



The New England Defense Industry:

CURRENT PROFILE AND ECONOMIC SIGNIFICANCE

Connecticut Summary



NOVEMBER 2012



Sponsors

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About the Defense Technology Initiative

Founded in 2003, DTI was originally created by the Massachusetts High Technology Council to protect Massachusetts' military bases through the 2005 Base Realignment and Closure (BRAC) process. Following that successful and nationally-recognized effort, DTI evolved into an economic development and sector advocacy organization that represents the region's leading defense technology firms, research labs, universities, and military bases.

Produced by the Economic and Public Policy Research Unit, University of Massachusetts Donahue Institute

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Letter



Dear Colleague:

The Defense Technology Initiative (DTI) is pleased to release a set of three detailed state reports on the economic significance of the defense industry in New England. This document is one of three related reports, each of which focuses on Connecticut, Massachusetts, and Rhode Island and is a follow up to the New England Defense Industry Summary we released in June 2012. When these reports are viewed together, a clear sense of the interconnectedness of the New England defense technology cluster emerges.

Copies of all state reports, conducted by the University of Massachusetts Donahue Institute, can be found on our website, www.defensetech.net.

The defense industry's importance to the Connecticut economy has only grown in recent years. In 2011, 1,100 companies were awarded nearly \$12.7 billion in Department of Defense (DoD) or the Department of Homeland Security (DHS) contracts, a 51% increase since 2003. These companies employ more than 101,000 employees, which represents approximately 6.3% of employment in the state. These employees exemplify industry expertise in precision manufacturing and sophisticated scientific and technical support, producing cutting edge ships, aircrafts, and specialty engines to the military. With large prime contractors like United Technologies and General Dynamics, the state supports a complex and interconnected network of small businesses and subcontractors throughout the region to supply high technology to our military.

Yet today, defense firms are already adjusting to the current and potential (sequestration) defense spending reductions that could total over \$1 trillion dollars over the next 10 years. Without Congressional intervention before January 2013, job losses throughout New England among contactors and the supply chain could total 90,000 jobs across New England and over 36,000 jobs in Connecticut.

Despite these cuts, opportunities exist. As illustrated in the three state reports, the Pentagon's focus on science and technology, research and development, unmanned air systems and cyber security remain aligned with New England's strengths. A coordinated New England leadership effort is necessary in order to take advantage of these opportunities, and to ensure that the region remains the leader into the future.

I hope you find this report of interest and that it helps you fully understand the significant economic impact of the defense industry in Connecticut, and more broadly throughout New England.

Best,

A handwritten signature in black ink, appearing to read "C Anderson", with a long horizontal flourish extending to the right.

Christopher Anderson
President
Defense Technology Initiative, Inc.

A handwritten signature in black ink, appearing to read "Charlie Benway", with a long horizontal flourish extending to the right.

Charlie Benway
Executive Vice President
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Contents

Letter	ii
Contents.....	iii
Tables and Figures.....	v
New England Overview	vi
Connecticut Introduction	1
Part I: Defense Contracting in Connecticut.....	3
Overview	3
Top Defense Industry Sectors	5
<i>Transportation Equipment Manufacturing</i>	<i>5</i>
<i>Professional, Scientific, and Technical Services</i>	<i>6</i>
Top Products and Services.....	7
<i>Top Purchases from Connecticut Contractors</i>	<i>7</i>
<i>Top Defense Products.....</i>	<i>7</i>
<i>Top Research & Development Services.....</i>	<i>8</i>
<i>Top Defense Services.....</i>	<i>9</i>
Major Corporate and Institutional Contractors	11
<i>Major Defense Contractors</i>	<i>11</i>
<i>The Role of Educational Institutions</i>	<i>11</i>
The Importance of the Defense Sector to Connecticut	13
Part 2: Economic Impacts of Defense in Connecticut.....	15
Introduction	15
Total Economic Contributions	16
Taxes Generated by Defense Contracts.....	18
Conclusion	19
Appendix I. Executive Summary.....	22
Appendix II. Defense Work in Connecticut by Originating State	25
Appendix III. Tax Analysis Categories.....	28
Appendix IV. Input-Output Analysis and the IMPLAN Software.....	29
Input-Output Analysis and the IMPLAN software	29
<i>Direct, indirect, and induced effects</i>	<i>29</i>
<i>IMPLAN</i>	<i>30</i>
Methodology	30
<i>Multi-regional Input-Output (MRIO) Analysis</i>	<i>30</i>
<i>NAICS to IMPLAN Crosswalk</i>	<i>30</i>

Missing NAICS Codes 30
Missing IMPLAN Sectors 31
Appendix V. New England’s Top Products: State Rankings..... 32

Tables and Figures

Figure 1: Procurement from In-State Contractors, FY2003-FY2011	3
Figure 2: Connecticut In-State Defense Contractors, DoD and DHS, FY2003– FY2011	4
Figure 3: Top Ranked States, DoD and DHS Contract Awards, FY2011	4
Figure 4: Top Connecticut Defense Sectors, 2003 - 2011	6
Figure 5: Top Connecticut Product Subsectors by Contract Value	8
Figure 6: Top Connecticut R&D Services Subsectors by Contract Value	9
Figure 7: Top Connecticut Services Subsectors by Contract Value	10
Figure 8: Top Connecticut Recipients of DoD and DHS Contracts, FY2011	11
Figure 9: Top Higher Education Contractors, FY2011	12
Figure 10: Top Contracting Agencies and Sub-Agencies to Connecticut, FY2011	13
Figure 11: Top Federal Contract Recipients in Connecticut in FY2011	14
Figure 12: Top Connecticut Products Sold to the Federal Government, FY2011	14
Figure 13: Connecticut Economic Output, Employment, Labor Income, and Average Wage, 2011	17
Figure 14: Top 10 Connecticut Sectors Impacted by Federal Defense Contracts Performed in New England in 2011	18
Figure 15: Federal, State, and Local Tax Impacts of Direct, Indirect, and Induced Defense-Related Economic Contributions in Connecticut, 2011	18
Figure 16: Value of FY2011 Defense Contract Work Performed in Connecticut, by Contractor Location	25
Figure 17: Value of Contracts Performed in Connecticut, by Both In- and Out-of-State Vendors in FY2003 and FY2011	26
Figure 18: Place of Performance Map FY2011	27
Figure 19: Tax Category Breakdown	28
Figure 20: State and New England Rankings of New England's Top Ten Products and Services, 2011 Contract Values	32

New England Overview

The defense industry is a major contributor to the economy of New England and to each of its six states. In 2011, New England vendors received nearly \$34 billion in Department of Defense (DoD) and Department of Homeland Security (DHS) contracts, an 85 percent increase to the region since 2003. In total, New England captured about 9 percent of U.S. defense and homeland security contracts in 2011. Connecticut plays a particularly strong role within the regional defense industry. More than 1,100 Connecticut firms and institutions (more than 21 percent of the defense contractors in New England) receive defense contracts to provide essential equipment, supplies, and technical services in support of national and regional defense operations. In 2011, nearly \$12.7 billion, or 38 percent of defense purchases from New England, went to Connecticut vendors representing a 51 percent increase in purchases since 2003.

The defense industry in New England has driven economic growth for the region over the last decade. In 2011, defense and homeland security contracting was responsible for a total of more than 319,000 jobs and a total payroll of more than \$22.6 billion across the region. Thirty-two percent of these jobs – a total of 101,359 – are in Connecticut. And while the overall direct, indirect and induced economic activities generated by the resulting work performed in New England exceeds \$62 billion, 36 percent of this total contribution (more than \$22.4 billion) accrued to Connecticut in 2011. This includes \$1.1 billion in indirect and induced economic contributions that came to Connecticut as a result of federal defense contracting performed in other New England states. In all, \$4.9 billion in economic activity within New England occurred as indirect or induced effects across state lines, as federal defense contractors and employees relied on goods and services from across the region. The value added to the New England economy from defense spending (both directly and from the indirect and induced economic activity from this spending) represents, conservatively, 4.1 percent of regional GDP, and 5.1 percent of GDP in Connecticut.

➤ **New England states contribute to each others' defense economies**

	Direct Contribution (Federal Defense Work Performed in State)	Indirect + Induced Contributions from Work Performed in State	Indirect + Induced Contributions from Work Performed Elsewhere in New England	Total Contribution
Connecticut	\$12,394,237,512	\$8,877,866,951	\$1,147,382,937	\$22,419,487,399
Maine	\$5,066,340,901	\$3,038,194,234	\$200,168,078	\$8,304,703,214
Massachusetts	\$12,495,984,465	\$11,024,774,023	\$2,324,842,833	\$25,845,601,322
New Hampshire	\$1,297,533,547	\$936,121,752	\$750,297,963	\$2,983,953,262
Rhode Island	\$812,328,960	\$617,765,363	\$307,572,678	\$1,737,667,001
Vermont	\$393,601,690	\$217,594,576	\$172,722,755	\$783,919,021
Total	\$32,460,027,075	\$24,712,316,899	\$4,902,987,245	\$62,075,331,219

Figure i: Economic Contributions of Federal Defense Spending in New England States, 2011

Sources: UMDI Calculations; IMPLAN Economic Analysis Software, Minnesota IMPLAN Group

A large portion of the defense product line in New England requires the regional presence of highly skilled and well-educated workers along with mature, technically advanced vendors and a strong local supply chain, particularly in manufacturing. Connecticut which has these assets, consequently serves as a major hub of New England defense-related activities. The highest levels of defense-related spending in New England flow into the transportation equipment manufacturing sector for ships (for example, General Dynamics' U.S. Navy DDG 1000 Zumwalt-class destroyer); submarines (General Dynamics' U.S. Navy's 14th Virginia-class submarine, SSN-787); rotary wing aircraft (Sikorsky Black Hawk helicopters); guided missile systems (Raytheon); engines, turbines and components (including General Electric and Pratt & Whitney); and aircraft components. Drawing on the strength of the supply chain around transportation equipment manufacturing, New England vendors also excel in providing communication, detection, and coherent radiation equipment along with the manufacturing of many types of components, equipment, systems, and supplies. New England is also a strong provider of services for equipment maintenance, repair, and rebuilding.

➤ **New England is a key provider of advanced technology products and R&D services**

Rank	Product or Service	Value of Contracts	% of Total Value
1	Ships, Small Craft, Pontoons, and Floating Docks	\$8,407,935,287	24.8%
2	Research and Development	\$5,190,885,953	15.3%
3	Engines, Turbines, and Components	\$3,378,787,016	10.0%
4	Aircraft and Airframe Structural Components	\$2,821,389,095	8.3%
5	Guided Missiles	\$1,754,368,561	5.2%
6	Communication, Detection, and Coherent Radiation Equipment	\$1,703,347,590	5.0%
7	Support (Professional/Administrative/Management)	\$1,602,364,022	4.7%
8	Maintenance, Repair, and Rebuilding Of Equipment	\$1,211,415,878	3.6%
9	Aircraft Components and Accessories	\$1,001,057,940	3.0%
10	Ammunition and Explosives	\$597,162,504	1.8%
	All Other (Includes N/A) (n=93)	\$6,247,697,607	18.4%
	Total	\$33,916,411,453	100.0%

Figure ii: Top Products and Services, New England, FY2011

Source: USAspending.gov; DoD and DHS contract actions

New England has emerged as a critical supplier of professional, scientific and technical services related to defense. New England vendors in general, including Connecticut vendors in particular, are particularly strong in providing advanced professional, scientific, and technical services – especially related to defense systems R&D and defense materials, and supplies R&D. Drawing on its highly educated workforce, New England also excels in providing professional support services including advanced engineering, technical, and management support.

As shown in Figure iii, on the following page, in sectors in which multiple New England states excel, New England despite its relatively smaller size, competes well with the largest defense-producing states, like Texas, California and Florida. As a region, New England ranks above all states as a producer of ships and engines, turbines, and components. New England ranks second to Texas in both the production of communication, detection, and coherent radiation equipment as well as in the production of aircraft components and accessories.

➤ **New England competes with top defense states in technology and R&D services**

Ships, Small Craft, Pontoons, And Floating Docks(19)		Research And Development(A)		Engines, Turbines, And Components(28)		Aircraft And Airframe Structural Components(15)		Guided Missiles(14)			
Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value
	N.E.	\$8,407,388,142	1	CA	\$8,225,569,024		N.E.	\$3,379,985,176	1	AZ	\$2,475,907,747
1	ME	\$4,476,109,532		N.E.	\$5,190,389,720	1	CT	\$1,959,237,283	2	CA	\$1,850,329,042
2	MS	\$4,433,480,502	2	VA	\$4,770,278,083	2	MA	\$1,419,688,169	3	WA	\$4,012,164,575
3	CT	\$3,924,591,559	3	MA	\$3,608,124,372	3	OH	\$554,143,025	4	GA	\$3,558,075,977
4	VA	\$2,205,079,869	4	AL	\$3,108,684,232	4	IN	\$337,269,205		N.E.	\$2,821,389,095
5	AL	\$1,410,331,149	5	TX	\$2,995,473,812	5	AZ	\$293,092,279	5	CT	\$2,719,016,918
6	MD	\$963,051,248	6	MD	\$2,766,453,230	6	FL	\$59,643,735	6	MO	\$2,618,701,537
7	CA	\$685,136,126	7	NY	\$1,903,415,146	7	CA	\$54,541,102	7	AZ	\$1,267,376,000
8	LA	\$297,194,507	8	NJ	\$1,632,980,372	8	TX	\$36,124,078	8	VA	\$1,199,479,020
9	WA	\$50,679,286	9	AZ	\$1,479,519,028	9	VA	\$26,687,584	9	PA	\$1,154,509,160
10	FL	\$42,756,717	10	CT	\$1,271,546,251	10	MI	\$23,808,202	10	MD	\$807,672,948
11	WI	\$41,655,764	11	CO	\$1,229,893,490	11	WI	\$23,134,531	11	KS	\$588,313,459
12	MN	\$26,663,329	12	MO	\$1,220,777,297	12	NY	\$19,030,034	12	NY	\$531,287,546
	Communication, Detection, And Coherent Radiation Equipment(58)		Support (Professional / Administrative / Management)		Maintenance, Repair, And Rebuilding Of Equipment(J)		Aircraft Components And Accessories (16)		Ammunition And Explosives(13)		
Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value
1	TX	\$1,736,377,806	1	VA	\$17,915,728,397	1	VA	\$3,589,138,479	1	TX	\$1,669,363,257
	N.E.	\$1,703,348,209	2	TX	\$5,496,795,725	2	TX	\$3,493,165,184		N.E.	\$1,001,057,940
2	CA	\$1,341,247,922	3	CA	\$3,618,994,065	3	FL	\$2,345,760,157	2	CT	\$496,642,748
3	NY	\$1,332,531,320	4	MD	\$3,240,999,494	4	CA	\$1,653,736,417	3	MO	\$495,729,411
4	MA	\$1,186,647,316	5	SC	\$2,714,955,267		N.E.	\$1,211,774,439	4	FL	\$429,652,843
5	VA	\$987,011,785	6	NJ	\$2,320,673,682	5	OK	\$693,124,718	5	NV	\$368,405,704
6	MD	\$931,339,844		N.E.	\$1,603,154,276	6	NJ	\$665,949,835	6	CA	\$362,704,650
7	FL	\$530,898,830	7	AL	\$1,599,765,160	7	CT	\$595,324,205	7	NY	\$328,124,758
8	NJ	\$505,900,109	8	FL	\$1,495,642,351	8	MD	\$590,153,902	8	AZ	\$291,792,593
9	IN	\$451,656,023	9	OH	\$1,446,454,272	9	MA	\$568,386,619	9	MS	\$241,239,396
10	NH	\$405,737,902	10	CO	\$1,186,375,119	10	AL	\$504,618,915	10	MA	\$228,791,147
11	IA	\$362,457,623	11	MA	\$1,131,508,667	11	GA	\$352,182,208	11	IN	\$172,823,830
12	OH	\$348,833,065	12	GA	\$708,057,749	12	KS	\$294,551,956	12	NH	\$133,489,026

Figure iii: State and New England Rankings of New England’s Top Products and Services, FY2011

Source: USAspending.gov; DoD and DHS contract actions

Large-scale defense production involves both primary contractors as well as many hundreds of sub-contractors and supplier contractors across the region. So while major contractors stand out as leaders, as do dominant states like Connecticut and Massachusetts, in reality companies and workers from every part of the region are involved in the production of defense systems. The interaction of the supply chain and its workers across New England creates a strong cluster of defense production activities across the region.

Connecticut Introduction

The defense industry is an important contributor to the Connecticut economy. In 2011, the majority of federal contract awards to Connecticut vendors (nearly 95 percent of the total), went towards the purchase of defense products and services.¹ Vendors in the state were awarded nearly \$12.7 billion in Department of Defense (DoD) and Department of Homeland Security (DHS) contracts, a 51 percent increase since 2003.² Defense and Homeland Security contracting is responsible for a total of more than 101,000 jobs (approximately 6.3% of employment in the state) and a total payroll of more than \$7.9 billion across the state (about 8.0 percent of wages in 2011).³ The overall direct, indirect, and induced economic activity generated for Connecticut by defense-related work performed in New England exceeds \$22.4 billion. We calculate that the value added to the state's economy from defense spending (both directly and from the indirect and induced economic activity from this spending) would represent, conservatively, 5.1 percent of state GDP.⁴

More than 1,100 Connecticut firms and institutions have contracts with DoD and DHS to provide essential equipment, supplies and technical services in support of defense operations. Much of this activity requires highly skilled workers, precision manufacturing, and sophisticated scientific and technical support. While major contractors appear distinct, in reality multiple companies are involved in the production of advanced defense systems. Large-scale production involves primary contractors as well as many hundreds of sub-contractors and supplier contractors; Connecticut vendors play a major role at all of these levels. The state is also home to organizations offering targeted support, including applied technology assistance provided by the Advanced Manufacturing Center at the Connecticut Center for Advanced Technology (CCAT).⁵ The interaction of the supply chain across the state and within New England creates a strong cluster of businesses and workers linked to defense production activities across the region.

¹ The data used in this study are analyzed and reported by federal fiscal year. The federal fiscal year runs from October 1 of the prior year through September 30 of the year being described. The latest annual data available for analysis during the study period are for federal fiscal year 2011.

² The data we use in this analysis of contract values are in nominal dollars rather than in inflation adjusted dollars.

³ Total covered employment in Connecticut in 2011 was 1,612,372 with wages of \$98.5 billion (BLS CEW series).

⁴ Total GDP in Connecticut in 2011 was nearly \$230.1 billion (BEA). Defense spending is not reported directly in the BEA figures on GDP for states; the value-added numbers come out of the IMPLAN models run for this report.

⁵ For more information about The Connecticut Center for Advanced Technology (CCAT): <http://www.ccat.us>

This examination of the Connecticut defense industry and economic contributions to the state is structured in two parts. In the first part we examine the nature of defense contract awards to Connecticut firms and organizations, as well as the role of institutions of higher education that work with the defense industry. In the second part, we analyze the impacts generated by the defense industry in the region, including economic, employment, payroll, and tax impacts on the Connecticut economy.

Part I: Defense Contracting in Connecticut

Overview

The Department of Defense is by far the top federal contracting agency to Connecticut, with awards totaling nearly \$12.6 billion in fiscal year 2011. The Department of Health and Human Services (\$215.4 million), the Department of State (\$172.8 million), and the Department of Homeland Security (\$79.3 million) ranked second, third, and fourth in terms of total contract values. This profile of the Connecticut defense industry is based on an aggregate analysis of contract awards by DoD and DHS due to their primary roles in national security and defense. Figure 1 illustrates the total numbers of defense contractors (vendors) and contract values to Connecticut based vendors by agency between 2003 and 2011.

➤ **DoD is the dominant originator of federal contracts to Connecticut**

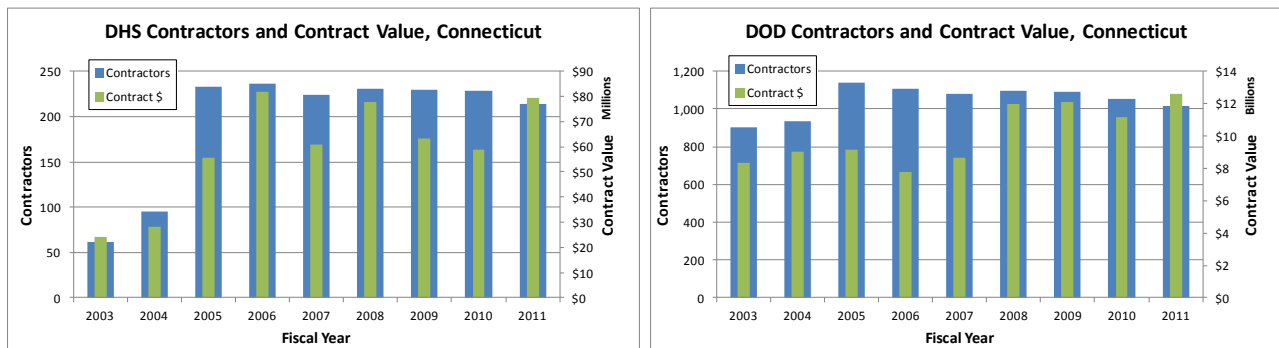


Figure 1: Procurement from In-State Contractors, FY2003-FY2011

Source: USAspending.gov; DoD and DHS contract actions

Note: This count is based on unique vendor ID codes and contract ID codes. A vendor (contractor) is a business unit that has entered into a contract to supply a product or service. Some vendors have contracts from both DoD and DHS. In Connecticut, in 2011, there were 1,115 unique contractors between the two agencies.

➤ **Connecticut defense contract purchases have increased by 51 percent since 2003**

Fiscal Year	Number of contractors			Number of Contract Actions			Total Value of Contracts		
	DHS	DoD	DHS and DoD	DHS	DoD	DHS and DoD	DHS	DoD	DHS and DoD
2003	61	905	928	293	10,971	11,264	\$24,222,353	\$8,356,290,431	\$8,380,512,784
2004	95	938	987	490	11,667	12,157	\$28,268,669	\$9,013,588,840	\$9,041,857,509
2005	233	1,138	1,260	1,107	81,644	82,751	\$55,516,407	\$9,176,736,946	\$9,232,253,353
2006	236	1,109	1,234	1,097	89,771	90,868	\$81,754,281	\$7,792,162,433	\$7,873,916,714
2007	224	1,083	1,190	1,065	95,706	96,771	\$60,848,584	\$8,655,507,214	\$8,716,355,798
2008	231	1,098	1,201	1,188	103,649	104,837	\$77,634,100	\$11,989,085,008	\$12,066,719,108
2009	230	1,094	1,194	1,259	130,338	131,597	\$63,347,883	\$12,135,197,562	\$12,198,545,445
2010	229	1,054	1,158	1,201	153,075	154,276	\$58,707,224	\$11,132,702,693	\$11,191,409,916
2011	214	1,016	1,115	1,213	159,724	160,937	\$79,260,413	\$12,586,640,373	\$12,665,900,786

Figure 2: Connecticut In-State Defense Contractors, DoD and DHS, FY2003– FY2011

Source: USAspending.gov; DoD and DHS contract actions

Note: Counts are based on unique vendor ID codes and contract ID codes. A vendor (contractor) is a business unit that has entered into a contract to supply products or services.

In 2011, 1,115 contractors supplied defense products to DoD and DHS, a 20 percent increase since 2003 (187 more contractors than were involved in 2003). As shown in Figure 3, the vast majority of contract spending to Connecticut came from DoD.

➤ **Connecticut ranked 7th and 23rd for DoD and DHS contracts in 2011**

DoD Awards				DHS Awards			
State Name	DoD Rank	Value of DoD Contracts	Percent of U.S. Total DoD Awards	State Name	DHS Rank	Value of DHS Contracts	Percent of U.S. Total DHS Awards
Virginia	1	\$56,688,567,483	15.2%	Virginia	1	\$5,077,157,706	35.7%
California	2	\$43,093,461,706	11.5%	Maryland	2	\$1,744,825,269	12.3%
Texas	3	\$36,449,140,146	9.7%	Mississippi	3	\$1,069,959,008	7.5%
Maryland	4	\$15,127,416,034	4.0%	California	4	\$743,602,895	5.2%
Florida	5	\$13,531,873,193	3.6%	Massachusetts	5	\$686,695,705	4.8%
Massachusetts	6	\$13,039,291,755	3.5%	Texas	6	\$540,735,366	3.8%
Connecticut	7	\$12,586,640,373	3.4%	Florida	7	\$463,858,451	3.3%
Arizona	8	\$11,929,182,337	3.2%	Georgia	8	\$344,895,922	2.4%
Pennsylvania	9	\$11,196,829,994	3.0%	New Jersey	9	\$336,947,705	2.4%
Missouri	10	\$9,180,312,902	2.5%	Washington	10	\$271,589,141	1.9%
				Connecticut	23	\$79,260,413	0.6%

Figure 3: Top Ranked States, DoD and DHS Contract Awards, FY2011

Source: USAspending.gov; DoD and DHS contract actions

Since 2003, in every year but 2006, Connecticut has ranked among the top 10 states for contract awards from DoD.⁶ Defense contracting has become vital to Connecticut. Approximately 95 percent of federal contract spending to the state comes from DoD and DHS.

⁶ For state rankings at the product group level see Appendix IV.

Top Defense Industry Sectors

Taken as a whole, the defense industry in Connecticut is characterized by activities in one dominant sector - the Transportation Equipment Manufacturing sector (NAICS 336) - which has consistently ranked as the top sector in the state since 2003. In 2011, three-quarters of total defense purchases made in the state were made in this sector. Establishments in this sector – which include ship and boat building and repairing firms; aerospace product and parts manufacturers (including producers of aircraft products and parts and guided missiles in their entirety and as separate parts); and motor vehicle parts manufacturers – make intensive use of technology, science and engineering in their development and production activities. These establishments also rely on a state- and region-wide cluster of manufacturing suppliers – including machinery manufacturers, electrical equipment and component manufacturers, fabricated metal product manufacturers, and machinery repair and maintenance firms – to provide components, maintenance and other support for manufacturing production activities. The other major player in Connecticut’s defense industry is Professional, Scientific and Technical Services (NAICS 541), which, since 2003 has ranked consistently as the second-ranked earning sector in the state. Two additional sectors – Support Activities for Transportation (NAICS 488) and Machinery Manufacturing (NAICS 333) – which play direct, supportive roles to transportation equipment manufacturing activities in the state, are currently the third and fourth ranked sectors in Connecticut.

Transportation Equipment Manufacturing

Over time, the defense industry in Connecticut has become increasingly intensive in transportation equipment manufacturing activities: the total value of contract purchases to this sector nearly doubled between 2003 and 2011 (from a total value of \$4.9 billion 2003 to \$9.5 billion in 2011). This sector was the top ranked sector in the state in each of those years. In 2011, seventy-five percent of defense purchases in Connecticut went to this broad sector, up from 58 percent of total purchases in 2003. In 2011, major purchases were made in Aerospace Product and Parts Manufacturing (NAICS 3364), which earned \$5.7 billion, up 95 percent since 2003; and Ship and Boat Building (NAICS 3366), which earned \$3.8 billion, up 96 percent since 2003. Important activities within these sectors in Connecticut, based on contract values, include the manufacturing of submarines; aircraft; aircraft components; and engines, turbines and components.

Professional, Scientific, and Technical Services

Contracting patterns also point to a continued interest in the purchase of specialized technical services and research and development services from Connecticut vendors, although defense purchases from this sector in Connecticut have decreased somewhat since 2003. The professional, scientific and technical services sector is comprised of establishments that provide expertise in multiple fields such as engineering, architecture and scientific research and development. In 2011, Connecticut vendors in this sector were awarded more than \$1.4 billion worth of contracts, 11.3 percent of the Connecticut total, down from nearly 18 percent of contracts valued at \$1.5 billion in 2003. In 2011, major purchases were made in Architectural, Engineering and Related Services (NAICS 5413), which earned \$851 million, up 199 percent since 2003; and Scientific Research and Development Services (NAICS 5417), which earned \$535 million, down 46 percent since 2003.

- **The Connecticut defense industry is dominated by the transportation equipment manufacturing sector**

Industry Sector	Fiscal Year									2011		
	2003 Rank	2004 Rank	2005 Rank	2006 Rank	2007 Rank	2008 Rank	2009 Rank	2010 Rank	2011 Rank	Value of Contracts	Percent of Total	
Transportation Equipment Manufacturing (336)	1	1	1	1	1	1	1	1	1	\$9,511,802,971	75.1%	
Professional, Scientific, and Technical Services (541)	2	2	2	2	2	2	2	2	2	\$1,427,345,189	11.3%	
Support Activities for Transportation (488)	10	16	17	10	10	3	3	3	3	\$408,987,643	3.2%	
Machinery Manufacturing (333)	8	8	9	7	4	9	5	4	4	\$342,199,878	2.7%	
Merchant Wholesalers, Nondurable Goods (424)	11	12	4	4	5	7	4	6	5	\$161,280,393	1.3%	
Food Manufacturing (311)	31	50	31	18	19	17	12	7	6	\$130,241,808	1.0%	
Chemical Manufacturing (325)	15	9	15	13	11	12	13	10	7	\$86,688,126	0.7%	
Computer and Electronic Product Manufacturing (334)	5	7	7	6	7	8	7	9	8	\$79,950,541	0.6%	
Construction of Buildings (236)	9	10	16	11	12	11	11	5	9	\$77,826,283	0.6%	
Electrical Equipment, Appliance, and Component Manufacturing (335)	6	6	8	9	9	4	6	8	10	\$72,094,396	0.6%	
All others (Includes N/A)										\$367,483,559	2.9%	
Total										\$12,665,900,786	100.0%	

Figure 4: Top Connecticut Defense Sectors, 2003 - 2011

Source: USAspending.gov; DoD and DHS contract actions

Top Products and Services

Products, services, and R&D purchased by the federal government are classified according to a set of codes that indicate the predominant type of product or service purchased through a contract action.⁷ In this section, contract spending is analyzed by product and service categories and codes to determine top spending areas and indicate relative strengths within the Connecticut defense economy. See Appendix V for an analysis of U.S. state rankings for top defense products in New England.

Top Purchases from Connecticut Contractors

Connecticut excels in the production of defense-related transportation equipment. More than 80 percent of defense purchases from the state in 2011 (\$10.2 billion) went towards manufactured products, and nearly 90 percent of this total (\$9.1 billion) went towards defense-related transportation products. Major products include submarines and related equipment (for example, the U.S. Navy's 14th Virginia-class submarine, SSN-787); rotary wing aircraft (Sikorsky Black Hawk helicopters) and aircraft components; and engines, turbines and components. Purchases related to these large-scale production activities involve dominant primary contractors as well as many hundreds of sub-contractors and supplier contractors in Connecticut and across the region. An additional, major strength in Connecticut is its ability to provide defense systems research and development services.

Top Defense Products

Connecticut provides a variety of complex defense-related products and components related to defense transportation systems including ships; aircraft; engines, and turbines and components. The production of the state's top defense products flows from the presence of a mature and advanced manufacturing sector, comprised of highly-trained and well-educated workers. The state's top three manufactured defense products in 2011 (which have remained in the top three since 2003), include Ships; Aircraft and Airframe Structural Components; and Engines, Turbines, and Components. Contracts for Ships, the largest area of purchasing in the state, accounted for over \$3.9 billion in 2011, a growth rate of 113 percent since 2003. Contracts for Aircraft and Airframe Structural Components ranked number two among product-types sold by state vendors and accounted for more than \$2.7 billion in purchases in 2011, a growth rate of more than 300 percent over 2003. Purchases of Engines, Turbines and Components ranked number three in 2011, with sales of more than \$1.95 billion in 2011, approximately 2 percent more than purchases made in 2003. The fourth ranked product area in 2011 was Aircraft Components and Accessories, which experienced a 33

⁷ This section is based on federal product and service categories which are comprised of detailed product codes. For more information see the *Federal Procurement Data System Product and Service Codes Manual*, August 2011 Edition, at <https://www.acquisition.gov>.

percent decline in contract purchases from 2003. As Appendix V illustrates, Connecticut is positioned as a strong competitor in the nation for the production of all of these types of defense transportation equipment.

➤ **Connecticut is a key provider of ships, aircraft and transportation-related equipment and components**

Product	Rank								2011	
	2003	2004	2005	2006	2007	2008	2009	2010	Rank	Contract Amount
Ships, Small Craft, Pontoons, And Floating Docks	2	1	2	1	2	2	1	1	1	\$3,924,591,559
Aircraft And Airframe Structural Components	4	3	3	2	3	1	2	2	2	\$2,719,016,918
Engines, Turbines, And Components	1	2	1	3	1	3	3	3	3	\$1,959,237,283
Aircraft Components And Accessories	3	4	4	4	4	4	4	4	4	\$496,642,748
Subsistence	29	26	7	6	7	8	6	5	5	\$267,343,145
Electric Wire, And Power And Distribution Equipment	5	5	6	7	6	5	7	6	6	\$95,688,749
Maintenance And Repair Shop Equipment	25	23	14	12	8	11	12	9	7	\$92,550,786
Fuels, Lubricants, Oils, And Waxes	7	24	5	10	33	29	9	13	8	\$75,860,899
Instruments And Laboratory Equipment	8	9	12	13	9	14	14	11	9	\$40,059,583
Engine Accessories	6	8	13	9	13	20	11	10	10	\$39,320,661
All other Products(n=61)										\$487,988,946
Total										\$10,198,301,278

Figure 5: Top Connecticut Product Subsectors by Contract Value

Source: USAspending.gov; DoD and DHS contract actions

Top Research & Development Services

The leading type of R&D provided by Connecticut vendors is Defense Systems R&D (related to aircraft, missile and space systems; ships; tanks; weapons; electronics and communications and hard goods) - nearly \$1.1 billion in this category was sold in 2011. Sales to Connecticut decreased in this area by 31 percent since 2003. Contracts for ‘Defense Other’ R&D (including research and development related to ammunition; services; subsistence; textiles, clothing and equipage; fuels and lubricants, construction and other defense) is the second major type of R&D services provided by Connecticut contractors. This product area garnered more than \$167 million in contracts in 2011, a 396 percent increase in sales since 2003. Together, in 2011, these two areas made up more than 98 percent of total R&D contract awards to vendors in the state.

➤ **Defense agencies rely on Connecticut for highly specialized R&D services**

Research Type	Rank									2011	
	2003	2004	2005	2006	2007	2008	2009	2010	Rank	Contract Amount	
R&D- Defense Systems	1	1	1	1	1	1	1	1	1	\$1,082,056,910	
R&D- Defense Other	2	2	2	2	2	2	2	2	2	\$167,264,733	
R&D- Other Research And Development	3	3	4	4	4	5	7	5	3	\$9,168,804	
R&D- Space				13		7	5	4	4	\$5,522,356	
R&D- Medical	8	6	9	3	7	8	9	9	5	\$3,276,827	
R&D- Environmental Protection	10	7	10	7	8	12	4	7	6	\$3,111,688	
R&D- Economic Growth	7	5	6	11	6	10	10	10	7	\$2,030,689	
R&D- Natural Resource			11	10	9		8	8	8	\$797,258	
R&D- Energy	4	11	8	6	5	4	6	6	9	\$68,032	
R&D- Education					10	13	12	11	10	\$45,299	
All other Products(n=2)										-\$1,796,345	
Total										\$1,271,546,251	

Figure 6: Top Connecticut R&D Services Subsectors by Contract Value

Source: USAspending.gov; DoD and DHS contract actions

Note: Defense Other Research and Development includes research of Ammunition; Services; Subsistence; Textiles; Clothing and Equipage; Fuels and Lubricants; Construction; and Other. Other Research and Development includes Basic & Applied Research, Advanced & Engineering Development, Operational Systems Development, and Management and Support.

Top Defense Services

Providers of defense services products play an important role in the Connecticut economy providing jobs for individuals with skills in the trades as well as those with specialized professional and technical expertise. Purchases of Maintenance, Repair, and Rebuilding of Equipment services were the most common type of service purchased from Connecticut contractors. Forty-eight percent of services spending took place in this product line, with a total of \$567 million in contract purchases in 2011. Spending on this category of services has increased by 283 percent since 2003. Support-Management services, with more than \$199 million in purchases (a growth rate of 1,377 percent since 2003), and Support-Professional services, with more than \$116 million in purchases in 2011 (a growth rate of 62 percent since 2003), rounded out the top three services types purchased from Connecticut vendors in 2011.

- **Top services are based on trade-related skills and specialized professional and technical expertise.**

Services	Rank									2011	
	2003	2004	2005	2006	2007	2008	2009	2010	Rank	Contract Amount	
Maintenance, Repair, And Rebuilding Of Equipment	2	2	3	2	1	1	1	1	1	\$578,364,389	
Support- Management	9	11	14	11	8	2	3	2	2	\$199,666,003	
Support- Professional	4	3	2	3	2	3	2	4	3	\$116,305,769	
Environmental Systems Protection	16	18	17	18	11	8	8	6	4	\$45,637,049	
Maintenance Of Structures And Facilities	13	10	13	10	10	11	13	5	5	\$43,388,461	
Construction Of Structures And Facilities	3	6	7	6	3	4	5	3	6	\$36,307,519	
Transportation/Travel/Relocation- Transportation	5	4	4	7	6	15	14	15	7	\$31,950,066	
Housekeeping	11	8	10	9	5	9	9	9	8	\$21,216,197	
Architect And Engineering- Construction	25	22	24	33	31	6	7	14	9	\$20,334,713	
Information Technology And Telecommunications	7	7	8	8	7	10	6	7	10	\$20,165,039	
All other Products(n=32)										\$82,744,820	
Total										\$1,196,080,024	

Figure 7: Top Connecticut Services Subsectors by Contract Value

Source: USAspending.gov; DoD and DHS contract actions

Major Corporate and Institutional Contractors

Major Defense Contractors

In 2011, two major entities – United Technologies Corporation and General Dynamics Corporation – received more than \$11.2 billion in contract purchases, which amounted to more than 88 percent of total contract awards to Connecticut vendors by DoD and DHS. United Technologies is a diversified company with businesses that include Otis; Pratt & Whitney; Sikorsky; UTC Aerospace Systems; UTC Climate, Controls and Security and UTC Power.⁸

- **In FY11, the top two Connecticut contractors received more than 88 percent of all contracts awarded to vendors in the state**

Rank	Company/Institution	Amount	% of all State Contracts
1	United Technologies Corporation	\$6,856,621,380	54.13%
2	General Dynamics Corporation	\$4,350,933,298	34.35%
3	Eurpac Service Incorporated	\$138,282,895	1.09%
4	Stichting Administratiekantoor Unilever N.V.	\$122,612,313	0.97%
5	Goodrich Corporation	\$78,217,579	0.62%
6	Finmeccanica Spa	\$50,121,043	0.40%
7	Cabrera Services Inc.	\$47,975,411	0.38%
8	Kaman Corporation	\$47,218,945	0.37%
9	Merlin Petroleum Company Inc.	\$43,034,928	0.34%
10	SPX Corporation	\$40,722,605	0.32%
	<i>All others (n=933 contractors)</i>	\$890,160,390	7.03%
	Total	\$12,665,900,786	100.00%

Figure 8: Top Connecticut Recipients of DoD and DHS Contracts, FY2011

Source: USAspending.gov; DoD and DHS contract actions

Note: The above analysis is based on unique parent company identification codes, reported directly by the contractor, which sometimes encompass multiple sub-units. The figure includes contract awards to Connecticut-based facilities only. Many contractors have facilities in other geographic locations; defense awards to these out-of-state facilities are not included in this analysis.

The Role of Educational Institutions

Among higher education recipients of contract awards,⁹ Yale University ranked first with nearly \$4 million in 2011, representing 80 percent of defense contract awards to higher education institutions in Connecticut.

⁸ UTC businesses that appear in the USAspending database since 2003 include Carrier Corporation; Hamilton Sundstrand Corporation; North American Elevator Services Company; Otis Elevator Company; Sikorsky Aircraft Corporation; and United Technologies Corporation Pratt & Whitney Division.

⁹ This section provides a look at awards supporting research in a higher education setting only. Only vendors that indicate that they are a higher education institution using the field 'educationalinstitutionflag' are included in the analysis.

University of Connecticut and the United States Coast Guard ranked second and third among Connecticut educational institutions awarded defense contracts in FY2011. Basic biomedical research was the top product type purchased from educational institutions in Connecticut (\$2.6 million in purchases in 2011), followed by purchases of research and development services, including miscellaneous basic research (valued at more than \$993 million) and research and development related to environmental protection (valued at \$596,000).

➤ **Yale receives the highest levels of defense contract funding among Connecticut institutions of higher education**

Rank	School	Amount	% of all state contracts
1	Yale University	\$4,045,450	0.0319%
2	University of Connecticut	\$906,551	0.0072%
3	United States Coast Guard	\$110,991	0.0009%
4	University of New Haven	\$12,500	0.0001%
5	Security University LLC	\$5,250	0.0000%

Figure 9: Top Higher Education Contractors, FY2011

Source: USAspending.gov; DoD and DHS contract actions

Note: This table provides a look at awards supporting research in a higher education setting only. Only vendors that indicate that they are a higher education institution using the field 'educationalinstitutionflag' are included in this table. These data do not include grants for research received from DoD or DHS.

The Importance of the Defense Sector to Connecticut

DoD and DHS contract awards account for the largest pool of federal contract funding to the state – approximately 95 percent of all federal contract payments to Connecticut vendors in 2011. United Technologies Corporation receives the highest dollar amount of defense contract awards of any vendor in the state. The top five federal contract recipients in Connecticut are defense contractors. Each of the top five products or services sold to the federal government is directly related to defense. Clearly the defense industry plays a vital and significant role in the Connecticut economy.

➤ **Ninety-five percent of all federal contracts to Connecticut came from DoD and DHS**

Top Five Contracting Agencies, by Value, FY2011	
Agency	Amount
Department of Defense	\$12,597,414,079
Department of Health and Human Services	\$215,380,558
Department of State	\$172,834,526
Department of Homeland Security	\$79,260,413
Department of Veterans Affairs	\$78,453,330
<i>All other Agencies</i>	<i>\$239,036,167</i>

Top Five Contracting Sub Agencies, by Value, FY2011	
Sub Agency	Amount
Department of the Navy	\$6,946,573,787
Department of the Army	\$3,125,911,050
Department of the Air Force	\$1,170,832,984
Defense Logistics Agency	\$898,819,612
Defense Commissary Agency (Deca)	\$338,382,461
<i>All other Sub Agencies</i>	<i>\$901,859,179</i>

Figure 10: Top Contracting Agencies and Sub-Agencies to Connecticut, FY2011

Source: USAspending.gov; DoD and DHS contract actions as of September 19, 2012

➤ **The top five federal contract recipients in Connecticut are defense contractors**

Company/Institution	Amount
United Technologies Corporation	\$7,046,822,788
General Dynamics Corporation	\$4,352,996,201
Eurpac Service Incorporated	\$138,282,895
Stichting Administratiekantoor Unilever N.V.	\$122,612,313
Goodrich Corporation	\$78,217,579
<i>All other Companies/Institutions</i>	<i>\$1,643,447,297</i>

Figure 11: Top Federal Contract Recipients in Connecticut in FY2011

Source: USAspending.gov; DoD and DHS contract actions as of September 19, 2012

➤ **The top five Connecticut products sold to the federal government are directly related to defense technology**

Product or Service	Amount
Submarines	\$3,855,006,791
Aircraft, Rotary Wing	\$2,737,918,711
Gas Turbines & Jet Engines Aircraft	\$1,950,167,098
Defense Aircraft (Operational)	\$837,879,341
Maint-Rep of Engines & Turbines	\$365,840,714
<i>All other Products or Services</i>	<i>\$3,635,566,418</i>

Figure 12: Top Connecticut Products Sold to the Federal Government, FY2011

Source: USAspending.gov; DoD and DHS contract actions as of September 19, 2012

Note: The product codes used in this table are individual product codes rather than the broader product categories discussed in the earlier analysis.

Part 2: Economic Impacts of Defense in Connecticut

Introduction

This section presents an analysis of economic contributions to Connecticut resulting from defense industry activities performed in New England. We use IMPLAN input-output analysis software to measure economic contributions of federal defense contracts performed in New England.

Economic contribution analysis seeks to estimate the ongoing effects of an initial stimulus (i.e. federal defense contracts) within a regional economy. The premise is that an initial investment in one sector of an economy spurs additional economic activity in other sectors as the money is re-spent within the region. The total economic contribution of the initial investment is estimated by tracing the flow of money among industries and households until all of the initial investment eventually leaves the region through foreign or domestic trade, or is collected as a tax.

The IMPLAN modeling system, a widely used and respected proprietary software, combines the U.S. Bureau of Economic Analysis' Input-Output Benchmarks with regional employment and wage data to construct quantitative models of the flow of goods and services among a region's businesses and households. The system estimates direct, indirect, and induced effects of the original investment. Direct impacts are inputs into the regional economy – in this case, the total dollar value of defense contract work performed in New England. Indirect impacts are the ripple effects that result from spending to supplier firms in other sectors. For example, a defense contract to a manufacturer would lead that manufacturer to contribute additional spending on supplies in the form of goods and services from other sectors. Finally, induced effects are those generated as defense contractor employees spend their wages.

We analyze the economic contributions to Connecticut of defense contracts performed in Connecticut, and contracts performed in the rest of New England.¹⁰ Connecticut defense contractors perform the vast majority of contracts awarded to them in-state, but Connecticut also serves as the principal place of

¹⁰ We use the total dollar value of all contract activities with work performed in Connecticut, regardless of where the contractor is headquartered. As a result, the dollar values for each year differ from the value of Connecticut contracts reported elsewhere in this report for the same year.

performance for contracts awarded to out-of-state contractors.¹¹ In 2011, contractors based in the rest of the United States relied on Connecticut facilities for contract work totaling \$284.4 million. Figure 16 in Appendix II illustrates that Illinois, Florida and Virginia are the states that sent the highest values of contracts to be performed in Connecticut in 2011.

Total Economic Contributions

Overall, economic contributions to Connecticut from federal defense contracts performed in New England totaled \$22.4 billion in 2011. This included nearly \$12.4 billion in direct impacts, or contracts performed in Connecticut. Work performed in other New England states contributed to more than \$1.1 billion in indirect and induced effects in Connecticut. Additionally, federal defense contracts performed in Connecticut provided for the direct employment of an estimated 40,900 workers in 2011, while work performed in Connecticut and elsewhere in New England indirectly supported the employment of an additional 55,000 and 4,000 workers, respectively, in related industries. Defense contracts performed in Connecticut directly supported nearly \$4.2 billion in labor income for Connecticut defense workers and indirectly supported an additional nearly \$3.4 billion in labor income for workers in related industries. Work performed elsewhere in New England indirectly supported an additional \$343 million in labor income for Connecticut workers.

Average wages for direct employees of firms performing defense contracts in Connecticut were estimated at more than \$102,000, significantly higher than the 2011 state average of \$61,110. Average annual wages in jobs indirectly supported by defense contracts performed in Connecticut were estimated at \$60,673, much closer to the state average, while estimated average wages in jobs indirectly supported by contracts performed in the rest of New England at nearly \$74,400 were also higher than the state average, perhaps reflecting neighboring states' interdependence on Connecticut for defense-related goods and services produced by Connecticut's unique mix of high-skilled workers. Figure 13 shows Connecticut economic contributions, employment, labor income, and average wages resulting from defense contracts performed in New England.

¹¹ In 2011, for example, 2.3 percent of all contract work performed in Connecticut came from out-of-state vendors.

	Direct Contribution of Work Performed in Connecticut	Indirect + Induced Contribution from Work Performed in Connecticut	Contributions to Connecticut from Work Performed Elsewhere in New England (Indirect + Induced)	Total Contributions to Connecticut
Total Output	\$12,394,237,512	\$8,877,866,951	\$1,147,382,937	\$22,419,487,399
Employment	40,964	55,773	4,621	101,359
Labor Income (included in Total)	\$4,195,005,637	\$3,383,940,474	\$343,887,773	\$7,922,833,885
Average Wage	\$102,407	\$60,673	\$74,411	

Figure 13: Connecticut Economic Output, Employment, Labor Income, and Average Wage, 2011

Source: UMDI Calculations; IMPLAN Economic Analysis Software, Minnesota IMPLAN Group

Note: Dollar values have been adjusted to 2011 dollars.

Figure 14 illustrates the industry sectors in the Connecticut economy for which federal defense contracts have the greatest total economic contributions.¹² Federal defense work performed in New England results in significant contributions to high-tech sectors. “Ship building and repairing” is the Connecticut industry sector the most impacted by federal defense within the state, with more than \$3.7 billion in total economic contributions (including direct, indirect and induced effects of work performed anywhere in New England). “Aircraft manufacturing” is the second most impacted sector, with over \$3.1 billion in total economic contributions. In total, economic contributions to the top four industry sectors, all with contributions well more than \$1 billion, add up to more than 47 percent – nearly half – of all federal defense contract contributions within the state.

¹² Industry sectors in this discussion refer to the 440 industry sectors used by the IMPLAN software, which are based on, but not the same as, NAICS sectors discussed elsewhere in this report. The sector “Residential and commercial real estate” is a combination of IMPLAN sectors 360, Real estate establishments, and 361, Imputed rental activity for owner-occupied dwellings.

Sector	Indirect + Induced Contributions to Sector from Work Performed in New England
Ship building and repairing	\$3,701,897,738
Aircraft manufacturing	\$3,131,224,333
Aircraft engine and engine parts manufacturing	\$2,540,748,562
Residential and commercial real estate	\$1,164,357,467
Architectural, engineering, and related services	\$929,086,528
Other aircraft parts and auxiliary equipment manufacturing	\$854,283,855
Scientific research and development services	\$646,234,139
Wholesale trade businesses	\$632,401,406
Scenic and sightseeing transportation and support activities for transportation	\$388,647,688
Management of companies and enterprises	\$334,644,392

Figure 14: Top 10 Connecticut Sectors Impacted by Federal Defense Contracts Performed in New England in 2011

Sources: UMDI Calculations; IMPLAN Economic Analysis Software, Minnesota IMPLAN Group

Taxes Generated by Defense Contracts

Federal defense contracts to New England make substantial federal state and local tax payments. As shown in Figure 15, federal taxes paid in accordance with direct, indirect and induced contributions of federal defense contract work performed in New England totaled nearly \$1.7 billion in 2011, while state and local taxes in Connecticut totaled an nearly \$859 million.¹³

Federal Taxes	\$1,741,942,053
State and Local Taxes	\$858,905,212

Figure 15: Federal, State, and Local Tax Impacts of Direct, Indirect, and Induced Defense-Related Economic Contributions in Connecticut, 2011

Sources: UMDI Calculations; IMPLAN Economic Analysis Software, Minnesota IMPLAN Group

With more than 101,000 jobs generated and \$22.4 billion in total economic impact in FY2011, the defense industry remains an integral part of the Connecticut economy.

¹³ See Appendix II for details on tax categories included in these two groups.

Conclusion

Connecticut's unique qualities – home to a highly trained and educated workforce and a density of mature defense technology companies along with a broad-based supply chain – make Connecticut a uniquely strategic location for federal defense contracting. The industry is responsible for billions of dollars in contract awards to Connecticut each year, as well as the generation of significant employment, payroll, and taxes. Not only is the defense industry important in the state, but the growing number and value of contracts awarded to Connecticut in the past decade illustrates the increasingly important role the state plays in meeting the needs of the DoD and DHS.

Contract awards associated with specialized technology production and professional and technical services continue to dominate the defense industry in Connecticut, and will likely be increasingly important for the future development and cultivation of the industry within the state. According to the 2010 Quadrennial Defense Review Report,¹⁴ any defense priorities and initiatives will lean heavily on new technology development and technology-based research and development. A review of current science and technology priorities, recent developments and recommendations can be found in the Defense Science Board's Basic Research Task Force report of January 2012.¹⁵

Impacts generated by the defense industry to the state have increased in the past decade. In particular, increasing revenues along with increases in employment and payroll are especially important to the Connecticut economy. A major risk to the continued growth of the defense industry in the region comes with the requirements of the 2011 Budget Control Act. Defense budget cuts related to the requirements of the Budget Control Act will impact the New England economy in both the short- and long-term.¹⁶ To remain consistent with the Budget Control Act in the long-term, the DoD is in the process of reducing spending on its base budget by \$487 billion, over ten years starting in FY2012. To meet new budget targets while also maintaining national security responsibilities, the DoD has reshaped defense spending priorities based on a

¹⁴ *Quadrennial Defense Review Report, February 2010 (QDR) 2010.* <http://www.defense.gov/qdr/>

¹⁵ *The Report of the Defense Science Board Task Force on Basic Research.* Office of the Under Secretary of Defense for Acquisition, Technology and Logistics Washington, D.C. January 2012. <http://www.acq.osd.mil/dsb/reports/BasicResearch.pdf>. An archive of current documents related to DoD applied and basic research priorities are available at the following American Association of Universities web page: http://www.aau.edu/policy/departments_of_defense.aspx?id=7316

¹⁶ The DoD has created a page on its website related to defense budget plans that contains useful news articles, budget reports, speeches and transcripts. To access this information see: U.S. Department of Defense Special Feature: FY2013 Budget Proposal. http://www.defense.gov/home/features/2012/0212_budget

new defense strategy. Guided by the strategy, every part of the budget was examined, and a final budget was developed.¹⁷ Proposed cost savings targeted in four areas of the defense budget: efficiencies, force structure reduction, procurement adjustments, and compensation.¹⁸

Cost savings initiatives along with investment priorities related to the new strategy will have potential short- and long-term impacts on the New England economy. According to statements from Secretary of Defense Leon E. Panetta, the President will likely request that Congress authorize the Base Realignment and Closure (BRAC) process for 2015. Force structure reductions will be made to emphasize geographic focus on Asia and the Middle-East; and cuts and readjustments will be made to the air and navy fleets, which could impact the New England product line. At the same time, key investments will be made in space, in cyberspace, in long-range precision strike-capabilities and in special operations forces. Investments will be made to insure retention of the military's technological strength with funding for science and technology research, including significant funding for basic research; other investments will be made to develop unmanned air systems as well as cyber activities and operations.¹⁹

In the immediate term, significant budget cuts, if enacted, will likely pose a challenge for many defense contractors and their supply chain both within New England and across the nation. In order for DoD to comply with the spending limits set forth in the Budget Control Act of 2011, its FY2013 budget (starting October 1, 2012), has been reduced from FY2012. Pentagon spending has shifted in several key areas that are generally relevant to the New England product line. According to the February 2012 Financial Summary Tables, in FY2013 the procurement budget is reduced by 13 percent; research, development, testing, and evaluation spending will be reduced by 5.5 percent.²⁰ Additional budgetary challenges loom if Sequestration requirements are imposed on top of the existing, planned cuts. The Budget Control Act's sequestration provision would require an additional \$500 billion reduction to the defense budget over the next nine years if Congress does not pass budget reduction legislation. Absent further congressional action, the first round of these significant reductions is scheduled to be ordered on January 2, 2013.²¹

¹⁷ *Defense Budget Priorities and Choices*. January 2012. Page 3. http://www.defense.gov/news/Defense_Budget_Priorities.pdf;

¹⁸ Information from *Opening Summary – Senate Budget Committee (Budget Request) as delivered by Secretary of Defense Leon E. Panetta*. Capitol Hill, Washington D.C., February 28, 2012. <http://www.defense.gov/speeches/speech.aspx?speechid=1654>.

¹⁹ Information from *Opening Summary by Secretary of Defense Leon E. Panetta*. More detailed information on DoD's current strategic guidance for budget choices can be found in *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*. January 2012. http://www.defense.gov/news/Defense_Strategic_Guidance.pdf; also in *Defense Budget Priorities and Choices*. http://www.defense.gov/news/Defense_Budget_Priorities.pdf;

and in various *Fiscal FY13 Budget Request Overview* documents. <http://comptroller.defense.gov/budget.html>;

²⁰ *Financial Summary Tables – Department of Defense Budget for Fiscal Year 2013*. February 2012.

http://comptroller.defense.gov/defbudget/fy2013/FY2013_Financial_Summary_Tables.pdf

²¹ See page 3, *OMB Report Pursuant to the Sequestration Transparency Act of 2012* (P. L. 112–155).

A study by George Mason University (GMU) estimates that the combined effects of statutory spending limits and automatic spending reductions imposed by the Budget Control Act would reduce total DoD spending nationally by a total of \$56.7 billion in FY2012 and FY2013, a total that includes \$7.1 billion in payroll reductions and \$49.6 billion in procurement reductions.²² According to the estimates presented in the GMU study, the effect of these two types of cuts to the defense budget in FY2012 and FY2013 could lead to job losses totaling more than 90,000 across New England and labor income losses of more than \$3.8 billion. Connecticut alone could stand to lose in excess of 36,000 jobs, \$1.5 billion in labor income, and \$3.1 billion in GDP.²³

²² Fuller, Stephen S. *The Economic Impact of the Budget Control Act of 2011 on DoD & non-DoD Agencies*. Center for Regional Analysis, George Mason University. July 17, 2012. Page 5. http://www.aia-aerospace.org/assets/Fuller_II_Final_Report.pdf

²³ Totals in this section assume that state totals can be added together to come up with a total New England regional impact.

Appendix I. Executive Summary

The defense industry is an important and expanding component of the Connecticut economy. Since 2003, the Department of Defense and the Department of Homeland Security have engaged thousands of Connecticut firms and institutions to provide essential equipment, supplies and technical services in support of national defense operations. Connecticut ranks among the top ten states (ranked number 7 in 2011) as a provider of goods and services, and contract awards to Connecticut vendors have risen in value by 83 percent since 2003.

The report provides an overview of the nature and scale of the defense industry within Connecticut. The analysis provides a look at the unique aspects of the defense industry in Connecticut and looks at important trends over the period between 2003 and 2011. Findings from the analysis include the following key points.

The defense industry is a major contributor to the economy of New England and to its six states.

- Defense contract awards to New England firms and institutions **totaled nearly \$34 billion, representing 9 percent of U.S. defense and homeland security contracts** in 2011. New England-led defense awards **have risen 85 percent** since 2003, but growth trends have varied by state.
- Direct spending by the defense industry in New England **totaled \$32.5 billion**. New England vendors spent \$30.7 billion within the region and another \$1.7 billion in work was brought in by out-of-state vendors
- This defense industry spending in the region **generated more than \$62 billion** within the region and its activities **supported more than 319,000 jobs**.
- The value added to the regional economy from defense spending (both directly and from the indirect and induced economic activity from this spending) represents, conservatively, **4.1% of New England regional GDP**.

New England has measurable strengths. The region excels in three major types of activities

- The largest cluster of activity (in terms of total sales) revolves around **transportation equipment manufacturing** (including producers of ships; aircraft; engines and components; and missile systems). Related **machinery manufacturing** and **equipment maintenance** sub-sectors are also strong.
- Another key sector is **professional, scientific & technical services** (which includes providers of scientific research and development services and engineering services).
- A third major strength in New England is in **computer and electronic product manufacturing** (especially providers of navigational, measuring and control instruments and communications equipment).
- Each state has different strengths when it comes to industry sectors and these strengths are discussed in detail in the individual state reports.

New England's major product lines flow out of its three major clusters of activity.

- New England excels in providing a range of advanced manufactured products (top sales include: **ships; engines, turbines and components; aircraft and airframe structural components; guided missiles and communication, detection and coherent radiation equipment.**
- **Research and development** is a major product line in New England and contracts in this area go to a variety of private firms; institutions of higher education; and specialized research and consulting organizations. The leading type of R&D in the region is **defense systems R&D** which covers aircraft, missile and space systems; ships; tanks; weapons; electronics and communications; and hard goods. Research and development related to on-the-ground equipment and materials (**defense 'other' R&D**) is another a major area for New England.

The defense industry in Connecticut is an important cluster of activities within the state and is by far the major recipient of federal contracts.

- Defense contract awards to Connecticut firms and institutions **totaled nearly \$12.7 billion** in 2011 and represented 95 percent of all federal contract awards to Connecticut.
- Direct spending by defense contractors in 2011 **generated \$22.4 billion** within the state and its activities **supported more than 101,000 jobs.**
 - Defense contract work performed in the state translated into nearly \$21.3 billion in total economic activity for the state.
 - Work performed in other parts of New England generated an additional \$1.1 billion in indirect and induced effects in Connecticut.
- The value added to the state's economy from defense spending (both directly and from the indirect and induced economic activity of this spending) represents, conservatively, **5.1% of Connecticut GDP.**
- The top five federal contract recipients in Connecticut are defense contractors.
- The top five products or services sold to the federal government are defense products: submarines; rotary wing aircraft; gas turbines and jet engines aircraft; defense aircraft; and maintenance and repair of engines & turbines.

The defense industry in Connecticut has been a source of remarkable economic expansion. However, defense budget cuts related to the requirements of the 2011 Budget Control Act have the potential to impact growth.

- During a period of serious economic decline in many areas of the economy, the defense industry has been a source of growth.
- Defense awards to Connecticut firms **have risen 51 percent** from nearly \$8.4 billion in 2003 to more than \$12.6 billion in 2011.

Defense contracts, which support technical, high value-added sectors of the economy, employ large numbers of highly educated and trained workers.

- Federal defense contracts support work in advanced manufacturing and specialized technical and professional services:
 - The **Transportation Equipment Manufacturing** sector – including aerospace product and parts manufacturers and manufacturers of ships – earned \$9.5 billion in federal contracts in 2011 and purchases in this sector have nearly doubled since 2003.

- The **Professional, Scientific and Technical Services** sector – including providers of architecture, engineering and related services and scientific research and development services – earned more than \$1.4 billion in federal contracts, an increase of 93 percent since 2003.
- Defense contract work in New England **supported more than \$7.9 billion in labor income** for Connecticut workers.
 - Work in Connecticut directly supported nearly \$4.2 billion in labor income for Connecticut defense workers, and indirectly supported an additional nearly \$3.4 billion in labor income for workers in related industries.
 - Defense work located elsewhere in New England indirectly supported an additional \$343 million in labor income for Connecticut workers.

Defense-related contracts support some of the state's largest manufacturers and employers.

- In 2011 **two major corporations** were awarded a combined total of more than \$11.2 billion, which amounted to 88 percent of federal defense contract awards to Connecticut:
 - United Technologies Corporation: \$6.9 billion
 - General Dynamics Corporation: \$4.4 billion

Appendix II. Defense Work in Connecticut by Originating State

Connecticut defense contractors perform approximately 96 percent of their contract work, valued at more than \$12.1 billion, within Connecticut. But the state also serves as the ‘principal place of performance’²⁴ for contracts awarded to out-of-state contractors. In 2011, contractors from nearly every other state utilized Connecticut facilities to perform defense contract work valued at \$284.4 million.²⁵

The economic impact analysis in this study combines the value of the work done in the state by Connecticut contractors with the value of the work done by out-of-state contractors (which adds to a total of nearly \$12.4 billion) to approximate direct spending by the defense industry within the state.

- **The vast majority of defense work performed in Connecticut comes from in-state contractors**

Rank	Vendor State	Value of Contracts
1	Connecticut	\$12,102,490,016
2	Illinois	\$69,070,586
3	Florida	\$51,914,034
4	Virginia	\$38,824,766
5	Washington	\$25,626,887
6	Massachusetts	\$18,550,778
12	Maine	\$4,568,353
14	Rhode Island	\$4,301,003
19	New Hampshire	\$2,180,619
41	Vermont	\$85,007
	All Other States	\$69,296,821
	Total	\$12,386,908,869
	Work done by outside vendors	\$284,418,853
		2.3 percent of total

Figure 16: Value of FY2011 Defense Contract Work Performed in Connecticut, by Contractor Location

Source: USAspending.gov; DoD and DHS contract actions

²⁴ The ‘Principal Place of Performance State’ is the state where the majority of the work on the contract is performed.

²⁵ This total is not the same as work performed in the state by in-state sub-contractors. The USA Spending database is only beginning to offer data on work awarded to sub-contractors.

➤ **Out-of-State vendors brought more than \$284 million in defense work to Connecticut in 2011**

FY2003			FY2011		
Rank	State	Contract Values	Rank	State	Contract Values
1	Connecticut	\$7,925,142,538	1	Connecticut	\$12,102,490,172
2	Washington	\$38,013,901	2	Illinois	\$69,070,586
3	Virginia	\$29,241,572	3	Florida	\$51,914,034
4	Massachusetts	\$22,740,123	4	Virginia	\$38,733,676
5	New Jersey	\$13,152,935	5	Washington	\$25,626,887
6	Minnesota	\$11,913,650	6	Massachusetts	\$18,550,778
7	New York	\$9,761,144	7	Pennsylvania	\$14,609,330
8	California	\$8,883,091	8	Texas	\$11,487,580
9	Kentucky	\$6,712,177	9	Maryland	\$8,459,525
10	Maryland	\$5,754,543	10	California	\$6,226,909
11	Rhode Island	\$4,816,998	11	Colorado	\$4,763,897
12	Colorado	\$3,250,656	12	Maine	\$4,568,353
13	New Hampshire	\$2,935,971	13	New Jersey	\$4,384,245
14	Illinois	\$2,733,756	14	Rhode Island	\$4,301,003
15	District of Columbia	\$2,397,635	15	Alabama	\$3,416,665
16	Ohio	\$1,920,160	16	New York	\$2,708,674
17	Alabama	\$1,402,707	17	Kentucky	\$2,396,189
18	Georgia	\$1,298,497	18	Missouri	\$2,211,654
19	Florida	\$1,082,593	19	New Hampshire	\$2,180,619
20	Pennsylvania	\$1,077,272	20	Oklahoma	\$1,798,181
21	North Carolina	\$1,031,955	21	Alaska	\$1,361,480
22	Louisiana	\$998,270	22	Ohio	\$946,583
23	Missouri	\$331,372	23	Minnesota	\$468,029
24	Michigan	\$249,396	24	Indiana	\$465,494
25	South Carolina	\$217,300	25	Georgia	\$403,272
	<i>Other*</i>	\$1,441,436		<i>Other*</i>	\$3,273,963
	Total	\$8,098,501,648		Total	\$12,386,817,779

Figure 17: Value of Contracts Performed in Connecticut, by Both In- and Out-of-State Vendors in FY2003 and FY2011

Source: USAspending.gov; DoD and DHS contract actions

*Note: Includes other countries

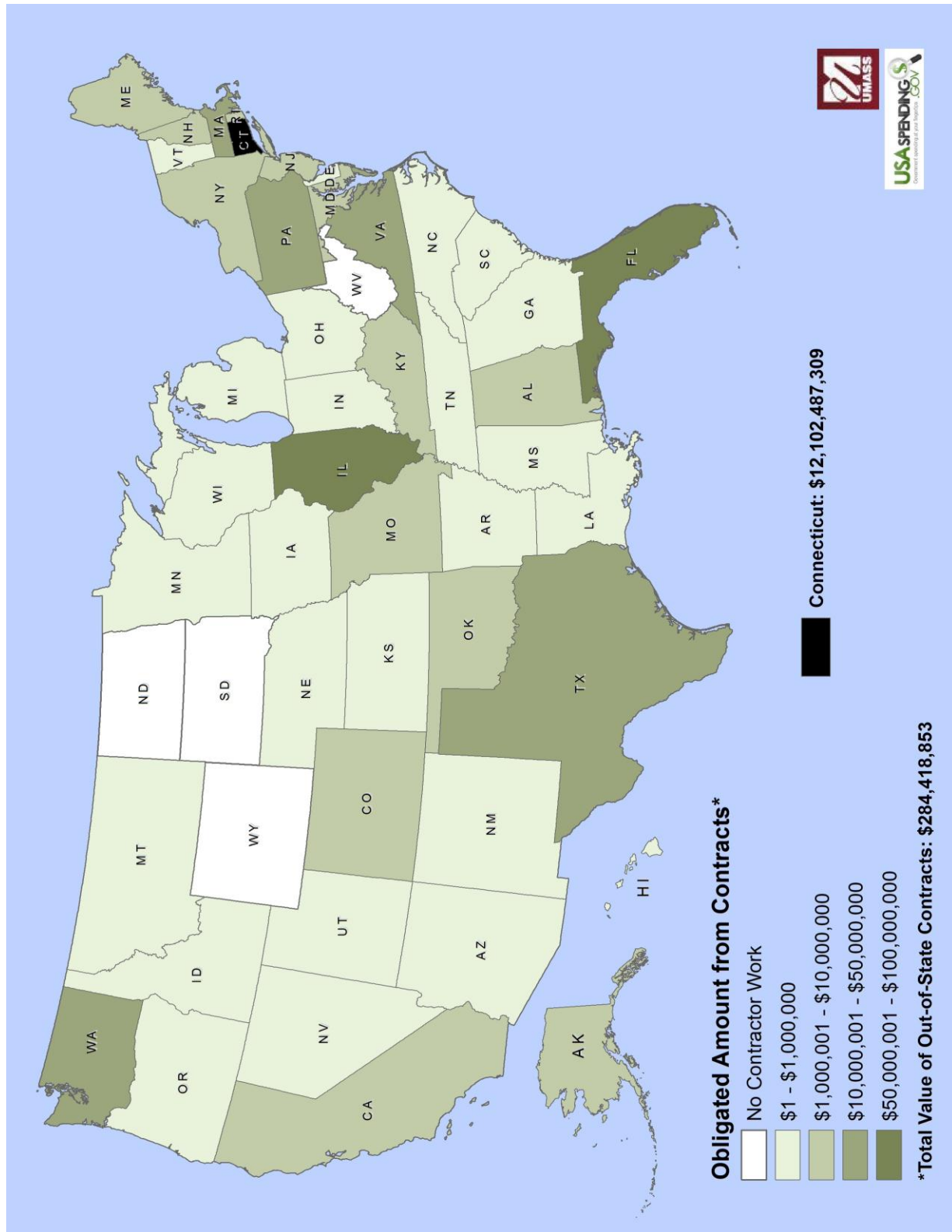


Figure 18: Place of Performance Map FY2011

Source: USAspending.gov; DoD and DHS contract actions

Appendix III. Tax Analysis Categories

Tax Category Breakdown	
State/ Local Government Non-Education	Federal Government Non-Defense
Corporate Profits Tax	Corporate Profits Tax
Dividends	Indirect Business Tax: Custom Duty
Indirect Business Tax: Motor Vehicle Licesnse	Indirect Business Tax: Excise Taxes
Indirect Business Tax: Other Taxes	Indirect Business Tax: Federal Non Taxes
Indirect Business Tax: Property Tax	Interest (Gross)
Indirect Business Tax: S/L Non Taxes	Personal Tax: Estate and Gift Tax
Indirect Business Tax: Sales Tax	Personal Tax: Income Tax
Indirect Business Tax: Severance Tax	Personal Tax: Non Taxes
Interest (Gross)	Social Security Tax Employee Contribution
Personal Tax: Estate and Gift Tax	Social Security Tax Employer Contribution
Personal Tax: Income Tax	
Personal Tax: Motor Vehicle License	
Personal Tax: Non Taxes	
Personal Tax: Other Tax	
Personal Tax: Property Taxes	
Social Security Tax Employee Contribution	
Social Security Tax Employer Contribution	

Figure 19: Tax Category Breakdown

Source: *Using Social Accounts to Estimate Tax Impacts*, by Douglas C. Olson, MIG, Inc, June 11, 1999

Appendix IV. Input-Output Analysis and the IMPLAN Software

Input-Output Analysis and the IMPLAN software

The goal of economic contribution analysis is to estimate the ongoing effects of an initial stimulus (i.e. federal defense contracts) within a regional economy. The premise is that an initial investment in one sector of an economy spurs additional economic activity in other sectors as the money is re-spent within the region. The total economic contribution of the initial investment is estimated by tracing the flow of money among industries and households until all of the initial investment eventually leaves the region through foreign or domestic trade, or is collected as a tax.

This study presents economic contributions estimated using IMPLAN Professional input-output analysis software. Input-output models estimate the level of economic exchange among various industries in a regional economy. This analysis measures the importance of economic activity primarily in terms of output impacts, employment impacts, and tax impacts:

- *Output* is the total value of spending in the region attributable to spending in an industry (in this case, the defense industry).
- *Employment* refers to the number of people employed in the state as a result of defense contracting. This includes wage and salary employees and self-employed individuals.
- *Labor income (Payroll)* is the total estimated salary generated by defense spending in the regional economy.
- *Tax Impact* is the total estimated federal, state, and local tax contributions generated by defense spending

Direct, indirect, and induced effects

Direct impacts are inputs into the state economy – in this case, we express them as the total dollar value of the defense contract work performed in the region (Connecticut). Indirect impacts are purchases of Connecticut goods or services made by New England defense contractors as a result of receiving the contract(s). Induced effects are the impacts of household expenditures from wages and salaries for both direct and indirect employees.

IMPLAN

The IMPLAN modeling system, a widely used and respected proprietary software, combines the U.S. Bureau of Economic Analysis' Input-Output Benchmarks with regional employment and wage data to construct quantitative models of the flow of goods and services among a region's businesses and households, and estimates direct, indirect and induced effects of the original investment. IMPLAN's proprietary database details economic activity in 440 industry sectors; "institutions" such as local, state and federal governments; and households. IMPLAN models are highly customizable by the analyst to reflect the best, most up-to-date knowledge about local spending patterns.

Methodology

Multi-regional Input-Output (MRIO) Analysis

Recent improvements in IMPLAN's proprietary data structure and software now allow multi-regional input-output analysis, meaning that the effects of initial inputs to one region – in this case, a New England state – can be modeled throughout the entire region. This enables, for instance, the estimation of indirect and induced economic contributions to Massachusetts from defense contracts performed in New Hampshire (as well as Connecticut, Maine, Rhode Island, and Vermont). This study presents the first multi-regional analysis of federal defense contracts in New England.

NAICS to IMPLAN Crosswalk

NAICS codes were aligned to IMPLAN codes for each of the years using an IMPLAN bridge. Since federal spending data are not standardized to single version of NAICS (i.e. 1997, 2002 or 2007), several different versions of NAICS codes were used to match to IMPLAN codes for each of the years. Earlier NAICS codes (i.e. 1997 or 2002) were bridged to NAICS 2007 before being matched to IMPLAN codes.

Missing NAICS Codes

Federal contract data contained contractual actions that had no specified NAICS codes. One method to assign NAICS codes to these expenditures would be to use federal spending product codes, company names, and other information to assign a NAICS code. However, this method is laborious, time-intensive, and in many cases still does not allow for a meaningful assignment. In order to capture the full extent of economic activity these contracts initiated, we assumed that expenditures with missing NAICS codes occurred in the same NAICS codes, and in the same share, as the expenditures with

specified NAICS codes. For instance, if four percent of federal defense spending to specified NAICS codes in the region was for missile manufacturing, then four percent of unassigned expenditures were assumed to be for missile manufacturing.

Missing IMPLAN Sectors

IMPLAN sectors are specific for each geographic region and all of the subsequent economic activity is generated for sectors that exist within that region. Each year, a small number of IMPLAN sectors are assumed not to exist within the Connecticut economy. In the few cases where a NAICS code matched to an IMPLAN sector was assumed not to exist in Connecticut, a closely related IMPLAN sector was used to model the contract actions.

Appendix V. New England's Top Products: State Rankings

Figure 20: State and New England Rankings of New England's Top Ten Products and Services, 2011 Contract Values

Ships, Small Craft, Pontoons, And Floating Docks(19)			Research And Development(A)			Engines, Turbines, And Components(28)			Aircraft And Airframe Structural Components(15)			Guided Missiles(14)		
Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value
	N.E.	\$8,407,388,142	1	CA	\$8,225,569,024	1	N.E.	\$3,379,985,176	1	TX	\$8,936,460,556	1	AZ	\$2,475,907,747
1	ME	\$4,476,109,532		N.E.	\$5,190,389,720	1	CT	\$1,959,237,283	2	CA	\$6,285,023,576	2	CA	\$1,850,329,042
2	MS	\$4,433,480,502	2	VA	\$4,770,278,083	2	MA	\$1,419,688,169	3	WA	\$4,012,164,575	3	N.E.	\$1,754,368,561
3	CT	\$3,924,591,559	3	MA	\$3,608,124,372	3	OH	\$554,143,025	4	GA	\$3,558,075,977	3	MA	\$1,721,303,093
4	VA	\$2,205,079,869	4	AL	\$3,108,684,232	4	IN	\$337,269,205		N.E.	\$2,821,389,095	4	FL	\$491,382,483
5	AL	\$1,410,331,149	5	TX	\$2,995,473,812	5	AZ	\$293,092,279	5	CT	\$2,719,016,918	5	TX	\$382,701,038
6	MD	\$963,051,248	6	MD	\$2,766,453,230	6	FL	\$59,643,735	6	MO	\$2,618,701,537	6	MO	\$171,584,925
7	CA	\$685,136,126	7	NY	\$1,903,415,146	7	CA	\$54,541,102	7	AZ	\$1,267,376,000	7	MN	\$149,609,150
8	LA	\$297,194,507	8	NJ	\$1,632,980,372	8	TX	\$36,124,078	8	VA	\$1,199,479,020	8	MD	\$119,552,246
9	WA	\$50,679,286	9	AZ	\$1,479,519,028	9	VA	\$26,687,584	9	PA	\$1,154,509,160	9	NY	\$66,519,287
10	FL	\$42,756,717	10	CT	\$1,271,546,251	10	MI	\$23,808,202	10	MD	\$807,672,948	10	PA	\$42,501,200
11	WI	\$41,655,764	11	CO	\$1,229,893,490	11	WI	\$23,134,531	11	KS	\$588,313,459	11	IN	\$34,355,048
12	MN	\$26,663,329	12	MO	\$1,220,777,297	12	NY	\$19,030,034	12	NY	\$531,287,546	12	AL	\$33,658,236
13	OR	\$9,358,074	13	PA	\$934,460,219	13	PA	\$18,178,921	13	IL	\$311,563,636	13	NH	\$27,802,579
14	UT	\$8,474,383	14	FL	\$775,931,482	14	IL	\$16,984,263	14	IN	\$165,824,677	14	VA	\$10,390,682
15	MA	\$6,415,100	15	OH	\$733,395,291	15	CO	\$15,745,535	15	FL	\$87,061,137	15	WV	\$5,883,442
16	NJ	\$5,725,152	16	IL	\$522,781,311	16	NV	\$10,137,864	16	MN	\$67,957,550	16	UT	\$4,467,264
17	SC	\$3,766,908	17	WA	\$500,441,651	17	MO	\$8,157,471	17	MA	\$67,676,519	17	SC	\$4,202,173
18	DC	\$3,238,538	18	TN	\$338,581,269	18	AL	\$8,115,762	18	AL	\$44,075,667	18	RI	\$3,904,434
19	TX	\$2,821,002	19	NM	\$253,345,226	19	GA	\$7,726,343	19	OH	\$36,765,228	19	OH	\$3,853,491
20	MI	\$2,630,056	20	GA	\$251,146,634	20	OK	\$7,241,167	20	NV	\$33,581,325	20	CT	\$1,314,762
21	HI	\$2,356,429	21	NH	\$196,462,012	21	NJ	\$7,168,015	21	OK	\$26,595,323	21	NJ	\$1,025,619
22	NY	\$1,560,752	22	IN	\$182,044,930	22	UT	\$6,891,079	22	NM	\$26,487,816	22	OK	\$457,500
23	AZ	\$1,407,919	23	IA	\$167,939,407	23	WA	\$5,306,053	23	VT	\$21,585,844	23	IL	\$431,231
24	GA	\$720,854	24	NC	\$160,921,427	24	MD	\$5,300,239	24	TN	\$16,453,080	24	TN	\$218,442
25	AR	\$678,581	25	NV	\$152,846,012	25	LA	\$5,005,081	25	NJ	\$13,163,281	25	MI	\$188,887
26	MO	\$374,777	26	UT	\$141,016,801	26	TN	\$2,047,748	26	NH	\$12,136,143	26	NE	\$186,495
27	AK	\$368,669	27	MN	\$117,723,362	27	NC	\$2,040,223	27	CO	\$9,203,831	27	WA	\$165,416
28	NC	\$290,089	28	MI	\$110,327,809	28	SC	\$1,530,913	28	UT	\$7,875,640	28	GA	\$118,182
29	IA	\$264,649	29	KS	\$107,356,743	29	KY	\$1,477,287	29	SC	\$7,185,287	29	KS	\$114,234
30	RI	\$248,864	30	AK	\$86,015,183	30	NM	\$677,764	30	IA	\$6,433,214	30	AR	\$61,987
31	TN	\$237,789	31	HI	\$74,990,837	31	MN	\$560,641	31	AR	\$5,094,863	31	NV	\$49,424
32	OK	\$181,746	32	ME	\$73,240,490	32	VT	\$515,154	32	MI	\$3,536,193	32	VT	\$43,694
33	IN	\$133,630	33	MS	\$70,286,446	33	AK	\$419,653	33	SD	\$3,205,679	33	WI	\$36,540
34	IL	\$97,055	34	OR	\$67,179,619	34	AR	\$384,406	34	MS	\$1,860,396	34	HI	\$33,168
35	OH	\$91,308	35	DC	\$63,348,745	35	NH	\$324,589	35	NE	\$1,491,237	35	MS	\$30,729
36	KY	\$91,053	36	WI	\$59,717,477	36	RI	\$219,980	36	RI	\$973,671	36	CO	\$12,000
37	GU	\$59,642	37	OK	\$49,595,982	37	OR	\$205,663	37	WV	\$935,735	37	AK	\$11,500
38	CO	\$25,513	38	SC	\$46,315,722	38	MS	\$195,548	38	OR	\$879,886	38	ID	\$8,743
39	NH	\$23,087	39	WV	\$26,459,742	39	ND	\$179,684	39	NC	\$730,780	39	OR	\$7,200
40	ND	\$19,392	40	LA	\$24,801,877	40	WV	\$111,771	40	DE	\$709,708	40	NC	\$7,191
41	ID	\$16,142	41	RI	\$23,548,757	41	HI	\$100,690	41	WI	\$562,324	41	MT	\$2,850
42	WV	\$5,316	42	NE	\$22,476,355	42	MT	\$92,169	42	LA	\$361,872			
43	NM	\$3,998	43	VT	\$17,467,839	43	DE	\$73,040	43	AK	\$62,370			
44	KS	\$1,550	44	MT	\$13,605,959	44	KS	\$58,884	44	ND	\$60,689			
45	PA	-\$197,261	45	KY	\$10,002,235	45	IA	\$17,383	45	KY	\$57,806			
			46	DE	\$7,273,616	46	ID	\$12,179	46	HI	\$34,250			
			47	AR	\$6,787,070	47	SD	\$6,138	47	WY	\$33,872			
			48	ID	\$6,692,058	48	PR	\$4,586	48	ID	\$29,222			
			49	SD	\$3,261,309	49	NE	\$0	49	MT	\$25,359			
			50	ND	\$2,577,437	50	DC	-\$75,443						
			51	WY	\$2,029,987									
			52	PR	\$1,917,525									
			53	N/A	\$70,307									
			54	GU	\$68,215									
			55	VI	\$40,530									

Communication, Detection, And Coherent Radiation			Support (Professional/Administrative/M			Maintenance, Repair, And Rebuilding Of Equipment(J)			Aircraft Components And Accessories			Ammunition And Explosives(13)		
Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value	Rank	State	Contract Value
1	TX	\$1,736,377,806	1	VA	\$17,915,728,397	1	VA	\$3,589,138,479	1	TX	\$1,130,409,393	1	TX	\$1,669,363,257
	N.E.	\$1,703,348,209	2	TX	\$5,496,795,725	2	TX	\$3,493,165,184		N.E.	\$1,001,057,940	2	MO	\$1,046,839,863
2	CA	\$1,341,247,922	3	CA	\$3,618,994,065	3	FL	\$2,345,760,157	2	CT	\$496,642,748	3	VA	\$701,933,244
3	NY	\$1,332,531,320	4	MD	\$3,240,999,494	4	CA	\$1,653,736,417	3	MO	\$495,729,411	4	AZ	\$651,755,139
4	MA	\$1,186,647,316	5	SC	\$2,714,955,267		N.E.	\$1,211,774,439	4	FL	\$429,652,843	5	FL	\$606,136,207
5	VA	\$987,011,785	6	NJ	\$2,320,673,682	5	OK	\$693,124,718	5	NV	\$368,405,704		N.E.	\$597,162,504
6	MD	\$931,339,844		N.E.	\$1,603,154,276	6	NJ	\$665,949,835	6	CA	\$362,704,650	6	PA	\$383,209,722
7	FL	\$530,898,830	7	AL	\$1,599,765,160	7	CT	\$595,324,205	7	NY	\$328,124,758	7	MN	\$367,604,249
8	NJ	\$505,900,109	8	FL	\$1,495,642,351	8	MD	\$590,153,902	8	AZ	\$291,792,593	8	VT	\$337,397,863
9	IN	\$451,656,023	9	OH	\$1,446,454,272	9	MA	\$568,386,619	9	MS	\$241,239,396	9	IL	\$275,949,484
10	NH	\$405,737,902	10	CO	\$1,186,375,119	10	AL	\$504,618,915	10	MA	\$228,791,147	10	CO	\$269,175,988
11	IA	\$362,457,623	11	MA	\$1,131,508,667	11	GA	\$352,182,208	11	IN	\$172,823,830	11	MA	\$236,925,075
12	OH	\$348,833,065	12	GA	\$708,057,749	12	KS	\$294,551,956	12	NH	\$133,489,026	12	TN	\$219,478,864
13	UT	\$269,024,382	13	AZ	\$576,781,576	13	CO	\$292,165,173	13	KY	\$128,154,674	13	CA	\$133,974,711
14	MO	\$262,076,450	14	KY	\$537,698,330	14	WA	\$237,861,898	14	IL	\$111,162,528	14	WI	\$128,165,346
15	GA	\$191,736,214	15	PA	\$534,617,013	15	MS	\$227,071,262	15	OH	\$104,784,271	15	OH	\$76,622,822
16	AZ	\$187,922,630	16	DC	\$485,092,022	16	OH	\$219,426,999	16	NJ	\$95,921,089	16	AR	\$21,259,379
17	WA	\$168,802,373	17	NY	\$474,247,622	17	MI	\$214,153,384	17	VA	\$93,749,632	17	AL	\$20,537,594
18	OR	\$154,528,885	18	TN	\$465,711,985	18	HI	\$192,845,571	18	PA	\$91,139,287	18	IA	\$19,871,894
19	CO	\$103,088,676	19	AK	\$412,591,735	19	AZ	\$149,209,818	19	RI	\$86,427,484	19	SD	\$17,479,715
20	RI	\$100,937,825	20	CT	\$317,350,312	20	SC	\$146,279,729	20	IA	\$67,993,114	20	NY	\$14,309,196
21	PA	\$94,862,343	21	NC	\$285,293,798	21	NE	\$142,603,895	21	VT	\$55,707,534	21	NH	\$13,340,590
22	IL	\$93,288,811	22	IN	\$246,852,972	22	PA	\$126,147,516	22	MI	\$54,818,278	22	KS	\$12,050,502
23	NV	\$91,178,427	23	KS	\$243,205,308	23	MO	\$126,108,454	23	AL	\$50,993,524	23	WA	\$10,574,728
24	DC	\$80,378,789	24	IL	\$220,925,705	24	IL	\$107,210,625	24	UT	\$49,276,923	24	CT	\$9,403,694
25	AL	\$73,369,923	25	OK	\$220,476,389	25	AK	\$102,245,599	25	NC	\$37,989,716	25	MD	\$8,326,522
26	MN	\$50,699,324	26	MI	\$201,120,229	26	NY	\$98,531,159	26	WA	\$34,525,095	26	LA	\$7,370,156
27	KY	\$48,363,111	27	NV	\$194,246,348	27	IN	\$57,640,118	27	OK	\$29,335,692	27	ID	\$6,582,316
28	AK	\$38,667,911	28	WA	\$177,722,205	28	NC	\$48,413,593	28	CO	\$24,760,490	28	NJ	\$5,254,886
29	NC	\$35,049,741	29	NM	\$169,991,063	29	DC	\$39,030,503	29	MD	\$23,777,026	29	GA	\$4,315,516
30	TN	\$24,623,057	30	IA	\$154,998,204	30	OR	\$38,264,378	30	AK	\$23,715,845	30	WY	\$4,250,268
31	NM	\$23,920,951	31	NE	\$119,802,502	31	IA	\$33,848,775	31	GA	\$19,650,293	31	WV	\$4,194,306
32	SC	\$22,616,592	32	MO	\$103,885,250	32	NV	\$30,432,809	32	SC	\$13,509,596	32	IN	\$3,983,529
33	MI	\$7,809,634	33	MS	\$103,583,743	33	NH	\$29,654,901	33	SD	\$12,386,016	33	MS	\$3,563,336
34	WV	\$6,753,447	34	UT	\$83,177,964	34	UT	\$28,343,170	34	TN	\$11,842,608	34	KY	\$3,363,805
35	MS	\$6,224,083	35	RI	\$71,356,981	35	GU	\$28,227,740	35	HI	\$11,360,219	35	OR	\$3,326,454
36	CT	\$5,828,358	36	NH	\$68,845,347	36	LA	\$18,109,605	36	MN	\$10,131,514	36	NC	\$1,847,894
37	ID	\$5,754,503	37	LA	\$65,736,404	37	MN	\$17,676,897	37	KS	\$6,233,846	37	MI	\$1,368,665
38	ME	\$4,049,346	38	HI	\$55,296,364	38	NM	\$12,889,667	38	NM	\$5,531,193	38	NM	\$712,581
39	OK	\$3,643,322	39	MT	\$48,934,585	39	WI	\$11,494,700	39	DE	\$5,466,846	39	NV	\$709,975
40	HI	\$3,391,433	40	WI	\$44,312,213	40	TN	\$11,405,616	40	WI	\$2,498,436	40	MT	\$700,340
41	KS	\$2,271,258	41	ID	\$34,303,962	41	RI	\$11,372,913	41	ID	\$1,812,389	41	SC	\$125,865
42	AR	\$2,076,794	42	MN	\$29,505,936	42	ME	\$6,616,032	42	OR	\$1,409,754	42	OK	\$114,902
43	NE	\$1,792,950	43	WV	\$20,728,399	43	KY	\$4,520,868	43	AR	\$1,173,302	43	RI	\$84,604
44	WI	\$1,133,969	44	ME	\$12,412,131	44	MT	\$3,526,109	44	MT	\$1,032,455	44	AK	\$68,150
45	LA	\$1,071,257	45	OR	\$7,950,383	45	AR	\$3,018,210	45	WV	\$828,089	45	NE	\$33,671
46	MT	\$770,185	46	ND	\$5,499,716	46	PR	\$1,949,284	46	ND	\$407,177	46	ME	\$10,678
47	PR	\$747,747	47	DE	\$3,724,748	47	DE	\$1,887,981	47	WY	\$235,017	47	DC	-\$11,673
48	DE	\$443,823	48	VT	\$1,680,837	48	ID	\$1,779,165	48	LA	\$152,860	48	UT	-\$1,346,733
49	GU	\$433,244	49	PR	\$1,679,289	49	ND	\$1,142,212	49	NE	\$2,916			
50	SD	\$350,165	50	AR	\$1,118,856	50	VT	\$419,770						
51	ND	\$301,393	51	GU	\$611,786	51	WV	\$324,943						
52	VT	\$147,463	52	SD	\$496,149	52	SD	\$305,281						
53	AS	\$40,800	53	WY	\$183,412	53	WY	\$247,988						
54	VI	\$29,754	54	VI	\$95,537	54	MP	\$9,555						
			55	N/A	\$42,565	55	N/A	\$5,100						
			56	VI	-\$5,315	56	VI	-\$5,315						

Source: USAspending.gov; DoD and DHS contract actions