

RIDING THE TECH JOBS WAVE: HOW DOES THE SOUTHEAST COMPARE?

STEM FIELD: ECONOMIC IMPACT

According to the U.S. Bureau of Labor Statistics' May 2016 publication, "The high-tech industry, what is it and why it matters to our economic future," the industry **supports approximately 17 million workers** or approximately 12% of total employment. Its overall impact is even greater, accounting for nearly 23% of output.

High-tech jobs are largely defined as those employed in Science, Technology, Engineering, and Mathematics (STEM), which are roles that can span sectors, ranging from newer subcategories such as "fintech" (finance-related technology) or more established niches such as biotechnology. The extent to which cities are actively investing in and attracting high tech employers is one indirect indicator of their market fundamentals going forward, impacting other industries such as multifamily investment.

17 Million
JOBS SUPPORTED
BY HIGH-TECH

23%
ECONOMIC OUTPUT
ATTRIBUTED TO HIGH-TECH

4.9
HIGH-TECH LOCAL
JOBS MULTIPLIER

NO SIGN OF SLOWING

Because technology is rapidly changing, room for job growth in this field is vast. Deloitte reported in 2016 that the pace of **technological change will not decelerate** with growing demand for big data analytics, cognitive computing, cloud computing, automation, additive manufacturing (industrial 3-D printing), artificial intelligence, and cybersecurity. In 2016, U.S. News & World Report ranked Computer Systems Analyst as #3 on its list of best jobs due to the job's future growth, current demand, median salary, quality of life, and other factors.

Further, labor market economists such as Enrico Moretti assert that **high tech industries have the largest "local multiplier effect,"** meaning that the high tech industry creates the most additional local jobs in the nontradable sector for each added tech job. Per Moretti, each manufacturing job is estimated to create 1.6 local nontradable jobs, compared to high tech industries whose local multiplier can be as high as 4.9 for each added job.

DECENTRALIZATION OF NODES

While the tech field still maintains a concentration in select cities, the industry's impact has begun to deepen in non-traditional tech markets. Forbes' rankings for the most innovative technology hubs in the U.S. include the usual suspects: San Jose, CA; Boulder, CO; San Francisco, CA; Corvallis, OR; and, Seattle, WA. These cities scored highly for their patent issuance rates, venture capital flow, and startup synergy.

However, markets such as Atlanta have been **aggressively cultivating innovation hubs** of their own. Atlanta's Midtown neighborhood—situated east of the Georgia Institute of Technology and north of Downtown—is quickly becoming a powerful technology node with Tech Square as its nucleus. This cluster of eight city blocks has become the epicenter of Atlanta's technological whirlwind that is bolstered by highly-concentrated tech talent and city tax incentives. Within the past two years, companies such as KPMG, GE Digital, Home Depot, Honeywell International, Keysight Technologies, NCR Corporation, Anthem Inc., Southern Company, Coca-Cola, AT&T, and Kaiser Permanente opened (or have announced that they will open) IT hubs within a quarter-mile radius.

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SOUTHEAST MSAS: HOW DO THEY COMPARE?

Two Southeast cities ranked in Fast Company's "The Next Top 10 Cities for Tech Jobs" list - **Raleigh, NC** (#2) and **Nashville, TN** (#9) - based upon their rate and volume of tech industry job listings. These cities can attribute their STEM growth primarily due to two factors: 1) they offer "big-city resources" such as a highly-educated talent pool fed by local universities with strong STEM programs; and, 2) they have lower costs of living than established technology hubs.

Regarding the remaining Southeast MSAs, this article explores this question using the North American Industry Classification System's (NAICS) "5415 Computer Systems Design and Related Services" industry subcategory as a proxy for technology sector employment.

The following tables include MSAs in the Southeast and their wages and employment in NAICS 5415 as of first quarter 2016, which is the most recent data available. The MSAs are color-coded to demonstrate their location quotient, which is a number that indicates the MSA's technology wages and employment relative to the national average.

MSAs with higher-than-average employment or wages (location quotient above 1.00) are highlighted in yellow and these include: **Atlanta, Charleston, Crestview-Fort Walton Beach-Destin, Huntsville, Mobile, and Raleigh**. Of these, **Huntsville** far outpaces the nation in terms of computer technology employment and wages due to the presence of NASA's Marshall Space Flight Center, which recently expanded including a \$39 million Space Launch System (SLS) research facility.

Sources:

- "The high-tech industry, what is it and why it matters to our economic future" - <http://www.bls.gov/opub/btn/volume-5/the-high-tech-industry-what-is-it-and-why-it-matters-to-our-economic-future.htm>
- "U.S. News & World Report Announces the 2016 Best Jobs" - <http://www.usnews.com/info/blogs/press-room/2016/01/26/us-news-announces-the-2016-best-jobs>
- Deloitte's "2016 Technology Industry Outlook" - <http://www2.deloitte.com/us/en/pages/technology-media-and-telecommunications/articles/technology-industry-outlook.html>
- "Local Multipliers" - <http://eml.berkeley.edu/~moretti/multipliers.pdf>
- Forbes' "The 10 Most Innovative Tech Hubs In The U.S." - <http://www.forbes.com/sites/kathryndill/2015/02/12/the-10-most-innovative-tech-hubs-in-the-u-s/#165008971386>
- Fast Company's "The Next Top 10 Cities for Tech Jobs" - <https://www.fastcompany.com/3048391/the-future-of-work/the-next-top-10-cities-for-tech-jobs>
- U.S. BLS Quarterly Census of Employment and Wages - http://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables

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COMPUTER TECHNOLOGY EMPLOYMENT AND WAGES BY SOUTHEAST MSA

MSA	Average Q1 2016 Employment	Average Weekly Wage	March 2016 Employment Location Quotient	Total Quarterly Wages Location Quotient
U.S. TOTAL	1,936,295	\$2,111	1.00	1.00
Albany, GA	90	\$1,266	0.14	0.13
Alexandria, LA MSA	67	\$987	0.10	0.07
Anniston-Oxford-Jacksonville, AL	67	\$1,220	0.14	0.13
Asheville, NC	508	\$1,121	0.25	0.19
Athens-Clarke County, GA	216	\$994	0.25	0.15
Atlanta-Sandy Springs-Roswell, GA	34,740	\$1,982	1.43	1.20
Auburn-Opelika, AL	321	\$989	0.61	0.44
Augusta-Richmond County, GA-SC	638	\$1,260	0.30	0.22
Baton Rouge, LA	1,303	\$1,442	0.33	0.25
Brunswick, GA	67	\$867	0.16	0.09
Burlington, NC	86	\$1,667	0.12	0.14
Charleston-North Charleston, SC	3,846	\$1,868	1.26	1.34
Chattanooga, TN-GA	535	\$1,540	0.22	0.20
Clarksville, TN-KY	379	\$1,424	0.44	0.46
Crestview-Fort Walton Beach-Destin, FL	1,212	\$1,406	1.22	1.12
Daphne-Fairhope-Foley, AL	131	\$1,044	0.18	0.15
Decatur, AL	153	\$1,346	0.32	0.26
Dothan, AL	104	\$895	0.19	0.12
Fayetteville, NC	711	\$1,289	0.59	0.49
Florence, SC	163	\$831	0.20	0.11
Florence-Muscle Shoals, AL	74	\$878	0.13	0.08
Gainesville, GA	164	\$1,341	0.20	0.15
Goldsboro, NC	118	\$949	0.29	0.21
Greensboro-High Point, NC	1,351	\$1,421	0.39	0.33
Greenville, NC	80	\$941	0.10	0.06
Greenville-Anderson-Mauldin, SC	1,281	\$1,479	0.33	0.30
Hammond, LA	331	\$1,113	0.86	0.73
Hickory-Lenoir-Morganton, NC	535	\$783	0.39	0.21
Hinesville, GA	10	\$2,378	0.05	0.08
Houma-Thibodaux, LA	121	\$1,088	0.10	0.06

Source: Cushman & Wakefield Research, US Bureau of Labor Statistics

Note: Q1 2016 data is the most recent available. NAICS' "5415 Computer systems design and related services" industry classification is used as a proxy for the technology sector. This table excludes rows with suppressed employment and wages. "Location Quotient" refers to the 's employment or wages relative to the U.S., which is 1.00. Any value below 1.00 is lower than that of the nation and any value greater than 1.00 is higher than that of the nation. MSAs included are those in the following states: AL, FL (Panhandle), GA, TN, NC, SC, KY, MS, and LA.

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U.S. TOTAL	1,936,295	\$2,111	1.00	1.00
Huntsville, AL	9,428	\$1,812	3.20	2.75
Jacksonville, NC	144	\$1,258	0.22	0.24
Knoxville, TN	1,937	\$1,406	0.38	0.30
Lake Charles, LA	75	\$775	0.05	0.02
Lexington-Fayette, KY	2,365	\$1,361	0.66	0.54
Louisville-Jefferson County, KY-IN	6,317	\$1,422	0.74	0.55
Macon, GA	296	\$1,413	0.22	0.20
Memphis, TN-MS-AR	2,456	\$1,467	0.30	0.23
Mobile, AL	2,752	\$1,159	1.18	0.82
Montgomery, AL	1,691	\$1,537	0.75	0.72
Morristown, TN	26	\$1,750	0.04	0.05
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	384	\$1,381	0.19	0.21
Nashville-Davidson--Murfreesboro--Franklin, TN	8,770	\$1,700	0.72	0.60
New Orleans-Metairie, LA	3,270	\$1,504	0.43	0.33
North Port-Sarasota-Bradenton, FL	1,791	\$2,429	0.45	0.70
Pensacola-Ferry Pass-Brent, FL	1,271	\$1,204	0.56	0.43
Raleigh, NC	15,213	\$1,790	1.91	1.66
Rocky Mount, NC	48	\$1,107	0.06	0.05
Rome, GA	102	\$983	0.19	0.12
Savannah, GA	384	\$1,180	0.17	0.12
Shreveport-Bossier City, LA	348	\$1,237	0.14	0.12
Spartanburg, SC	258	\$1,283	0.14	0.10
Sumter, SC	203	\$1,555	0.40	0.47
Tallahassee, FL	1,968	\$1,373	0.86	0.77
Tuscaloosa, AL	218	\$1,406	0.16	0.14
Valdosta, GA	152	\$1,010	0.21	0.18
Warner Robins, GA	662	\$1,246	0.69	0.51
Wilmington, NC	547	\$1,280	0.33	0.27
Winston-Salem, NC	1,102	\$1,752	0.31	0.30

Source: Cushman & Wakefield Research, US Bureau of Labor Statistics

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