



Agribusiness

Research + Technology

In Greater Memphis, Tennessee

Industry Sector Overview



GREATER MEMPHIS CHAMBER

CAPITAL OF THE DELTA

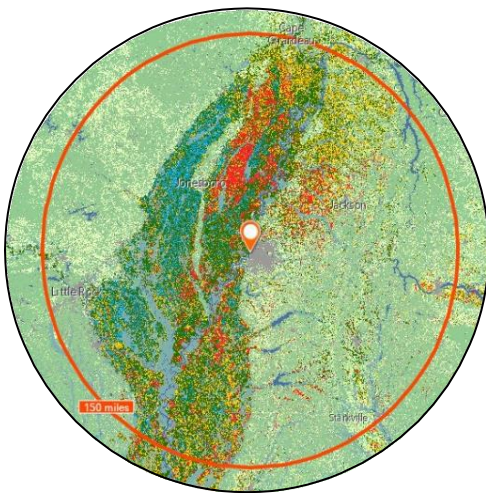
Memphis has long been considered the unofficial capital of the 13-million-acre Mississippi Delta which boasts some of the country's richest soils and one of the purest and most plentiful water supplies in the world. With agriculture dominating the economy for 100-miles in every direction, Memphis is the hub of agricultural for the region.

TAP INTO THE RESOURCES

Sustainable surface and groundwater, unmatched logistics and transportation networks and access to abundant farmland with experienced growers have made Memphis ground zero for a new era of agriculture. Fueled by farm-to-table food delivery trends and the need to improve farming efficiencies while enhancing yields, Memphis is a hotbed for innovative companies driving the future of food.

Diversity of Agricultural Production

150 miles from Downtown Memphis



FACT: Memphis is located within a 150-mile radius of every major crop grown in the United States, including corn, soybeans, rice, and wheat.

FACT: Access to over 52 varieties of crops and 19 million acres of productive growing space within 150-miles of the downtown Memphis Market.

FACT: Shelby County is home to 399 farms with a total of 75,404 acres. The market value of the products sold reached \$27.44 million averaging just over \$68,000 per farm.

MAJOR EMPLOYERS

Corporate Headquarters & Regional Managing Offices

Employer Name	HQ Office Type	Regional Employment
FedEx Corp.	World Headquarters	30,000
Medtronic	Branch	4,000
ServiceMaster Clean	Divisional Headquarters	2,600
International Paper Company	Main Headquarters	2,400
Smith & Nephew, Inc.	Branch	2,300
AutoZone Inc.	Main Headquarters	2,000
ABB/ Thomas & Betts	Main Headquarters	1,100
*Indigo Ag	Main Headquarters	700
*Waypoint Analytical	Main Headquarters	200
*Louis Dreyfus Company	Branch	200

Source: Costar Tenant Analysis 2019

*Indicated Agricultural Business and Technology firm

ANNOUNCEMENTS AND EXPANSIONS

In 2019, Boston-based Agtech innovator **Indigo Ag** made headlines when they announced their plans to expand their corporate presence in the downtown Memphis market with a \$6.6 million investment and a ramp-up of 700 new jobs over the next three-years. Indigo raised \$535 million in Series F preferred financing which will be used to bolster core businesses.

This absorption into the Downtown Memphis location will house key departments, including Indigo Marketplace, Indigo Carbon, Indigo Transport, Digital Agronomy, and Indigo Microbials. Evidence of market impact, Indigo Marketplace which is a platform that directly connects farmers with grain buyers has done \$1 billion in transactions since its inception in late 2018.

From the Company

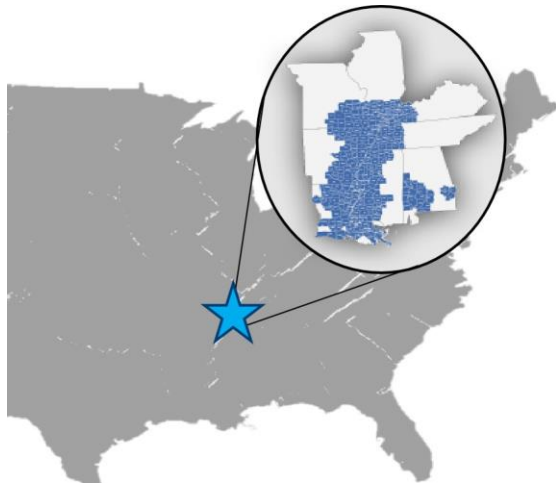
"We chose to establish and grow Indigo's headquarters for North American Commercial Operations in Memphis because of the proximity to our customers and Indigo Research Partners, the pro-business climate, access to world class talent, and the collaborative relationship between state and city government leaders. We are committed to Memphis, a hub for North American agriculture, and we are excited to continue to grow in such an innovative and forward-focused city." – **Indigo Ag CEO David Perry**



SPOTLIGHT: INNOVATION CLUSTER AWARD

Mid-South Delta Region Designated as Regional Innovation Cluster Focused on AgTech and Value-Chain Business

In 2019, the AgLaunch Initiative (AgLaunch) was named one of seven new Small Business Administration's Region Innovation Clusters, a program built to strengthen opportunities for small business within a region focused on a specific industry vertical. AgLaunch will be leading the Mid-South Delta Agriculture Innovation Cluster ("Delta Ag Cluster"), the first SBA cluster to



be focused on agtech and value-chain companies that is centered around a major farming region.

AgLaunch will be leading region activities with key partners and stakeholders including cohort-based programming, business acceleration, commercialization assistance, mentorship, access to capital, market development, and other business services.

This geographically large cluster provides ample production acreage and resources such as university experiment stations, processing and storage infrastructure, and transportation capabilities needed to incubate, commercialize, and support agtech innovations and companies.

"This is a great opportunity for our region to further elevate the vision of making the Mid-South the best place in the United States to create the farms of the future and supply the products that consumers are demanding," said Pete Nelson, Executive Director of AgLaunch. "The partnership with SBA and USDA will allow us to further expand the Farm-Centric Innovation Model to more farmers, incubate more businesses, and ensure that there is adequate capital and technical support to grow the amazing food and agriculture opportunities."

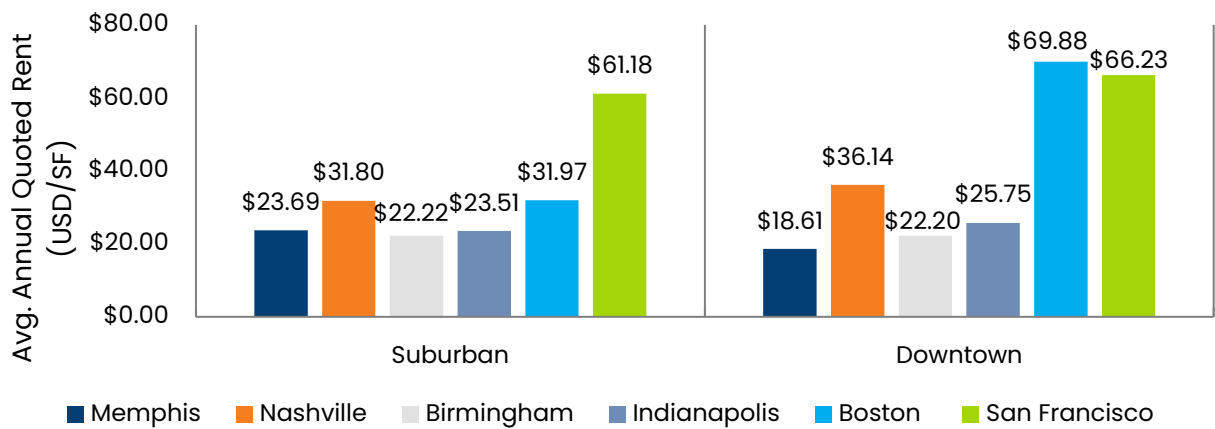
-AgLaunch Executive Director **Pete Nelson**



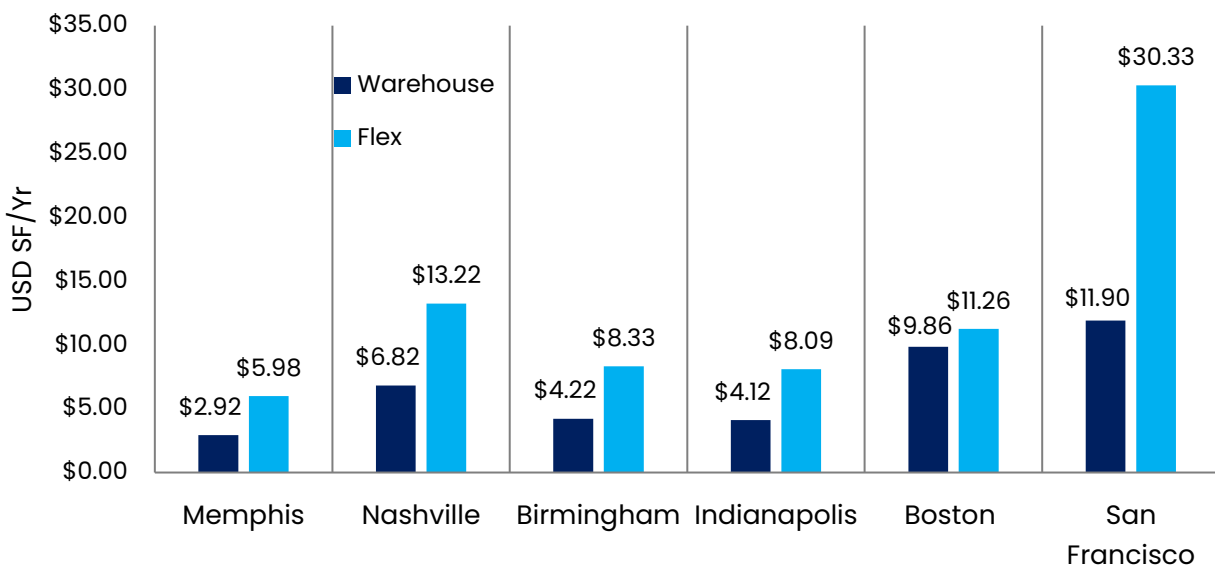
REAL ESTATE

The Greater Memphis region hosts competitive prices per square foot for any real estate requirement. Providing context, the chart below compares the average rent per square foot within Class A suburban and downtown office space as well as commercial and industrial space, comparatively, within major metropolitan areas nationwide.

Office Space



Commercial and Industrial Space



WORKFORCE

Comparatively, the Greater Memphis region holds an extremely competitive workforce regarding training, quality, and presence of workers. Shown on the pages that follow, the critical mass and growth of both major industry sectors and related occupations have been highlighted to provide deeper insight into regional presence.

Industry

With over 90,00 people employed, Professional and Business Services within the Memphis MSA maintains a significant regional presence, capturing 15% of regional employment. Shown below, several sub-industries that comprise Professional and Business Services hold a notable footprint within the region and have experienced a period of substantial growth with 5.09% from 2015–2020. Currently, with a critical mass over 31,000 employees in 2020, jobs within these industries are forecasted to grown an additional 2.14% from 2020–2025.

The table below highlights each for the defined 4-digit NAICS industry's current level of employment, the historical and forecasted five-year level of employment, as well as growth scenarios for the previous and forecasted five-year period.

Occupational Description	2015 Jobs	2020 Jobs	2025 Jobs	%Δ 2015– 2020	%Δ 2020– 2025
Accounting, Tax Preparation, and Payroll Services	2,369	1,917	1,554	-19.06%	-18.93%
Architectural, Engineering, and Related Services	6,050	3,138	2,611	-48.14%	-16.80%
Computer Systems Design and Related Services	2,482	2,659	2,779	7.14%	4.52%
Management, Scientific, and Technical Services	3,694	6,094	6,735	64.97%	10.52%
Scientific Research and Development Services	366	712	829	94.59%	16.40%
Advertising, Public Relations, and Related Services	1,515	1,445	1,463	-4.60%	1.25%
Other Professional, Scientific, and Technical Services	1,856	2,096	2,232	12.93%	6.46%
Management of Companies and Enterprises	6,542	9,053	9,896	38.38%	9.31%
Office Administrative Services	1,524	904	514	-40.65%	-43.20%
Facilities Support Services	948	807	619	-14.90%	-23.25%
Business Support Services	2,987	3,051	3,326	2.13%	9.02%
Regional Total	30,333	31,876	32,558	5.09%	2.14%

Source: Economic Modeling Specialists International (EMSI)

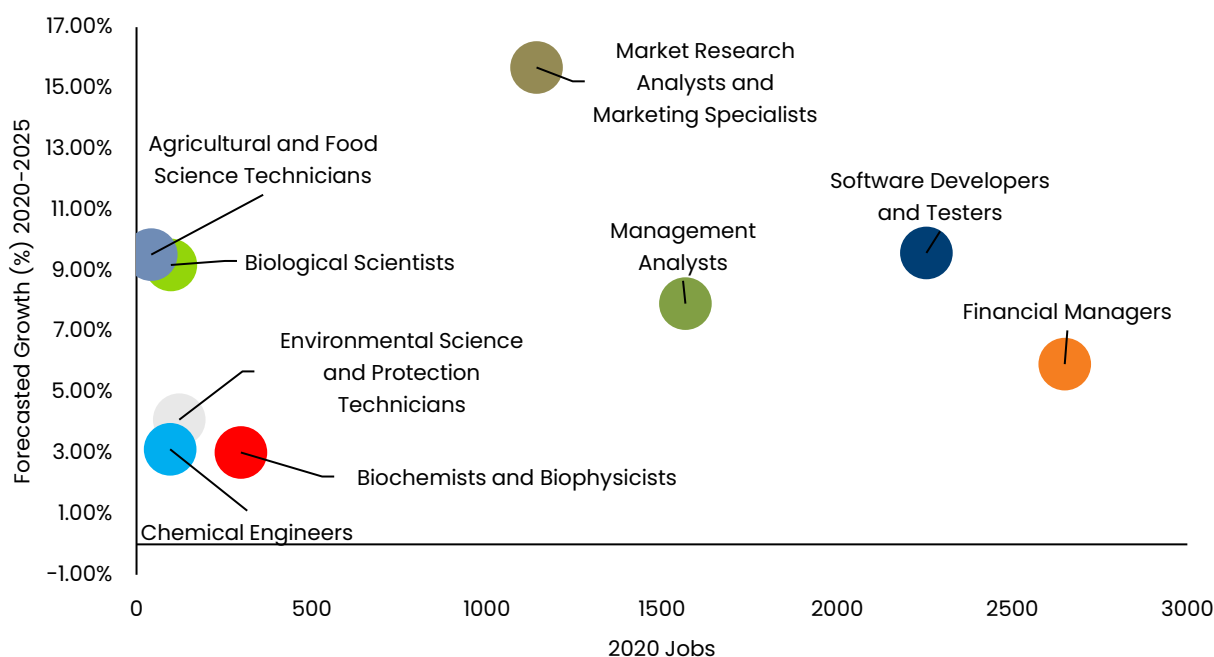
OCCUPATIONS

Regionally, the mix of occupations that supply a corporate and professional operation hold a significant critical mass within the Memphis regional market. Shown below, several of the most common occupations within Management of Companies and Enterprises employ over 54,000 regional residents. Occupations that could be applicable for an Agribusiness operation currently employ 5,526 in 2020 and are forecasted to expand 4.16% by 2025.

Occupational Description	2020 Jobs	2025 Jobs	%Δ 2020-2025	2020 Median Annual Earnings
Agribusiness Occupations				
Computer Systems Analysts	1447	1448	0.07%	\$80,042.48
Software Developers and Testers	2255	2471	9.58%	\$82,442.72
Environmental Engineers	184	176	-4.35%	\$75,957.26
Biological Scientists, All Other	98	107	9.18%	\$71,242.07
Biochemists and Biophysicists	298	307	3.02%	\$91,808.50
Biological Technicians	811	808	-0.37%	\$50,553.77
Environmental Science and Protection Technicians	122	127	4.10%	\$45,240.48
Chemical Engineers	96	99	3.13%	\$113,944.40
Environmental Engineering Technicians	116	110	-5.17%	\$36,742.57
Agricultural and Food Science Technicians	42	46	9.52%	\$40,926.07
Soil and Plant Scientists	57	57	0.00%	\$67,812.10
Regional Total	5,526	5,756	4.16%	
Corporate Office Occupations				
Office Clerks, General	11,107	10,773	-3.01%	\$32,347.59
Customer Service Representatives	11,925	11,615	-2.60%	\$34,658.38
Supervisors of Office and Admin. Support Workers	6,998	6,829	-2.41%	\$53,369.98
Bookkeeping, Accounting, and Auditing Clerks	6,338	6,036	-4.76%	\$40,886.15
Accountants and Auditors	2,681	2,735	2.01%	\$65,959.69
Business Operations Specialists	4,924	5,016	1.87%	\$59,077.88
Financial Managers	2,650	2,807	5.92%	\$104,566.84
Human Resources Specialists	2,480	2,488	0.32%	\$57,764.45
Computer User Support Specialists	1,488	1,520	2.15%	\$46,876.81
Market Research Analysts and Marketing Specialists	1,142	1,321	15.67%	\$56,742.43
Management Analysts	1,567	1,691	7.91%	\$77,239.48
Bill and Account Collectors	744	717	-3.63%	\$36,550.19
Regional Total	54,044	53,548	-0.92%	

While it is instructive to understand regional presence of appropriate occupations, additional insight can be found by identifying which occupations are projected to realize the fastest growth over the next five years. Paired together, 7 (30%) of the 23 occupations above are projected to expand by over 4% from 2020 to 2025, while 14 (61%) are expected to see positive growth over the same period. High yield professional office occupations maintain the strongest regional presence with agribusiness occupations showing an increasing presence and modest growth.

Occupational Presence and Projected Growth



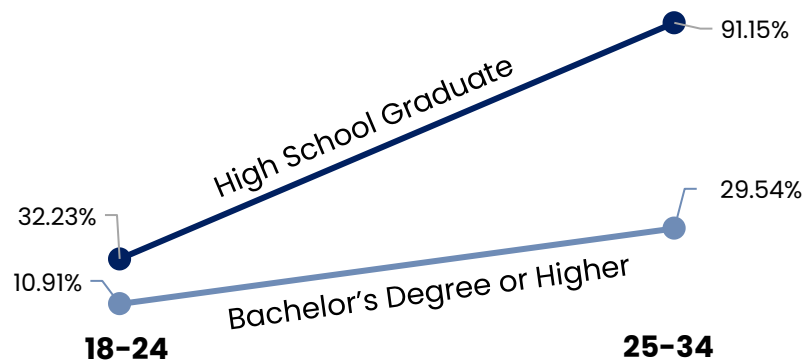
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Management Analysts	1,567	1,691	7.91%
Regional Total	8,270	8,976	8.54%

EDUCATION

Young professionals hold a significant footprint within the Memphis regional population. In fact, per the most recent metro area population estimates, there are over 312,000 residents between the ages of 18-34.

To gain an understanding of the college graduate labor market and the young and talented professional population within the Memphis MSA, one can look at two age range cohorts derived from the U.S. Census.

The chart below highlights the population residing within the Memphis MSA who fall within the age ranges of 18-24 and 25-34 along, additionally respective college level educational attainment has been added for additional insight.



More specifically as it relates to graduates from regional higher educational institutions, the Memphis MSA graduated 14,356 in 2019.

UNIQUE TALENT PIPELINE

Related to Agribusiness, the Memphis region is near 39 colleges and universities offering life science coursework and 24 institutions with agricultural focused coursework. With the opportunities that exist in this industry sector, the Greater Memphis region is a magnet for this renewable pool of talent. Mississippi State College of Agriculture and Life Science is a top ten research program for agricultural expenditures. Named the 15th best agricultural college in the country, Mississippi State's Agricultural programs graduate 63% of its students annually. This educational asset, along with several others within 150-miles, produce a work-ready talent pool from which an employer can recruit.

ACCESS TO TOP REGIONAL TALENT

Program Graduates by Educational Institution

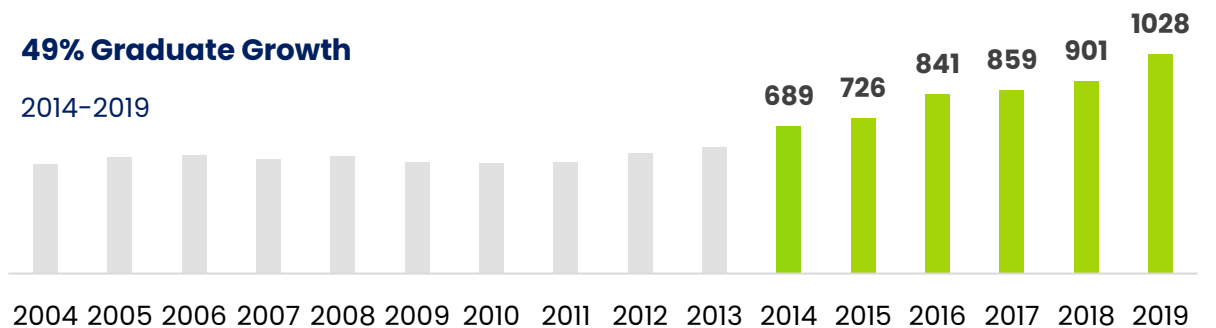
150-Mile Radius

800 Graduates Annually

5-year annual average

49% Graduate Growth

2014-2019



Programs include: Agriculture, Agriculture Business Management & Operations, Animal Sciences, Plant Sciences, Applied Horticulture, Food Science and Technology, Natural Resource Conservation and Research, Agricultural Production, Agricultural Mechanization

EDUCATION SPOTLIGHT: University of Memphis

New Research Cluster Focusing on Agriculture and Food Technologies

Leveraging expertise in core biological, chemical, and environmental science research alongside expertise in big data, artificial intelligence, and engineering, the University of Memphis will seed interdisciplinary research that will contribute new knowledge and solutions to agriculture and food industry challenges.

SUCCESS REQUIRES INNOVATION

(Research) FEDEX INSTITUTE OF TECHNOLOGY

The FedEx Institute of Technology is an advanced technology and research organization that functions as a catalyst for interdisciplinary research and innovation in emerging technologies by supporting cross-campus research innovation clusters. These clusters focus on areas such as intelligence systems, drones, cyber security testing, biologicistic, autonomous vehicles, robotics, smart biomaterials, additive manufacturing, and precision medicine.

The Institute is also home to the University's intellectual property and patent repository, which is the focal point of technology transfer and licensing operations. The Institute supports regional community efforts to increase both the size and technical sophistication of the regional technology workforce.

(Development) AGRICENTER INTERNATIONAL

1,000 Acres 600 in research	10,000 Students educated in STEM	1.3 Million visitors annually	\$524 Million economic impact
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Agricenter International is a leader in agricultural field crop research. Through its work with agribusiness, university systems, and government and non-government organizations, Agricenter provides a professional forum for the unbiased development, evaluation, demonstration, education, and marketing of the latest and most advanced agricultural technologies and products.

(Innovation) THE SEAM

The Seam is a leading provider of innovative agritech software and commodity trading solutions for agribusinesses around the world. Located in Memphis Tennessee, The Seam is a leading provider of trading and technology solutions enabling agribusinesses to operate profitably and efficiently throughout a sustainable global supply chain.

Launching a cloud-based commodity management system for the peanut industry in 2016. The Seam's technology provides the insights farmers need to quickly adjust practices in real-time to increase efficiency and value, thereby saving time and money.

The Memphis regional market hosts the foundation to be the **epicenter of agricultural technology** with a strong innovation pipeline and the country's strongest farm infrastructure.