by Newly Awarded Contracts, FY2020

Rank	Vendor Name	Obligated Dollar Amount	% of Total Value
1	DRS Laurel Technologies	$ 246,921,357	30.8%
2	Carnegie Mellon University	$ 84,561,023	10.6%
3	Kongsberg Defense & Aerospace AS	$ 70,213,588	8.8%
4	Fisher Scientific Company L.L.C.	$ 37,951,718	4.7%
5	ASRC Federal Professional Services LLC	$ 27,021,854	3.4%
6	Laurel Technologies Partnership	$ 25,586,458	3.2%
7	Martin-Baker America, Inc.	$ 20,146,550	2.5%
8	University of Pittsburgh	$ 17,547,517	2.2%
9	National Center for Defense Manufacturing & Machining	$ 14,854,331	1.9%
10	Verato, Inc.	$ 13,596,956	1.7%
	Top Ten Vendors Total	$ 558,401,351	69.7%
	All Other	$ 242,718,557	30.3%
	Total	**$ 801,119,908**	**100.0%**

Source: USAspending.gov, based on total obligated dollar amount of prime awards whose base award was awarded in Fiscal Year 2020.

Potential Application of Findings

This report is intended to provide a deeper understanding of the dynamics, assets, and opportunities of Southwest Pennsylvania's defense contract landscape and the region's underlying defense industry cluster. The data and analysis found within this report may be used to advance initiatives that strengthen SW PA's defense economy and promote regional contractors' ability to obtain a greater share of defense contracts. The following section considers five potential applications for the findings of this report.

Raise awareness and engage the business community about defense contracting opportunities. The findings in this report can be leveraged to raise awareness among firms of all sizes in the defense industry cluster that contracting with defense and national security agencies, especially the Department of Defense, represents a large potential market. CREC's analysis suggests that there is a far greater number of firms in the region that produce goods and services with defense and national security applications than there are firms that directly contract with the DOD and other defense-related agencies. Raising awareness and engaging businesses on the opportunity that defense contracting represents may increase the number of regional firms that bid on and, and ultimately win, defense contracts in the future, presenting opportunities for new revenue streams.

Survey known regional defense contractors to understand how to best support the defense industry cluster. This report demonstrates that there are numerous businesses in the region's defense industry cluster that consistently perform work for federal defense contracts. The industry knowledge these firms possess, in addition to their insight on how to approach the federal bidding process, are valuable resources for policymakers looking to strengthen the overall business climate for firms involved in the defense economy. A survey could collect targeted information related to these firms' supply chains, operating environment, and perspectives on how to facilitate greater growth in SW PA's defense industry cluster.

Conduct a value chain analysis on targeted industries to identify key business-to-business relationships in defense-related supply chains. CREC's findings suggest that multiple defense-related industries in Southwest Pennsylvania maintain high levels of concentration but have seen total employment shrink over the past ten years. A 'deep dive' value chain analysis on one or more of these industries to identify their key inter-industry buying and selling relationships may reveal opportunities for synergies between regional firms. For instance, it is possible that the region's large DOD contractors may have an opportunity to strengthen their supply chains by doing business with smaller nearby firms in an inter-related industry. These connections would develop local supply chains and offer other businesses in the area potential avenues for business expansion and diversification.

Perform a comprehensive economic analysis on the defense sector's overall economic impact. Defense contract awards are important to Southwest Pennsylvania because they introduce new federal dollars into the region. Once in SW PA, those dollars can have an even greater economic impact as that money is recycled through the local economy, creating a 'multiplier' effect. This report finds that over $4 billion of DOD contract obligations flowed into the region in FY2020. Additional analysis could be conducted to determine how much indirect and induced economy activity DOD contracts generate by virtue of spin-off activities that result from inter-industry linkages. Understanding the true economic value of DOD contracts, in terms of direct, indirect, and induced economic impact could increase policymakers' understanding of the true magnitude of the defense economy and the expected benefit of increased activity in this area.

Connect defense sector promotion with the region's broader industry cluster and talent strategies. Regions seek to build economic opportunities in areas of historical or emerging industry strengths. These industry clusters represent groups of industries that are closely linked by common product markets, labor pools, similar technologies, supplier chains, and/or other economic ties. The information in this report may help policymakers identify new relationships between interrelated defense cluster industries that can inform future industry support strategies. Actively seeking methods to bolster the business environment for not just one industry but many interrelated ones will help ensure that firms in SW PA's defense cluster maintain their competitive advantage in future years.

Methodology

Defense Cluster Methodology

The Center for Regional Economic Competitiveness (CREC) scanned the research literature for industry-based definitions utilized in past studies for identifying defense targeted industries. This included previous studies by CREC and other organizations. This scan resulted in CREC identifying 231 industries that are important to maintaining the nation's defense industrial base – Defense Industry Cluster. The industries are categorized using the North American Industry Classification System (NAICS), which is a 6-digit code system used by the federal statistical agencies to classify business establishments. NAICS is the recognized standard for researchers, businesses, and government to classify and measure economic activity in the United States, Canada, and Mexico. Each business establishment in the state is classified to an industry according to the primary business activity taking place there. While not all businesses in the many industries comprising the Defense Cluster are directly involved in DOD contract work, they are operating in industries that are critical to the overall defense supply chain – and therefore may benefit from defense sector growth and market diversification opportunities in their states and regions.

Defense Contract Analysis

The federal defense contracts data are extracted from USAspending.gov, a searchable database established by the Office of Management and Budget. The federal contracts data shown on USASpending.gov are provided directly by each federal agency. USAspending.gov receives and displays data pertaining to obligations (amounts awarded for federally sponsored projects during a given budget period), not actual cash disbursements made against each project. The defense contract data were analyzed from multiple perspectives for this project. First, CREC examined all prime award contract obligations awarded by the Department of Defense at the transaction level from FY2016 to FY2020 where the Southwest Pennsylvania region was the primary place of performance. CREC then expanded these criteria to include prime award contract obligations from the Departments of Energy, Justice, Homeland Security and the National Aeronautics and Space Administration. To provide context, CREC also examined all Department of Defense contract obligations in FY2020 where the primary place of performance was Pennsylvania. Finally, we analyzed all Department of Defense contracts that were newly awarded in FY2020, where the base contract was created in that year and the region was the primary place of performance.