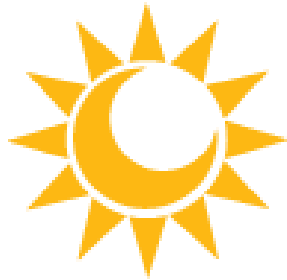


The Economic Impact of Aerospace in South Carolina



SOUTH CAROLINA COUNCIL ON
COMPETITIVENESS

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Taking the Pulse of the South Carolina Aerospace Cluster in 2018



- Is South Carolina's aerospace cluster continuing to grow? What is the current economic impact on the state?
- Where are the primary strengths and weaknesses of the cluster?
- Where is the S.C. aerospace cluster going next? How does S.C. build on existing successes?

Dun & Bradstreet Dataset (D&B)

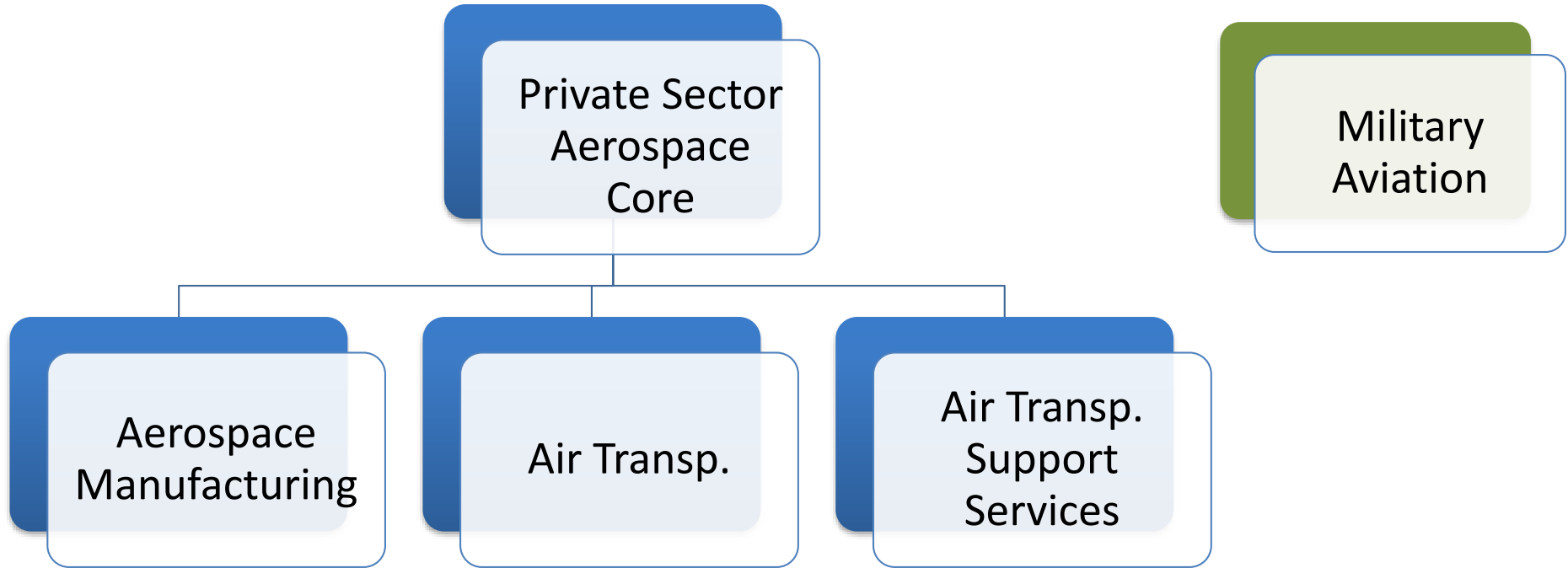
- Firm-level data across South Carolina
- Includes firm names, addresses, various industry codes, employment, sales revenue, headquarters location, etc...
- Data are captured over time: 1990-2017

Strengths and Limitations of D&B

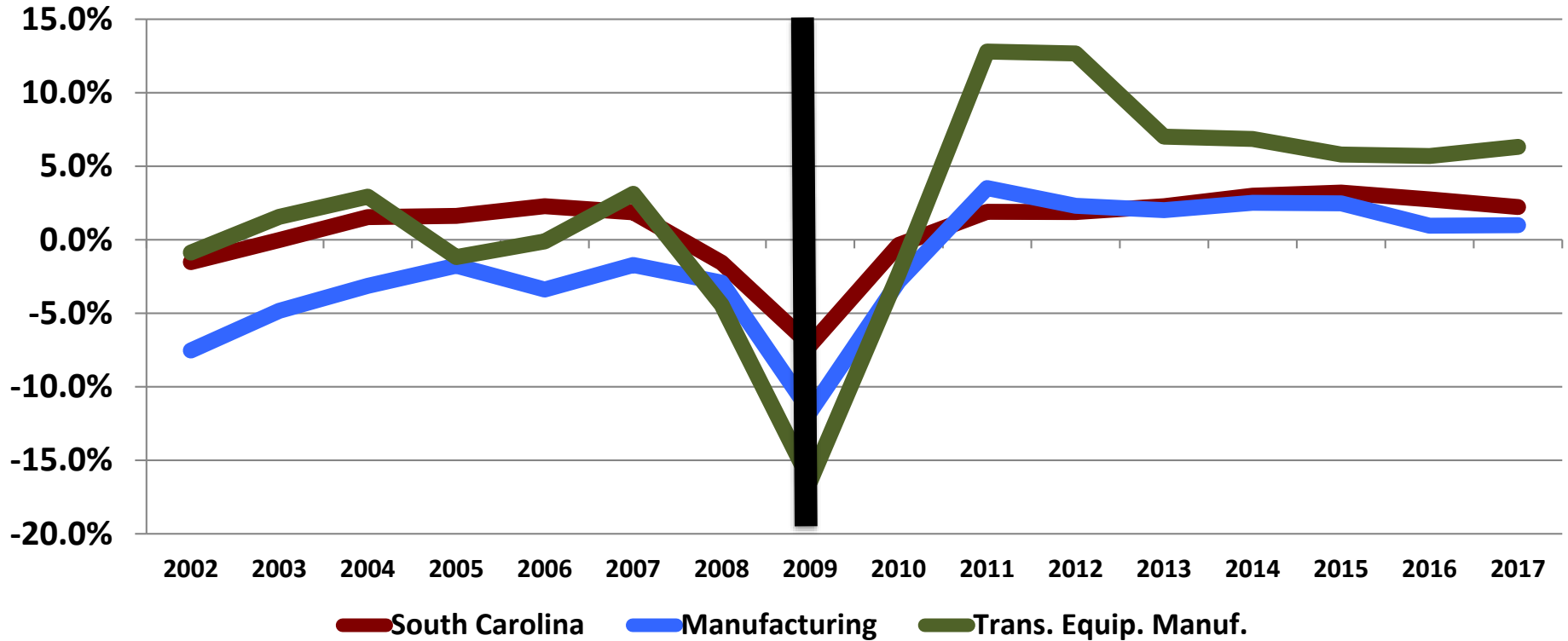
- Excellent source for overall market trends broken down by industry subsector and region
- Firm data is collected via survey *and* imputed through use of economic models
- Percentage of a given firm's aerospace client base is unknown



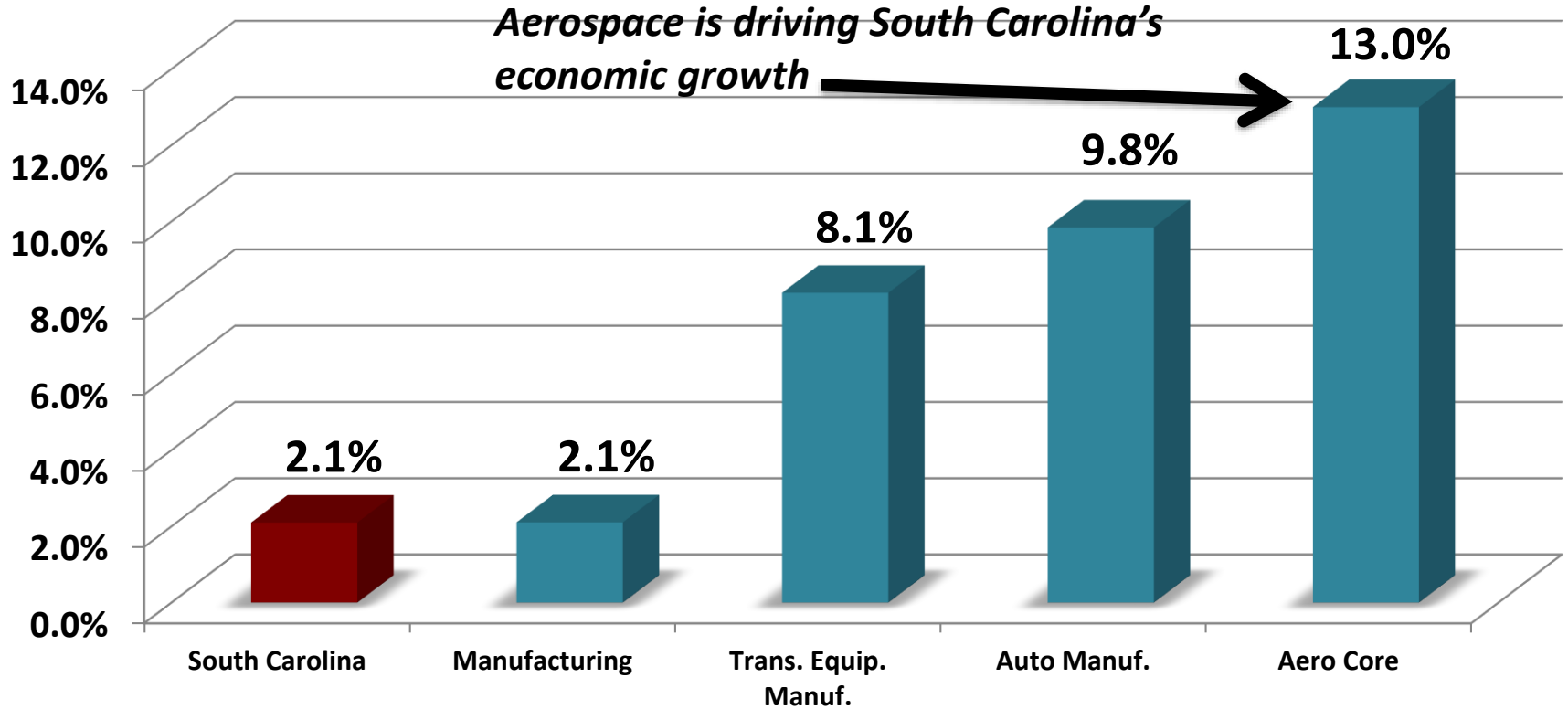
Aerospace Cluster Defined



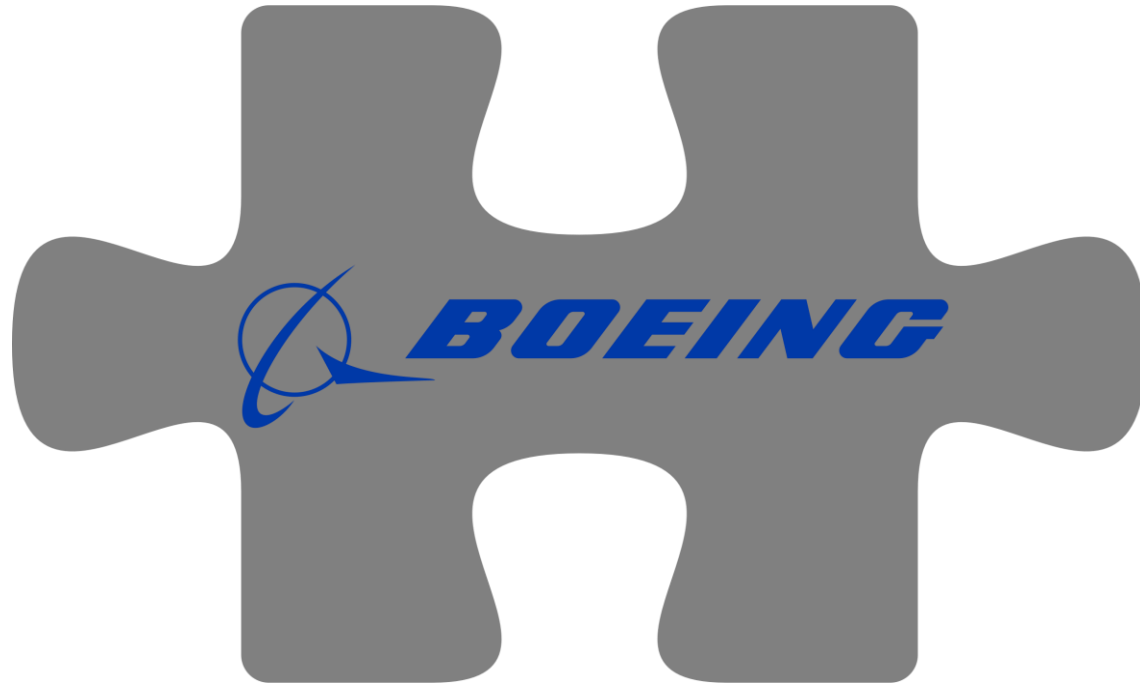
South Carolina Employment Growth



South Carolina Avg. Annual Employment Growth: 2010-2017

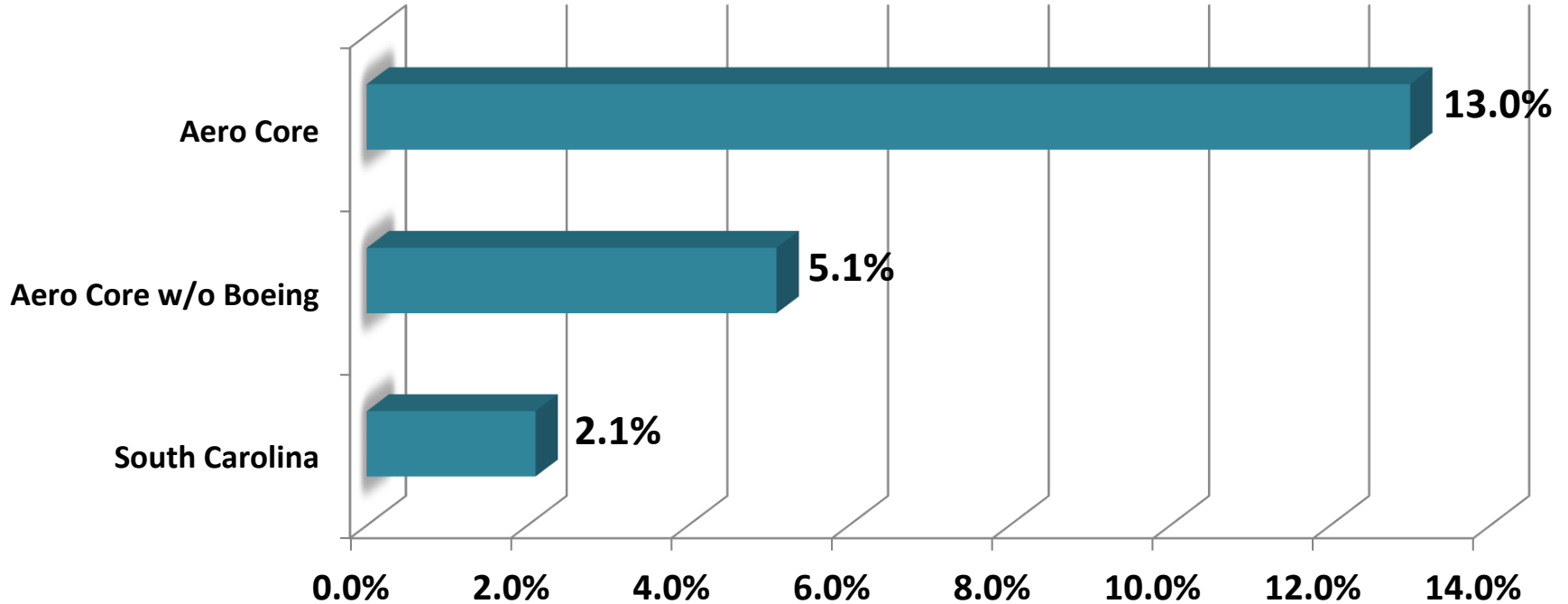


Aerospace growth is more than Boeing



S.C. Employment Growth

Avg. Annual Growth Rates: 2010-2017



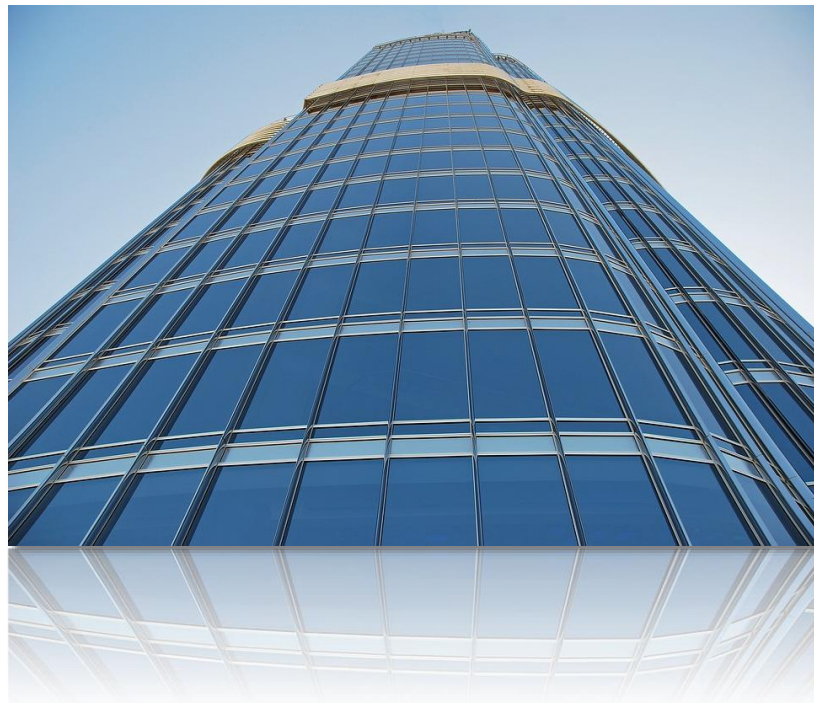
Annual S.C. Employment and Firm Growth Rates

	Aerospace Core Employment	South Carolina Employment	Aerospace Core Firms	South Carolina Firms
2003-2007	+7.7%	+1.7%	+8.2%	+0.5%
2007-2010	+5.7%	-2.4%	+10.8%	-1.8%
2010-2014	+15.7%	+1.9%	+0.1%	+1.5%
2014-2017	+9.4%	+2.4%	+4.4%	+3.0%

2010-2017	+13.0%	+2.1%	+2.0%	+2.2%
2010-2017 w/o Boeing	+5.1%	+2.1%	+1.9%	+2.2%

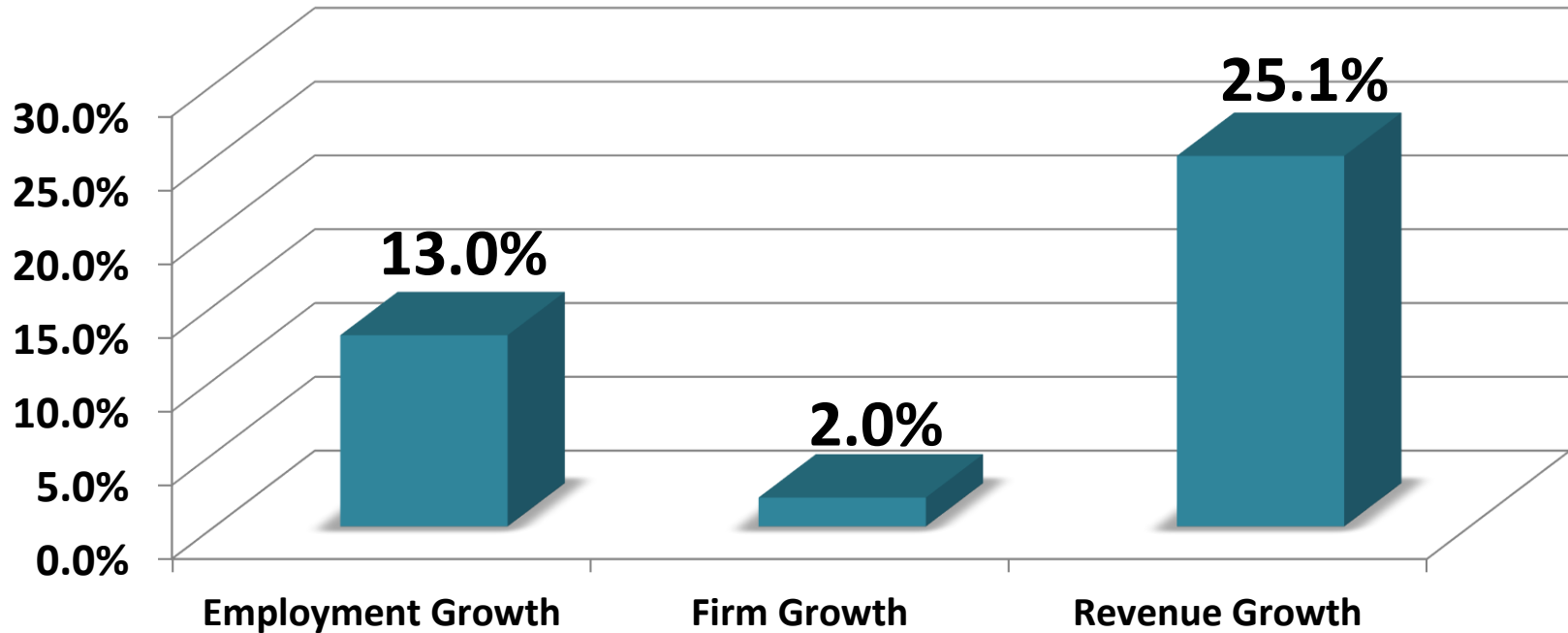
Source: Dun & Bradstreet and U.S. Bureau of Labor Statistics

Firms are Anchoring to
South Carolina



S.C. Aerospace Core Industry Growth

Avg. Annual Growth Rates: 2010-2017



S.C. Aerospace Core Employment and Firm Growth by Firm Size: 2014-2017

Firm Size by Total Employment	% of Total Employment Increase	% of Total Firm Increase	Total Number of Firms (2017)
5 or Less	3.9%	24.4%	254
6-10	1.1%	22.2%	29
11-100	12.7%	37.8%	55
101-500	7.4%	11.1%	12
501+	74.9%	4.4%	5

- *Large firms responsible for most employment growth*
- *Firm growth is not concentrated within any specific group*

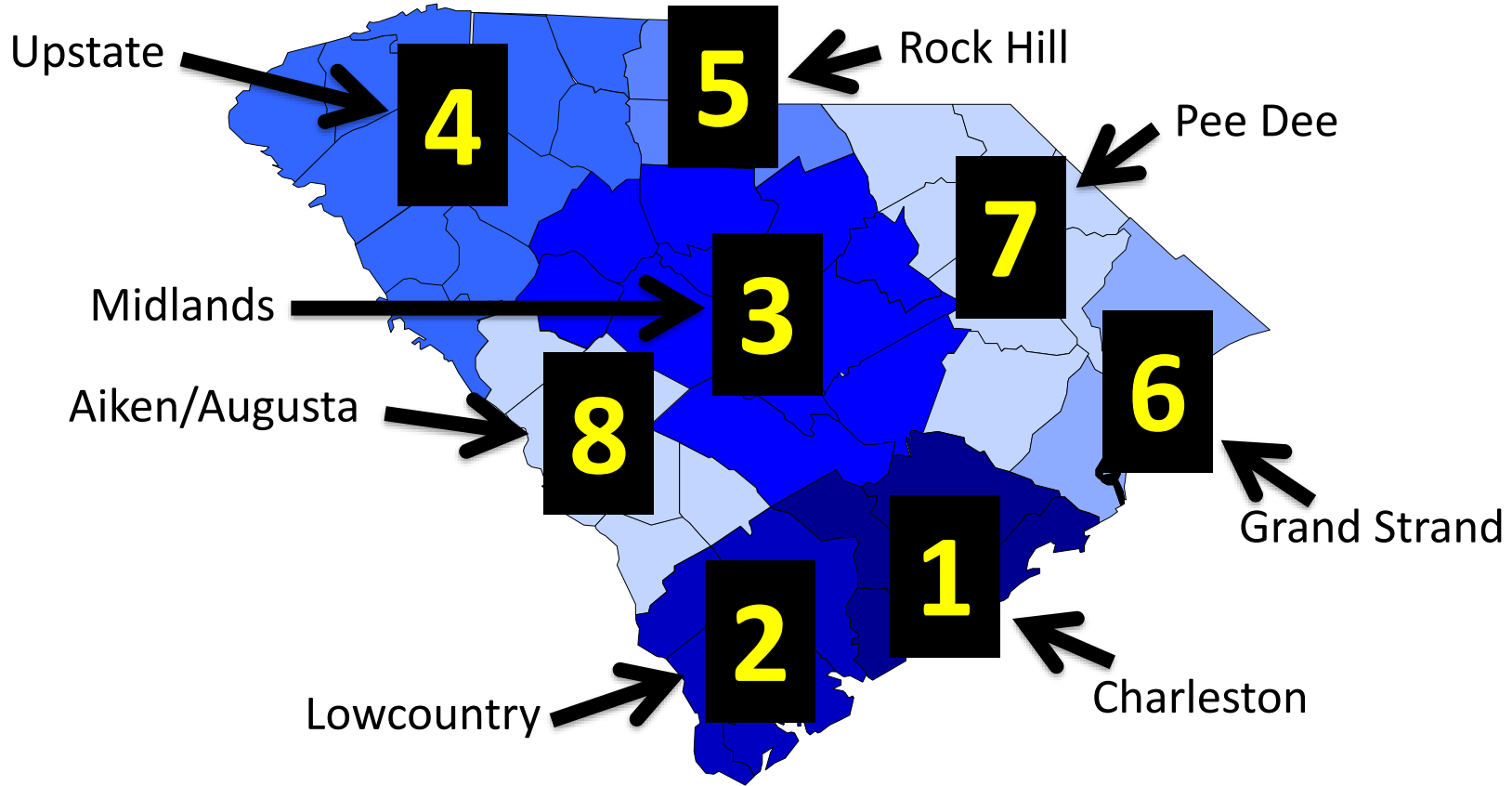
Regional Concentrations

What is a Location Quotient?

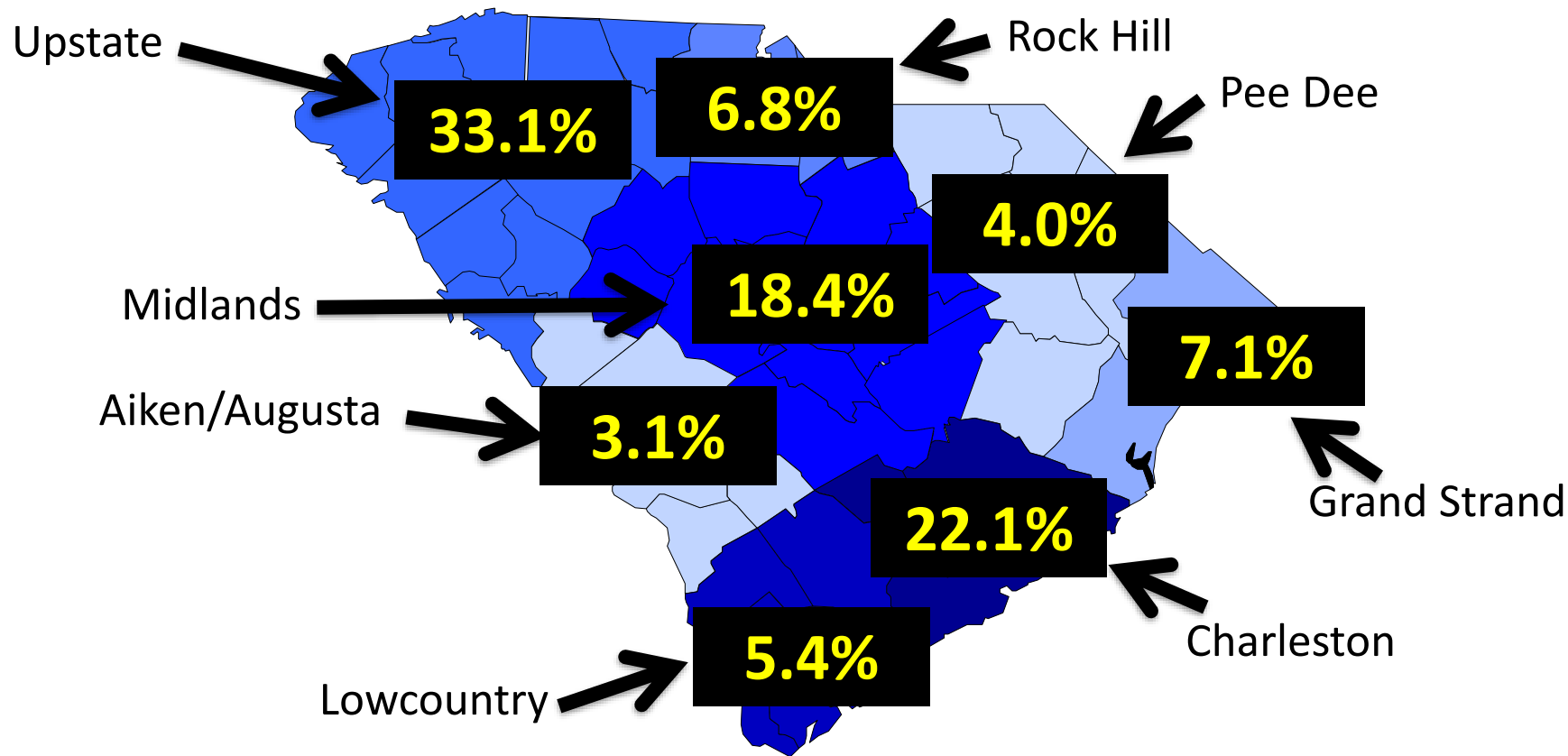
Pct. Of Total Employees Working in Aerospace Core & Military Aviation (Chas.)	7.3%
Pct. of Total Employees Working in Aerospace Core & Military Aviation (S.C.)	2.2%

Charleston Aerospace LQ = 3.36

Employment LQ by Region (Aerospace & Military)



Percentage of Private Sector Firms by Region



The Economic Impact of Aerospace in South Carolina

Economic Impact of the Aerospace Cluster on S.C.

Description	Employment
Aerospace Core	20,421
Shaw Air Force Base	9,585
McEntire Joint National Guard Base	1,742
Joint Base Charleston	20,315
Beaufort Marine Corps Air Station	5,012

Year	Aerospace Core Employment
1990	4,334
1995	3,280
2000	4,149
2005	6,597
2010	8,704
2015	18,068
2016	19,188
2017	20,421

Economic Impact of the Aerospace Cluster on S.C.

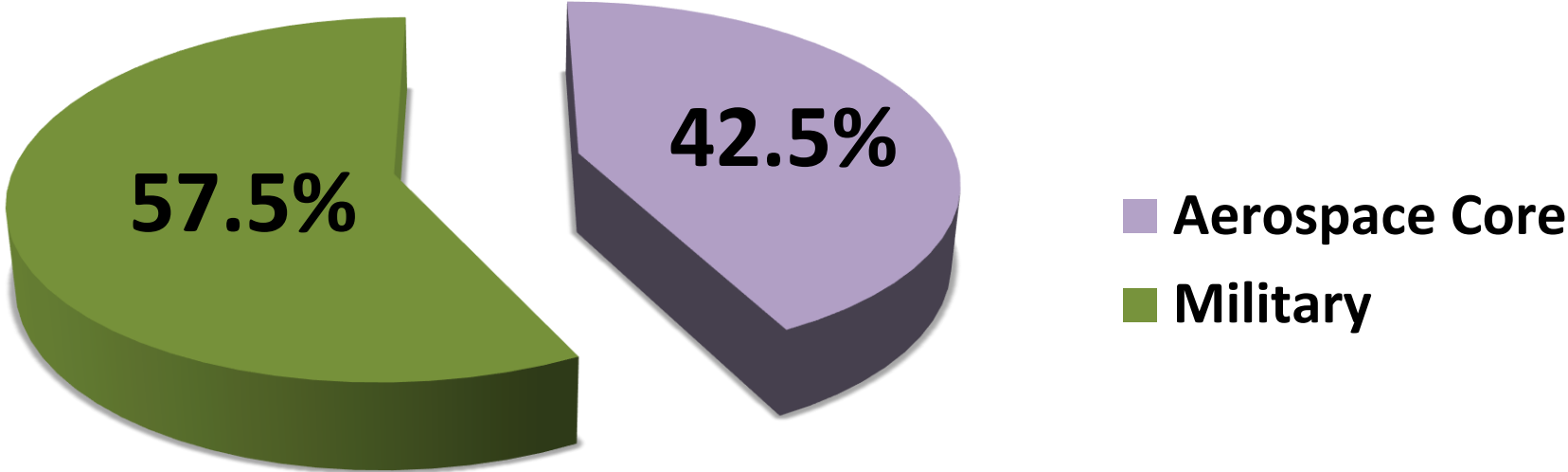
	Economic Output	Employment	Total Employee Compensation
Direct Effect	\$16,210,345,014	55,506	\$6,930,925,862
Multiplier Effect	\$8,586,516,051	73,533	\$3,201,933,919

Total Impact	\$24,796,861,065	129,039	\$10,132,859,781

Note: Estimates include Aerospace Core and Military impacts

Economic Impact of Aerospace Cluster by Sector

Reflects Size of Impact by Total Employment



Economic Impact of the Aerospace Cluster on S.C.

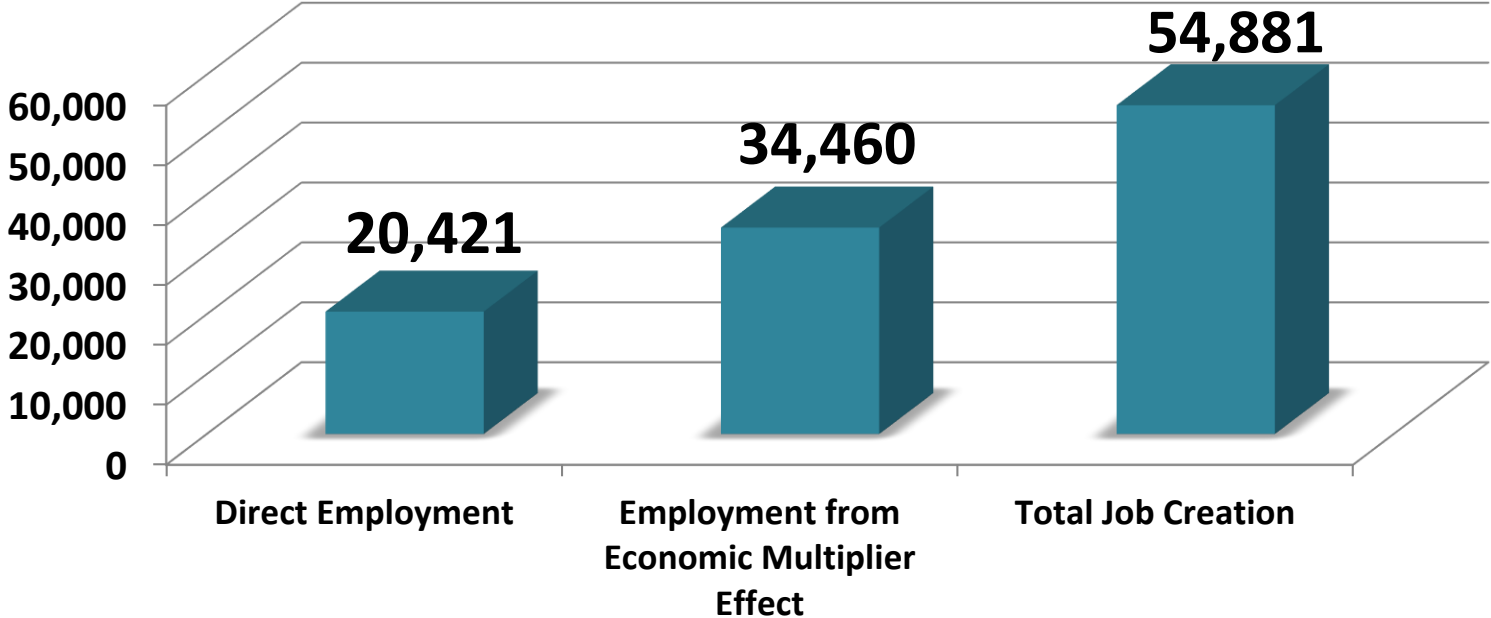
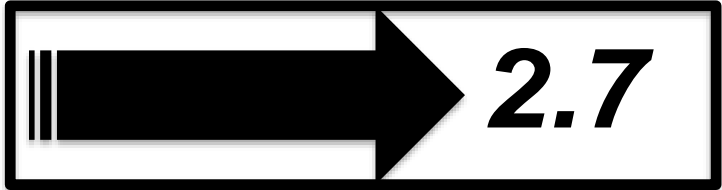
Region	Economic Output	Employment	Total Employee Compensation
Charleston	\$12,797,202,831	75,052	\$5,457,544,908
Midlands	\$4,535,018,368	21,474	\$2,182,865,453
Upstate	\$4,958,012,118	20,820	\$1,397,420,632
Lowcountry	\$1,480,721,794	7,385	\$805,876,177
Rock Hill	\$442,873,936	1,860	\$124,824,458
Myrtle Beach	\$280,956,153	1,179	\$79,187,770
Aiken/Augusta	\$173,437,625	728	\$48,883,567
Pee Dee	\$128,638,239	540	\$36,256,815

Note: Estimates include Aerospace Core and Military impacts

Economic Impact of the Aerospace Cluster on S.C.

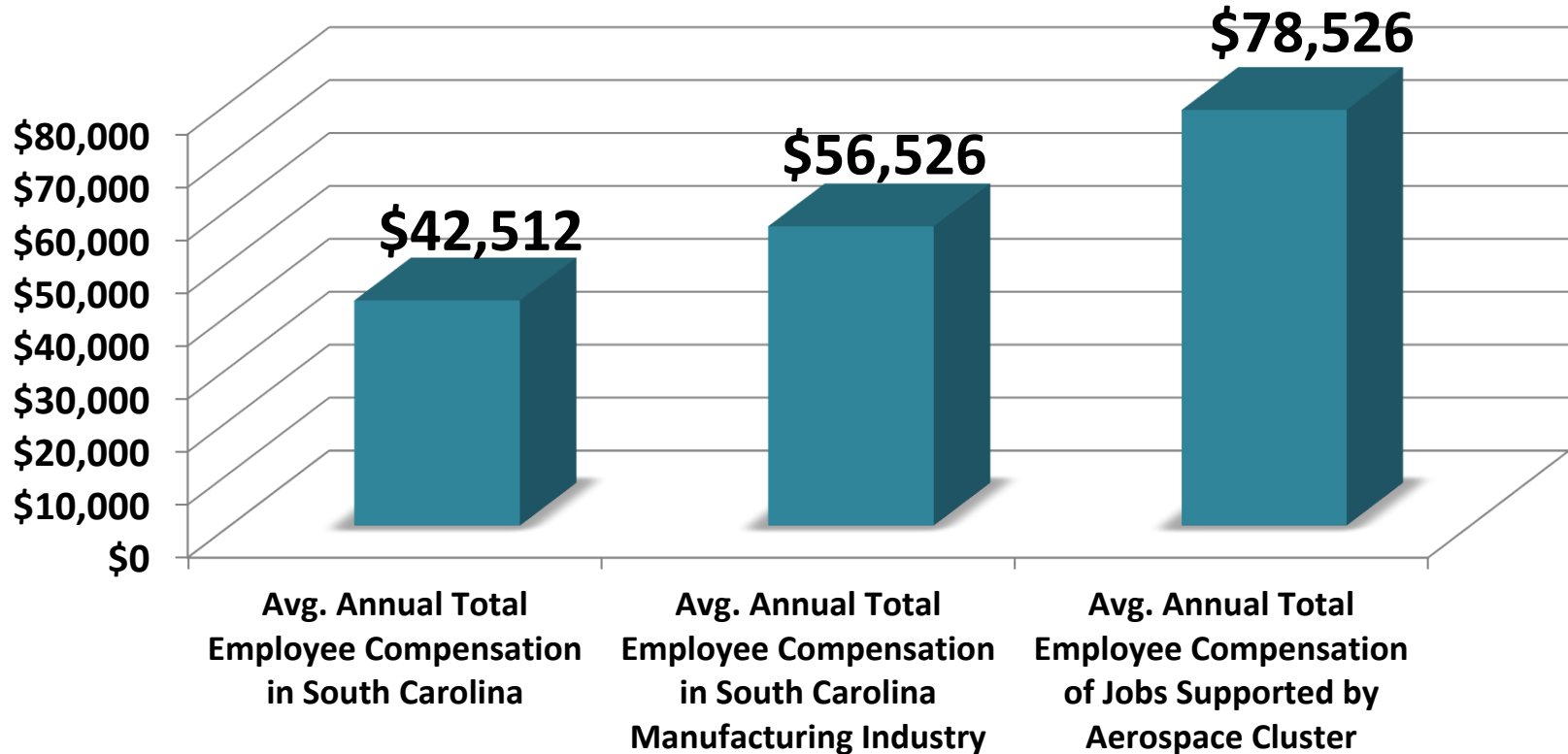
Region	Total Employment	Military Employment	Aerospace Core
Charleston	75,052	50,303 (67.0%)	24,749
Midlands	21,474	16,602 (77.3%)	4,872
Upstate	20,820	N/A	20,820
Lowcountry	7,385	7,253 (98.2%)	132
Rock Hill	1,860	N/A	1,860
Myrtle Beach	1,179	N/A	1,179
Aiken/Augusta	728	N/A	728
Pee Dee	540	N/A	540

The Multiplier Effect



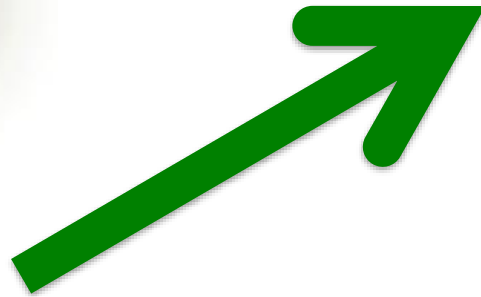
Note: Multiplier calculated based off of Aerospace Core estimates only

Annual Total Employee Compensation Comparisons





Increases in State Tax
Revenue



Increases in Gross State
Product

Tax Revenue Breakdown

Annual Estimated State Tax Revenue Generated from South Carolina's Aerospace Cluster

Total Contribution to South Carolina Gross State Product	\$14,126,449,715
Estimated Increase in Tax Revenue	\$734,575,385

Comparing South Carolina's Aerospace Cluster to the Southeast

Process

- How does our in-state supply chain compare to that of other states?
- In which sectors do any differences emerge? What is the magnitude of these differences?

Aerospace Supplier Concentration Index (SCI)

→ SCI is defined as the relative concentration of a supplier sector within a Southeastern state relative to the average Southeastern state

$$SCI = \frac{SC_{AircraftTireManufMult}}{Southeast_{AircraftTireManufMult}}$$

Selected S.C. Aerospace Supplier Categories

Mid-Level Supplier Categories	High SCI	Medium SCI	Low SCI
Chemical Manufacturing	9	0	2
Machinery Manufacturing	13	1	9
Fabricated Metal Product Manufacturing	10	0	8
Elec. Equip., Appliance, and Component Manuf.	9	2	4
Plastics and Rubber Products Manufacturing	8	0	7
Primary Metal Manufacturing	7	1	6
Computer and Electronic Product Manuf.	3	1	12
Totals	150	39	89



High concentration



Moderate concentration



Low concentration

Next Steps...

- Validate findings through business surveys or other engagement
- Create a strategic plan to strengthen our existing competitive advantages and mitigate areas of weakness

Aerospace Continues to Play a Central Role in the Strength of South Carolina's Economic Expansion



Ingredients for Ongoing Success are Here



A sizable economic footprint



Uniquely high rates of employment growth



An expanding supply chain



Increased multiplier effects

Thank You!