Rockford Region
Defense Industry Profile

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Nathalie P. Voorhees Center for Neighborhood and Community Improvement

ILLINOIS DEFENSE NETWORK

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Acknowledgement

The Nathalie P. Voorhees Center for Neighborhood and Community Improvement (Voorhees Center) is an applied research and technical assistance unit in the College of Urban Planning and Public Affairs at the University of Illinois Chicago (UIC). Its mission is to promote quality of life and wellbeing by assisting and working with local organizations, government entities and other stakeholders in efforts to understand and develop communities.

The UIC Voorhees Center has been working under a Cooperative Agreement with the Office of Local Defense Community Cooperation (OLDCC) for the last several years addressing issues related to defense industry adjustment and resiliency in the State of Illinois. To facilitate statewide efforts, a network including regional organizations serving four defensive-intensive-regions (Chicago, Peoria, Quad Cities, and Rockford) has been collaborating under the auspices of the Illinois Defense Network (IDN), a network established to support manufacturers and businesses engaged in the defense sector. Over the past several years, IDN network members have been working with defense industry stakeholders to promote Defense Industry Resiliency (DIR) in furtherance of the goals of the Cooperative Agreement with OLDCC, DOD.

To support statewide efforts and expand understanding of facts on the ground, the UIC Voorhees Center undertakes data analysis and research. One of the earlier studies released in 2018 was “Defense Industry Profile” compiled for the Rockford Region, a region that consists of two counties - Boone and Winnebago. This is an update covering the five-year period between 2016 and 2020.

The Rockford Region is home to scores of companies that serve aerospace industry leaders such as AAR, Boeing, and Airbus, businesses that are world-renowned corporations focused on designing, manufacturing, and selling aerospace products.

This study is prepared by the UIC Voorhees Center with financial support by the Office of Local Defense Community Cooperation (OLDCC), Department of Defense (DOD); we are grateful for the continued support provided by OLDCC.

The content and conclusions in this report reflect the views of the research team and not necessarily that of OLDCC or DOD.

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Executive Summary

The purpose of this defense industry profile is to provide an overall understanding of Department of Defense (DOD) related economic activity in the region. It calculates regional and industry level dependencies by combining industry employment and establishment data from the U.S. Bureau of Labor Statistics (BLS), the U.S. Census Bureau, and contract data from the Illinois Defense Network (IDN) Supply Chain Mapping (SCM) platform. The dependency metric shows the extent to which regions and industries are dependent on revenue from DOD contracts. Informed by the findings from past reports, the profile also identifies regional industries where policies addressing supply chain resiliency and defense firm diversification should focus on.

DOD Sales and Companies Performing DOD Work

The volume of DOD sales associated with both prime and subcontracts, and the number of local companies involved in these sales are essential to understanding the degree to which the region is embedded in the national defense industry ecosystem. Utilizing company and contract level data, the analysis provides a historical perspective on sales activity in the region over a five-year period.

Regional Defense Dependency by Industry

Aggregation of contracts into broad sectors helps to identify specific industries that constitute the regional defense industrial base. Sectoral distribution of DOD sales highlights: 1) industries with the largest share of defense activity in the region, and 2) those industries where DOD sales account for the largest share of overall sales in a particular industry. Likewise, sectoral distribution of companies with DOD sales indicates industries with the largest share in the region as well as those industries where companies with DOD sales account for the largest share in a particular industry.

Concentration of DOD Sales at the Company Level

This analysis augments preceding analyses in two ways. First, it focuses on those contracts that are active (i.e., products or services attached to those contracts that are in the process of being delivered to DOD), while the preceding two analyses focused on past defense sales. Second, it examines the dominance of large defense contractors in total defense activity. The average size of establishments may have implications for the strength of the region's relationship with the defense industry and prospects for growth. Heavy concentration within a few large firms may wield greater political or supply chain power. Yet this may also mean the strength and health of the region's relationship with the defense industry is dependent on just a few firms.

Key Findings

- On average, $471 million worth of DOD sales were performed annually in the region during the 2016-2020 period. This figure is 49% higher than the average for the 2013-2017 period ($315 million).

- There were 86 establishments with DOD sales activity in the region during the 2016-2020 period. This figure is much higher than the 2013-2017 figure (54).

- The Rockford Region accounts for a small portion of DOD work performed in the Illinois Defense Network (IDN) region[1] between 2016 and 2020; establishments in the Rockford Region performed 6.1% of DOD contracts during this period. This represents a considerable increase in the region's share from the 2013-2017 period (4.7%).

- The wholesale trade sector has the largest share of DOD sales activity, accounting for 54.1% of regional DOD sales during the 2016-2020 period. The share of manufacturing is also large (44.2%). The share of other industries is minimal, none exceeding 1%.

- Defense sales in the region represented a significant share of total industry sales (1.71%) during the 2016-2020 period; the share was much smaller during the 2013-2017 period (1%).

- Wholesale trade is the most dependent on defense sales among all industries. DOD sales represented 9% of industry sales in 2020.

- The manufacturing sector has the highest share of establishments with DOD contracts. In calendar year 2020, 8% of all regional manufacturing establishments had at least one DOD contract.

- There are approximately $29.5 million worth of active defense prime contracts in the region. These contracts are highly concentrated in a few firms. The top three establishments account for 99% of active defense prime contracts in the region.

[1] The IDN region is comprised of the state of Illinois plus five counties in Iowa that have strong economic ties to Illinois. Five Iowa counties are: Cedar, Clinton, Jackson, Muscatine, Scott.

1. DOD Sales in the Region

DOD sales are a combination of prime and sub-awards. DOD sales are calculated by spreading the award value over the contract life and then creating a per diem amount. DOD sales estimated this way provide a more accurate assessment of the top-line impact on firms as opposed to annual totals of the awards. Given that many defense contracts last multiple years, the spreading strategy adjusts the concentration of contracts in one year and provides a more realistic picture as to when sales occur in the region. Some portion of estimated DOD sales for firms located within a region include estimates for both prime and named sub-award sales reported for establishments inside the region. All these roll-ups will include a modest level of double counting. Unlike estimating economic impact where removal of double counting is imperative, the goal here is to reflect top line sales of establishments in the defense industry.

In the last five years (2016-2020), on average, there were 86 establishments with at least one defense contract in the region (Table 1 and Figure 1). The amount of DOD sales performed in the region averaged more than $471 million annually during the same period. The Rockford Region accounts for 6.1% of DOD sales in the IDN region. Regional establishments constitute around 4.1% of establishments with DOD sales in the IDN region. That DOD sales are more concentrated in the Rockford Region than establishments indicates that DOD sales per DOD establishment in the region is higher than its equivalent in the state (i.e., the region is home to companies that execute relatively large DOD contracts).

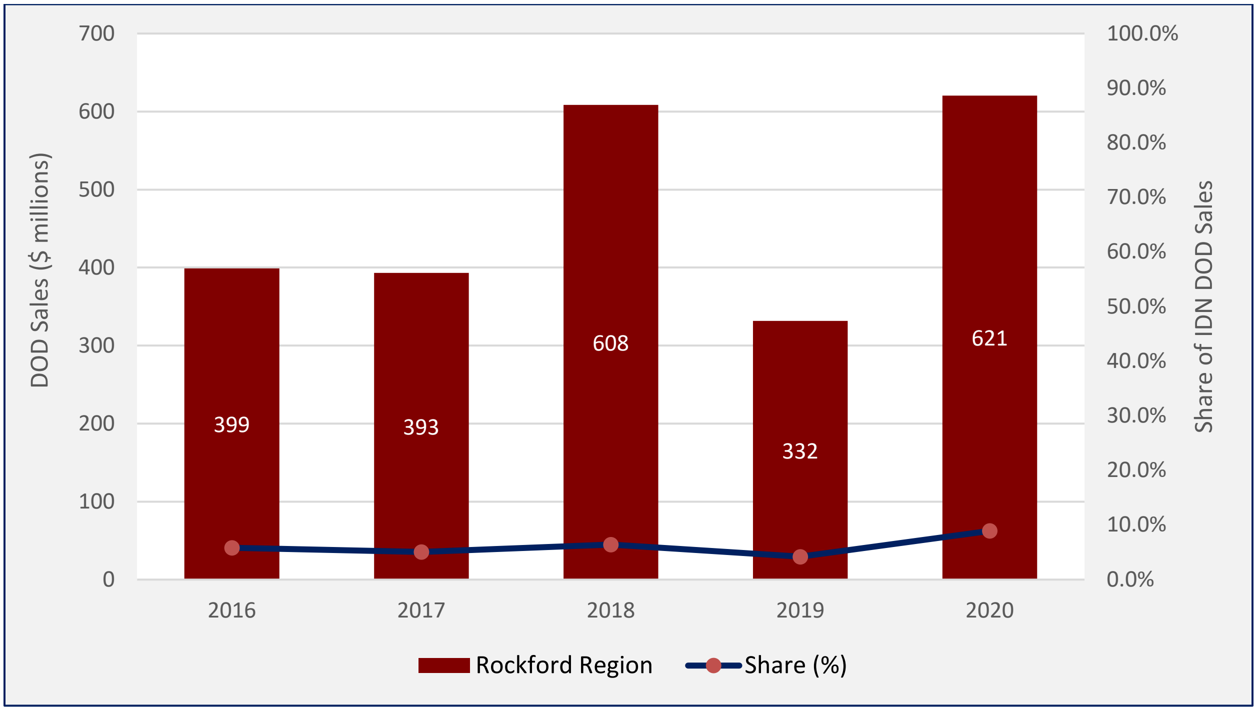
Table 1: DOD Sales and Establishments Performing DOD Work

	DOD Sales ($ millions)			Establishments		
Year	**IDN Region**	**Rockford Region**	**Share (%)**	**IDN Region**	**Rockford Region**	**Share (%)**
2016	6,826	399	5.8	2,099	86	4.1
2017	7,747	393	5.1	2,099	86	4.1
2018	9,476	608	6.4	2,099	86	4.1
2019	7,888	332	4.2	2,099	86	4.1
2020	6,962	621	8.9	2,099	86	4.1
Average	**7,780**	**471**	**6.1**	**2,099**	**86**	**4.1**

Source: Illinois Supply Chain Mapping Tool.

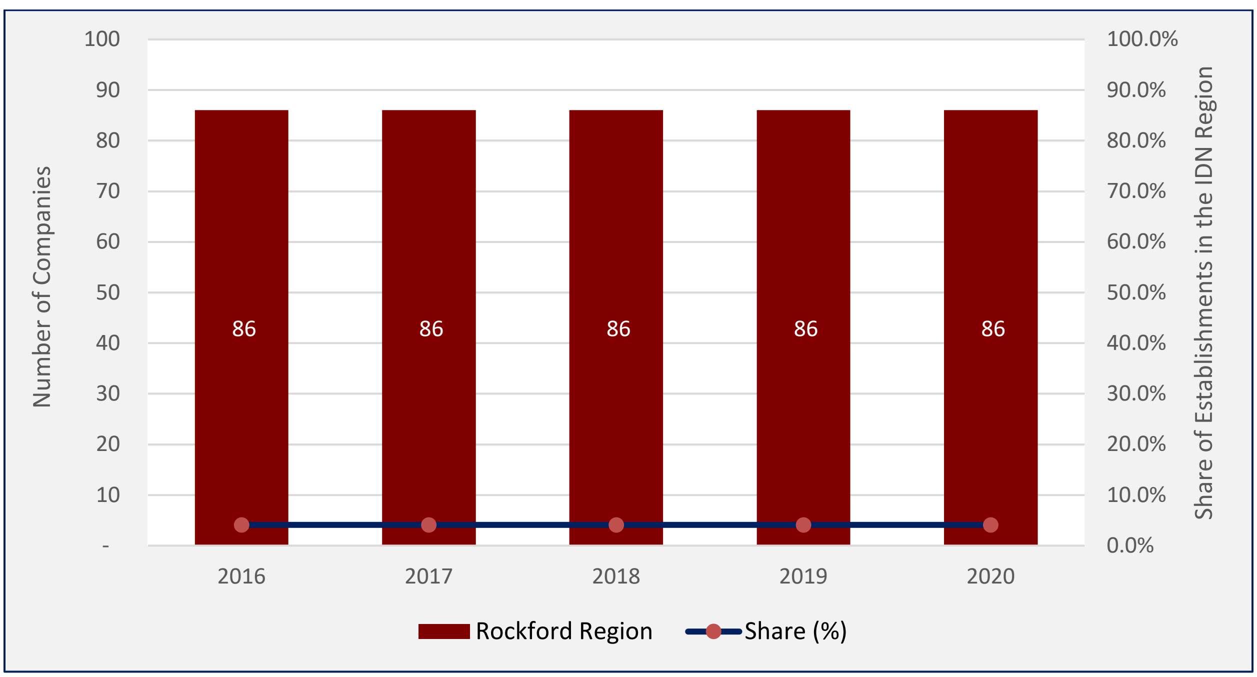
In terms of change over time, defense sales in the region follows a trend different from the trend observed for the IDN region. While regional defense sales decreased from 2016 to 2019, it increased from 2019 to 2020. The increase in 2020 is particularly sharp (nearly doubling). Whether this growth is a one-time event due to the pandemic or an indicator of stabilization is an important feature to monitor.

Figure 1: DOD Sales



Source: Illinois Supply Chain Mapping Tool.

Figure 2: Establishments Performing DOD Work



Source: Illinois Supply Chain Mapping Tool.

2. Regional Defense Dependency

Unbundling the regional defense industrial base into industries, defense contractors are active in 11 of the 20 standard 2-digit NAICS code industries (Table 2). Wholesale trade (NAICS 42) has the largest share of DOD sales in the region, accounting for 54.1% of regional DOD sales during the 2016-2020 period. The share of manufacturing (NAICS 31-33) is also very large at 44.2%. These two industries together account for more than 98% of DOD sales in the region. The share of other industries is minimal, none exceeding 1% except for construction.

In terms of industrial distribution of establishments with DOD sales, a contrasting pattern emerged for wholesale trade and manufacturing. In the case of wholesale trade, the industry accounts for a smaller share of establishments with DOD sales. This indicates that DOD contracts in this industry are concentrated in a relatively small number of firms. Specifically, the wholesale industry accounts for 54.1% of DOD sales while it only accounts for 6.8% of establishments with DOD sales in the region. In the case of manufacturing, the industry accounts for a larger share of regional establishments with DOD sales. This indicates that DOD contracts in this industry are spread across a relatively large number of firms. The share of construction (NAICS 23) and professional, scientific, and technical services (NAICS 54) are also large at 5.7%, while the share of other industries is relatively small.

Finally, Table 2 examines average DOD sales per establishment to better understand the industry differences in DOD sales activity. The average DOD sale per establishment in the Rockford Region was $5.3 million during the 2016-2020 period. Wholesale trade has average DOD sales that is well above the regional industrial average. The average DOD sales per establishment in all other industries are below the regional average.

Table 2: DOD Sales and Establishments by Industry, 2016-2020

Code	Industry	Avg. Sales ($thousands)	Share (%)	Avg. # of Est.	Share (%)	Avg. Sales per Est. ($ thousands)
11	Agr., forestry, fishing, and hunting	0	0.0	0	0.0	n.a.
21	Mining, and oil and gas extraction	0	0.0	0	0.0	n.a.
22	Utilities	0	0.0	0	0.0	n.a.
23	Construction	5,449	1.2	5	5.7	1,090
31-33	Manufacturing	207,809	44.2	52	59.1	3,996
42	Wholesale trade	254,773	54.1	6	6.8	42,462
44-45	Retail trade	0	0.0	0	0.0	n.a.
48-49	Transportation and warehousing	206	0.0	2	2.3	103
51	Information	9	<0.1	2	2.3	5
52	Finance and insurance	930	0.2	1	1.1	930
53	Real estate and rental and leasing	105	<0.1	1	1.1	105
54	Professional, scien., and tech. ser.	113	<0.1	5	5.7	23
55	Man. of companies and enterprises	0	0.0	0	0.0	n.a.
56	Admin. and support services	30	<0.1	1	1.1	30
61	Educational services	0	0.0	0	0.0	n.a.
62	Health care and social assistance	260	0.1	2	2.3	130
71	Arts, entertainment, and recreation	0	0.0	0	0.0	n.a.
72	Accommodation and food services	548	0.1	2	2.3	274
81	Other services	0	0.0	0	0.0	n.a.
92	Public administration	0	0.0	0	0.0	n.a.
	Unknown	396	0.1	9	10.2	44
	Total	**470,628**	**100.0**	**88**	**100.0**	**5,348**

Source: Source: Illinois Supply Chain Mapping Tool; Quarterly Census of Employment and Wages (QCEW); Economic Census of the United States; Core Business Statistics. **Note:** Number of establishments in this table is greater than the one provided in Table 1 since there are establishments performing contracts in multiple industries.

Twenty-twenty (2020) regional industry sales are estimated based on the 2017 regional sales provided by the U.S. Census Bureau Core Business Statistics (2017 is the latest year for which statistics were available at the county level). To estimate 2020 sales, first, sales per employee are calculated for every 2-digit NAICS industry in 2017. Sales data were suppressed due to nondisclosure requirements for some industries. In such cases, estimates are made based on state averages where available. In cases where state sales data were suppressed, national averages are used. Second, 2020 industry sales were estimated using employment data from the Quarterly Census of Employment and Wages (QCEW) for 2020 and the sales per employee figures calculated in the first step. Third, estimated sales figures in the second step were adjusted for inflation using the inflation factors published by the Bureau of Labor Statistics. Please note that this estimation procedure assumes that sales per employee has not changed (remained constant) from 2017 to 2020 in real terms. If regional industries have higher sales per employee in 2020 than in 2017, this will result in underestimation of regional sales figures.

Defense sales in the region represent a small share of total industry sales (1.71%) (Table 3). Although this figure is relatively small, it is still important to examine the concentration of defense sales at the regional and industry levels, as there might be variation among industries. As noted above, defense contractors are active in 11 of the 20 standard 2-digit NAICS code industries; it is therefore important to examine the concentration of DOD sales in all these industries. Table 3 provides industry sales, DOD sales, and share of DOD sales by industry. Shares can be interpreted as the degree to which regional industries rely on DOD sales. Two regional industries appear to be very dependent on defense sales: wholesale trade and manufacturing. In calendar year 2020, 9% of sales in wholesale trade and 2.48% of sales in manufacturing are represented by defense sales. The share of defense sales in other industries is minimal, none exceeding 1%.

Table 3: DOD Sales as a Share of Total Industry Sales, 2020

Code	Industry	DOD Sales ($ thousands)	Total Industry Sales ($thousands)	Share (%)
11	Agr., forestry, fishing, and hunting	0	n.a.	n.a.
21	Mining, and oil and gas extraction	0	44,343	0.00
22	Utilities	0	452,146	0.00
23	Construction	14,610	1,753,195	0.83
31-33	Manufacturing	343,608	13,834,470	2.48
42	Wholesale trade	258,559	2,873,001	9.00
44-45	Retail trade	0	4,575,281	0.00
48-49	Transportation and warehousing	0	1,250,687	0.00
51	Information	10	1,161,074	<0.01
52	Finance and insurance	0	4,196,196	0.00
53	Real estate and rental and leasing	0	347,281	0.00
54	Professional, scien., and tech. ser.	25	896,016	<0.01
55	Man. of companies and enterprises	0	n.a.	n.a.
56	Admin. and support services	37	857,141	<0.01
61	Educational services	0	18,796	0.00
62	Health care and social assistance	-2	2,887,350	0.00
71	Arts, entertainment, and recreation	0	113,509	0.00
72	Accommodation and food services	2,742	708,590	0.39
81	Other services	0	401,275	0.00
92	Public administration	0	n.a.	n.a.
	Unknown	1,037	n.a.	n.a.
	Total	**620,626**	**36,370,350**	**1.71**

Source: Illinois Supply Chain Mapping Tool; Quarterly Census of Employment and Wages (QCEW); Economic Census of the United States; Core Business Statistics. **Note:** Total industry sales include the total shipments, receipts, revenue.

In terms of the share of establishments with DOD sales among all establishments, manufacturing has the highest concentration of all industries (Table 4). In calendar year 2020, 8.02% of all regional manufacturing establishments have at least one DOD contract. These distributions indicate that while manufacturing has the highest concentration of establishments with defense sales, wholesale trade relies the most on defense sales.

Table 4: Establishments Performing DOD Work as a Share of Total Establishments, 2020

Code	Industry	# of Establishments with DOD Sales	Total # of Establishments	Share (%)
11	Agr., forestry, fishing, and hunting	0	n.a.	n.a.
21	Mining, and oil and gas extraction	0	7	0.00
22	Utilities	0	14	0.00
23	Construction	5	649	0.77
31-33	Manufacturing	52	648	8.02
42	Wholesale trade	6	368	1.63
44-45	Retail trade	0	896	0.00
48-49	Transportation and warehousing	2	343	0.58
51	Information	2	84	2.38
52	Finance and insurance	1	346	0.29
53	Real estate and rental and leasing	1	246	0.41
54	Professional, scien., and tech. ser.	5	589	0.85
55	Man. of companies and enterprises	0	n.a.	n.a.
56	Admin. and support services	1	379	0.26
61	Educational services	0	120	0.00
62	Health care and social assistance	2	546	0.37
71	Arts, entertainment, and recreation	0	125	0.00
72	Accommodation and food services	2	618	0.32
81	Other services	0	646	0.00
92	Public administration	0	n.a.	n.a.
	Unknown	9	n.a.	n.a.
	Total	**88**	**6,624**	**1.33**

Source: Illinois Supply Chain Mapping Tool; Quarterly Census of Employment and Wages (QCEW); Economic Census of the United States; Core Business Statistics. **Note:** Number of establishments in this table is greater than the one provided in Table 1 since there are establishments performing contracts in multiple industries.

3. Active Defense Prime Contracts

The previous two sections focused in large part on past defense sales. This section augments the previous analyses by focusing on those contracts that are active (i.e., products or services attached to those contracts that are in the process of being delivered to DOD). Table 5 shows that there are $29.5 million worth of active defense prime contracts in the region. Nearly all prime contracts are concentrated in three firms. With over $19 million active defense contracts, Hamilton Sundstrand Corporation has the largest share. This company alone accounts for nearly 70% of all active defense prime contracts in the region. Supplycore Inc. ranks number two with $5.6 million worth of active contracts. This company's share is also considerable at 19%. Woodward Inc. ranks number three with $4 million worth of active contracts. This company's share is also considerable at 13.9%. Other companies' share is minimal, none exceeding 1%.

Table 5: Top Ten Defense Prime Contractors with Active Contracts as of 2021[2]

Company	Primary NAICS	Contract Value ($ thousands)	Share (%)
Hamilton Sundstrand Corporation	336412 - Aircraft Engine and Engine Parts Manufacturing	19,747	66.9
Supplycore Inc.	423390 - Other Construction Material Merchant Wholesalers	5,623	19.0
Woodward, Inc.	336412 - Aircraft Engine and Engine Parts Manufacturing	4,097	13.9
Alpha Controls & Services, L.L.C.	238210 - Electrical Contractors and Other Wiring Installation Contractors	41	0.1
LEGION SERVICE PROVIDER, LLC	561210 - Facilities Support Services	29	0.1
Cleo Communications, Inc	511210 - Software Publishers	16	0.1
GE Aviation Systems LLC	336413 - Other Aircraft Parts and Auxiliary Equipment Manufacturing	-31	-0.1
Total		**29,522**	**100.0**

Source: Illinois Supply Chain Mapping Tool. **Note:** Primary NAICS refers to the establishment's NAICS. This code is assigned to establishments based on its primary business activity.

In terms of the industrial distribution of active defense contracts, the dominant industry is aircraft parts manufacturing. This suggests that establishments in this industry will continue to be the largest performers of defense contract work in the forseable future. To keep defense money in the Rockford Region, it is important for regional policy makers to explore the extent to which these large prime contractors are working with local suppliers.

[2] Complete list of regional establishments and corresponding prime contracts are available upon request.

Table 6: Top Ten Industries with the Largest Prime Contracts as of 2021

Principal NAICS	Contract Value ($ thousands)	Share (%)
336413 - Other Aircraft Parts and Auxiliary Equipment Manufacturing	19,747	66.9
339999 - All Other Miscellaneous Manufacturing	4,702	15.9
336412 - Aircraft Engine and Engine Parts Manufacturing	3,977	13.5
333999 - All Other Miscellaneous General Purpose Machinery Manufacturing	765	2.6
332999 - All Other Miscellaneous Fabricated Metal Product Manufacturing	123	0.4
335312 - Motor and Generator Manufacturing	105	0.4
561210 - Facilities Support Services	41	0.1
561790 - Other Services to Buildings and Dwellings	29	0.1
511210 - Software Publishers	16	0.1
333613 - Mechanical Power Transmission Equipment Manufacturing	16	0.1
Subtotal	**29,521**	**100.0**
Others	**1**	**0.0**
General Total	**29,522**	**100.0**

Source: Illinois Supply Chain Mapping Tool. **Note:** Principal NAICS refers to the contract's NAICS. This code is assigned to contracts by contract officers at DOD. Primary and principal NAICS codes generally overlap, but there are instances in which they differ (e.g., a manufacturing establishment might be awarded an engineering service contract).

4. Conclusion

Overall, defense sales in the region represented a considerable share of total industry sales (1.72%) during the 2016-2020 period ($471 million). DOD sales are particularly important for industries that account for a larger share of total industrial sales. Among the industries analyzed, wholesale trade and manufacturing are the most dependent on defense sales. DOD sales represented 9% of industry sales in wholesale trade and 2.48% of industry sales in manufacturing. In calendar year 2020, 8% of all regional manufacturing establishments had at least one DOD contract.

In terms of change over time, there was growth in the volume of DOD work performed in the region compared to the 2013-2017 period. The average annual DOD sales figure for the 2016-2020 period ($471 million) is 49% higher than the average for the 2013-2017 period ($315 million).

In terms of sectoral distribution of DOD sales activity, wholesale trade has the largest share. During the 2016-2020 period, this industry accounted for 54.1% of regional DOD sales. The share of manufacturing is also very large at 44.2%. The share of other industries is minimal, none exceeding 1% (except for construction).

There are approximately $29.5 million worth of active defense prime contracts in the region. These contracts are highly concentrated in three firms that accounted for 99% of the active defense prime contracts in the region. This may also mean the strength and health of the region’s relationship with the defense industry is dependent on just a few firms. Regional policy makers should consider these factors when developing programs to support regional defense contractors.

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