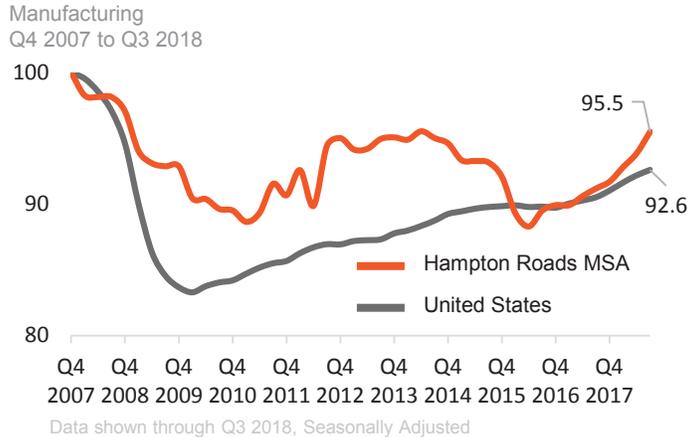


Worldwide, demographic shifts paired with breakthroughs in technology and improved supply chain linkages will continue to transform production systems, impacting the way businesses operate and hire, and the degree to which region's and countries can expand their economies in competitive and sustainable ways. As such, it is of high-priority that policymakers and business leaders develop new approaches and work together in order to build innovative systems that benefit all.

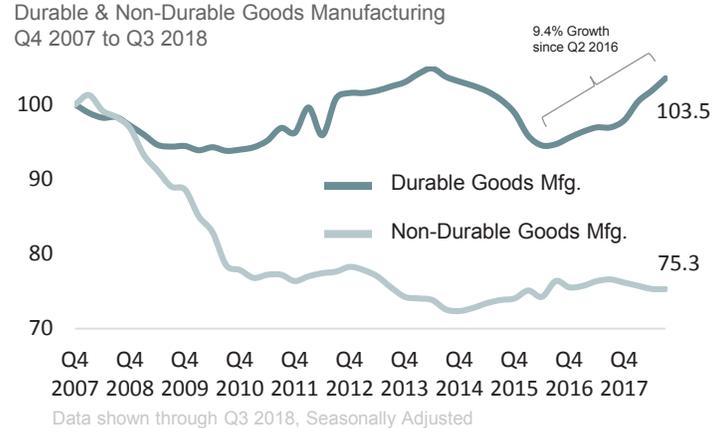
Shown below (left), employment within the manufacturing super sector in Hampton Roads remained buffered through and after the recession when compared to the nation. As of Q3 2018, with an estimated 54,900 employed, manufacturing employment remains 4.5% below its Q4 2007 level. However, recent growth is encouraging, generating 8.2% growth since Q2 2016.

Below (right), manufacturing within Hampton Roads has been broken into two subsectors: durable and non-durable goods manufacturing. As shown, durable goods manufacturing has grown 9.4% since Q2 2016 and is within reach of its Q2 2014 post-recession peak. Additionally, this sector remains 3.5% above its Q4 2007 level. This is in stark contrast to non-durable goods manufacturing, which remains nearly 25% below its Q4 2007 level of employment. **Further insight to method and sectors can be found in Appendix A<sup>1</sup> at the end of this publication.**

### Employment Growth: Hampton Roads & U.S.



### Employment Growth: Hampton Roads



## An Examination of Interior Industries

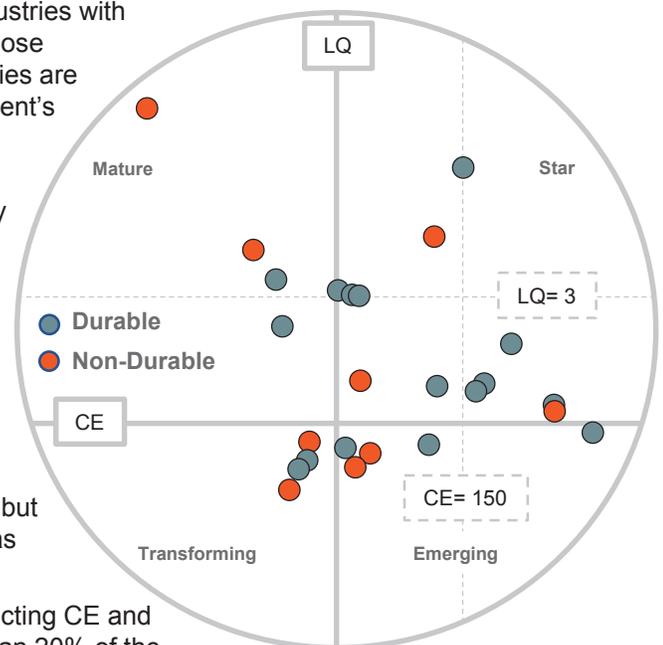
To better understand the growth and composition of the durable and non-durable manufacturing sectors, we examine 6-digit NAICS industries that serve as components of each. **A detailed breakout of individual industries with corresponding variables, classifications, and definitions can be found in Appendix A<sup>2</sup> at the end of this publication.**

Shown right, manufacturing industries are identified as durable or non-durable manufacturing with a grey or orange marker, respectively. To identify industries with competitive critical mass, industries have been filtered to reflect those whose employment base is estimated to be greater than or equal to 200. Industries are organized on the four-quadrant map by analyzing industry Location Quotient's (LQ) in conjunction with an industry's Competitive Effect (CE).

Specialization is identified on the vertical axis and is defined in this instance as hosting an industry employment LQ greater than 1.2. Industry growth or contraction is captured by the CE on the horizontal axis and indicates whether the source of change in employment is regionally specific or if growth from 2013 to 2018 can be attributed to national forces, endogenous and exogenous to the industry.

Located in the upper right quadrant, **75% of Star industries function as durable goods manufacturing.** These industries are at least 20% more concentrated in the region compared to the national average and host positive competitive effects. Additionally, 60% of emerging industries are within durable goods manufacturing, hosting positive competitive effects, but are positioned with LQ's less than 1.2. These will be industries to watch as growth continues to outpace nation trends.

Mature and Transforming industries are those that have realized a contracting CE and hold either an employment concentration higher or lower, respectively, than 20% of the national average.



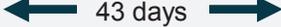
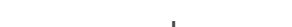
## Capturing Competitive Advantage in Manufacturing

As companies continue to adopt systems for improved productivity, capturing and building regional competitive advantages in other critical areas will continue to grow in importance. Noted by the World Economic Forum in regards to the future of manufacturing, talented human capital will be the most critical resource that will differentiate the prosperity of firms, regions and countries. This talented human capital is characterized as being inclusive of both the quality and availability and have the capacity to innovate and simultaneously improve production efficiency.

## Talent Demand

To better understand demand for talent within regional manufacturing industries, we can examine the types of job titles sought by a sample set of some of the larger durable goods manufacturers within the region of Hampton Roads.

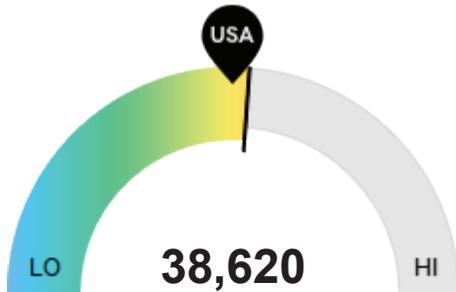
Highlighted below within the sample set of firms, the job titles displayed were actively advertised over Q3 2018. Additionally, the jobs displayed hosted posting intensities higher than the sample average across all occupations, indicating an increased effort to fill the position. In conjunction with intensity, the job titles displayed have realized extended periods of posting duration, indicating the difficulty of hiring for the particular occupation. In effect, the variables of posting intensity and median posting duration have been used to understand both the amount of effort and difficulty realized when filling the identified positions.

 Job Title	 Posting Intensity (effort)	Median Posting Duration (difficulty)
<b>Sample Average (all occupations)</b>	 <b>4:1</b>	 43 days
Manufacturing Engineers	 5:1	34 days
Supply Chain Planners	 5:1	62 days
Facilities Engineers	 5:1	38 days
Software Engineers	 4:1	57 days
Mechanical Assemblers	 8:1	31 days
Supply Chain Managers	 5:1	67 days
Programmers	 8:1	70 days
Research & Development Engineers	 5:1	53 days
Production Managers	 8:1	45 days
Process Engineers	 6:1	61 days

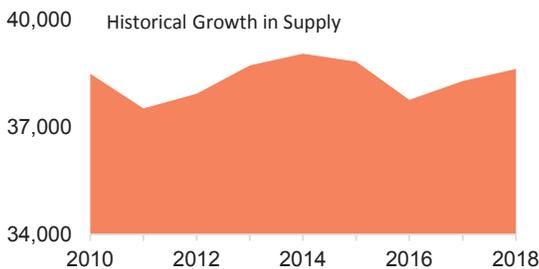
It is important to note that job postings are just one piece of the picture but serve as key components to the overall framework. By evaluating intensity and duration, estimating workforce supply, and understanding skills gaps and surpluses that exist within the market, industry professionals have an opportunity to understand how the regional labor market may be impacting the competitiveness of businesses. This understanding can serve as the catalyst to strengthen partnerships between regional entities. Correspondingly, valuable opportunities exist to create, nurture, and employ flexible and impactful strategies to encourage an ever-evolving stream of high-quality talent to existing and incoming companies across all industries.

Highlighted below, supply, demand, and compensation of the production related workforce shines light on a broader set of conditions for manufacturing occupations within the region.

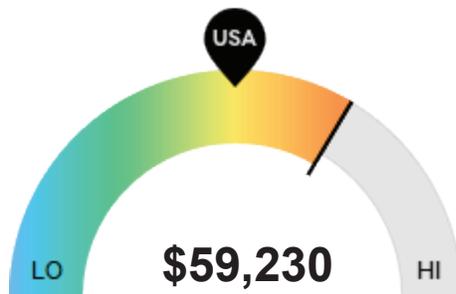
## Aggressive Hiring Competition Over a Moderate Supply of Regional Talent



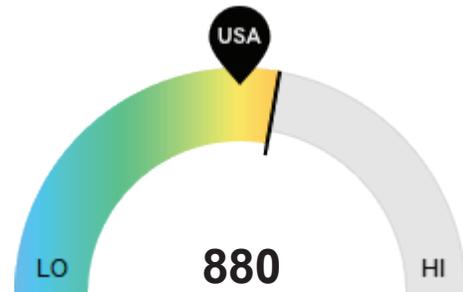
**+35% Growth**  
(2010 - 2018)



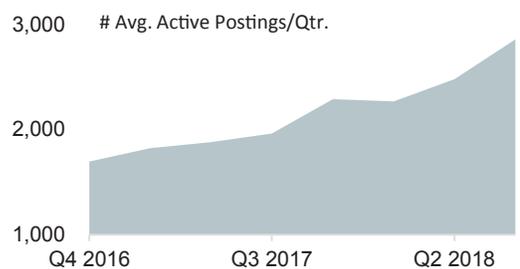
Regional supply of workers within the market of Hampton Roads remains relatively unchanged since the region hit trough in 2010, growing only .35%. Recognizing the strain in supply, the higher than average cost for talent may continue to rise, as employers attempt to attract additional workers with higher wages.



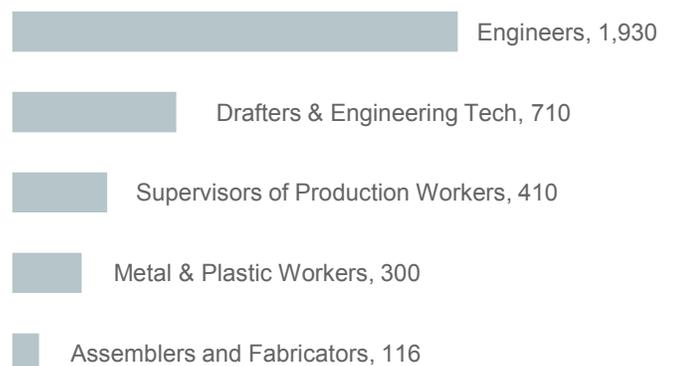
The cost for production related talent is high in Hampton Roads compared to the nation. The national median salary for the selected mix of occupations is \$48,320. This suggests a premium cost for firms who currently operate within the region or who might be considering Hampton Roads as a location of choice for investment.



**+68% Growth**  
(Q4 2016 - Q3 2018)



Shown above, demand for the same mix of production occupations within Hampton Roads have experienced significant increases, realizing 68% growth since Q4 2016. Of this demand, 76% represent engineering or engineering technician related occupations. This demand complements both the earlier discussed ramp up in manufacturing employment, as well as demand for job titles displayed on the previous page. The chart below highlights the manufacturing occupations with corresponding number of unique postings over Q3 2018.



## Appendix A

### Indexing Economic Data

<sup>1</sup>Identifying the relative strength and performance of an industry is a necessary step in assessing the current and historical business environment within a market of interest. Often times, labor and economic data is more instructive when comparisons are generated by indexing data. Indexing economic data gives the analyst an opportunity to level set the starting point by generating a normalized beginning. In effect, the variables in question must be set equal to each other and then examined over time for differences. Indexing employment data is instructive as it allows the observer to quickly determine rates of growth by looking at the chart's vertical axis.

### Durable and Non-Durable Goods

<sup>2</sup>**Durable goods** are goods that don't wear out quickly and last over a long period. Examples of durable goods manufacturing industries would include shipbuilding, automotive and appliances manufacturing. **Non-durable goods** on the other hand are goods produced for the intent of consumption and are goods that generally have a lifespan of fewer than three years. Examples would include food and beverage and paper products manufacturing. It should be noted that because of the significantly higher employment LQ's, the industries of Shipbuilding and Repair (NAICS: 336611): durable - upper left quadrant; Power-Driven Hand Tool (NAICS: 333991): durable – upper left quadrant; and Photographic film (NAICS: 325992): non-durable upper right quadrant, are not displayed in the chart on page one. If charted, visual context of specialization around the origin would become compressed to a degree of incomprehension.

### Interior Industries: Durable and Non-durable Goods Manufacturing

NAICS	Sector	Category	Industry Description	Competitive Effect	2018 Location Quotient
325992	Non-Durable	Star	Photographic Film, Paper, Plate, and Chemical Mfg.	223	17.28
333612	Durable	Star	Speed Changer, Industrial High-Speed Drive, and Gear Mfg.	148	5.25
311710	Non-Durable	Star	Seafood Product Preparation and Packaging	114	4.17
327213	Durable	Star	Glass Container Manufacturing	2	3.34
336510	Durable	Star	Railroad Rolling Stock Manufacturing	18	3.27
333912	Durable	Star	Air and Gas Compressor Manufacturing	26	3.25
334416	Durable	Star	Capacitor, Resistor, Coil, Transformer, and Other Inductor Mfg.	204	2.51
311340	Non-Durable	Star	Nonchocolate Confectionery Manufacturing	28	1.93
339950	Durable	Star	Sign Manufacturing	172	1.89
336310	Durable	Star	Motor Vehicle Gasoline Engine and Engine Parts Mfg.	117	1.85
333924	Durable	Star	Industrial Truck, Tractor, Trailer, and Stacker Machinery Mfg.	163	1.77
335314	Durable	Star	Relay and Industrial Control Manufacturing	254	1.55
322121	Non-Durable	Star	Paper (except Newsprint) Mills	254	1.46
336360	Durable	Emerging	Motor Vehicle Seating and Interior Trim Manufacturing	299	1.12
332813	Durable	Emerging	Electroplating, Plating, Polishing, Anodizing, and Coloring	108	0.94
332322	Durable	Emerging	Sheet Metal Work Manufacturing	11	0.89
312111	Non-Durable	Emerging	Soft Drink Manufacturing	40	0.80
323111	Non-Durable	Emerging	Commercial Printing (except Screen and Books)	22	0.59
336611	Durable	Mature	Ship Building and Repairing	(721)	50.95
333991	Durable	Mature	Power-Driven Handtool Manufacturing	(244)	38.22
311920	Non-Durable	Mature	Coffee and Tea Manufacturing	(221)	6.17
311911	Non-Durable	Mature	Roasted Nuts and Peanut Butter Manufacturing	(97)	3.97
332431	Durable	Mature	Metal Can Manufacturing	(70)	3.50
333914	Durable	Mature	Measuring, Dispensing, and Other Pumping Equipment Mfg.	(63)	2.78
311612	Non-Durable	Transforming	Meat Processed from Carcasses	(31)	0.98
336320	Durable	Transforming	Motor Vehicle Electrical and Electronic Equipment Mfg.	(34)	0.70
332312	Durable	Transforming	Fabricated Structural Metal Manufacturing	(44)	0.56
326199	Non-Durable	Transforming	All Other Plastics Product Manufacturing	(55)	0.24

**Star: LQ > 1.2,  
(+) Competitive effect**

**Emerging: LQ < 1.2,  
(+) Competitive effect**

**Mature: LQ > 1.2,  
(-) Competitive effect**

**Transforming: LQ < 1.2,  
(-) Competitive effect**

Sources:

1. Bureau of Labor Statistics, Q3 2018, seasonally adjusted
2. Economic Modeling Specialists International, QCEW Employment 2018.4 Dataset
3. World Economic Forum

All information prepared by the Hampton Roads Economic Development Alliance - Department of Business Intelligence on behalf of the Hampton Roads Workforce Council.

The Hampton Roads Workforce Council Labor Market Digest - Fall 2018. Unless otherwise noted, data cover the Virginia Beach-Norfolk-Newport News Metropolitan Statistical Area ("MSA") for the three months ending September 2018 (Third Quarter 2018). The Hampton Roads Workforce Council oversees workforce development programs on behalf of the Hampton Roads Workforce Development Board. The Board is responsible for developing workforce policy and administering workforce development initiatives in Chesapeake, Franklin, Isle of Wight, Norfolk, Portsmouth, Southampton, Suffolk, and Virginia Beach. The Hampton Roads Workforce Council assists businesses in accessing qualified workers and job seekers in finding suitable job openings and bolstering their earning power through training.

Please see [www.vcwhamptonroads.org](http://www.vcwhamptonroads.org) for additional information. Questions or comments can be addressed to Steve Cook, Vice President of Workforce Innovation, Hampton Roads Workforce Council at [scook@vcwhamptonroads.org](mailto:scook@vcwhamptonroads.org).

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