



**Economic Impact Study
Spartanburg Community College's
Center for Business and Entrepreneurial Development**

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Executive Summary

Spartanburg Community College, as established in its mission and vision, “is a key partner in advancing the Upstate’s economy” and is “a catalyst for economic development through innovation, collaboration and excellence in educational programs and services.” In 2005, the College purchased a vacant distribution facility in the western part of the County to expand its course and program offerings, as well as develop a state-of-the-art center to attract new and expanding business to the area. In partnership with Spartanburg County Council, Spartanburg Area Chamber of Commerce, the Economic Futures Group, the Department of Employment and Workforce, readySC, SBDC, SCORE, SERN and other organizations and agencies, SCC’s Center for Business and Entrepreneurial Development (The Center) has become an active partner in workforce development and economic growth. The Center serves four major project types including soft landings, small business incubation, workforce employment services and special projects. The Soft Landings program supports foreign and domestic companies looking to relocate existing or begin new operations in Spartanburg County. The Small Business Incubator assists new businesses in the early start-up phase or existing businesses that are re-tooling or reorganizing for greater success. Our partner, SBDC, over the past nine years has counseled a total of 743 clients with 57 new businesses started resulting in 281 jobs created and 104 jobs retained. During that same period, SCORE, another valued partner of the CBED, served 451 clients in the Upstate with 290 jobs created in 226 new companies. Workforce Employment Services provides temporary office, intake and training space to assist qualifying companies with employment tasks including job fairs, on-site application and interview processes, pre-employment training and post-employment training of job-specific skills. The Center is also available to assist established business and industry partners with special projects that may include, but are not limited to, beta testing a new product line or manufacturing process, training existing employees on new processes, or providing warehouse space for incoming or over-run inventory and equipment. Over the last nine years, The Center has served more than sixty-one domestic and international companies through one or more of the project types above.

Advanced manufacturing and assembly is a basic industry in the upstate area and providing a facility that supports this industry offers a greater economic impact by generating new income and tax revenue for the County as well as increasing employee earnings. The Center provides assistance to companies and entrepreneurs to launch, build or reorganize successful companies by providing assistance in the form of flexible space for administrative and operational activities to include offices, conference rooms, reference library, training facilities, and space for assembly and light manufacturing operations, along with access to a wide range of support services. At the present

time, eleven companies are clients of The Center.

Economic Impact of The Center

In June 2009 an Economic Impact Study was developed using the Input-Output Model, developed by Economic Modeling Specialists, Inc. (EMSI) to show the economic impact of The Center from November 2007 to June 2009. This study revealed a net positive creation of 1,621 jobs generating total wage earnings of \$58.7 million. A second study was developed for the period of July 2009 to September 2012. This study revealed a net positive creation of 2,282 jobs generating total wage earnings of \$140.8 million. A third study was developed for the period of October 2012 to June 2014. This study revealed a net positive creation of 6,649 jobs generating total wage earnings of \$439.2 million. A fourth study was developed for the period from July 1, 2014 to June 30, 2015. This study revealed a net positive creation of 4,304 jobs generating total wage earnings of \$292.4 million. The present study covers the period from July 1, 2015 to June 30, 2016. This study revealed a net positive creation of 5,133 jobs generating total wage earnings of \$366.7 million. In total, over the last nine years The Center has supported the development of 19,989 jobs generating total wage earnings of \$1.3 Billion dollars. These results have had a significant positive effect on income tax and sales tax revenue generation for the state of South Carolina.

The following is an in-depth look at the impact of SCC's Center for Business and Entrepreneurial Development on the economy of Spartanburg County. When assessing economic impact, it is crucial not only to look at the initial impact of capital investment and jobs created by the companies served by The Center but also the direct, indirect and induced impact these businesses have on the economy of Spartanburg County. Review of this impact is assessed in this study through use of EMSI's Input-Output model. This study looks at the current economic impact of The Center and includes estimates of state revenues through sales and income tax based on earnings change. An explanation of the methodology is included on page 9.

During the period of the most recent study, 2015-2016, several companies either utilized workforce services at The Center or used the facility as a soft landings, or incubator to develop, expand or reorganize their business or to support special projects. Table 1 depicts the number of jobs lost in Spartanburg County due to closing, downsizing or relocation of operations during the study period. However, Table 2 shows the number of jobs created by companies supported by The Center, which

alone, in the last year, totaled 3,576 jobs in Spartanburg County, significantly more than the number of jobs lost during the same period. Note: each table provides the North American Industry Classification System (NAICS) code identifying the industry in which the job activity occurred.

Table 1: Initial Jobs Lost during period July 1, 2015-June 30, 2016 Source: South Carolina Appalachian Council of Governments		
Industry	NAICS Code	Jobs Lost
United Health Group	524210	85
Mohawk Industries	314110	150
Total		235

Table 2: Initial Jobs Created via The Center, July 1, 2015-June 30, 2016		
Name	NAICS Code	Jobs Created
Brose	336360	64
Ritrama	322220	150
Agracel	236220	3
Sitel	561422	618
Benore Logistics	493190	12
MAU	336111	2654
MOR PPM, Inc.	236210	75
Total		3576

Below, **Table 3** reflects the overall, aggregate effect for Spartanburg County from the initial job increases and loss activity on direct, indirect and induced jobs as defined below.

	INITIAL	DIRECT	INDIRECT	INDUCED	TOTAL
	Aggregate Positive Effect on Jobs Created				
	3576	968	178	715	5437
Multiplier	1.3	0.270	0.049	0.199	n/a
	Aggregate Negative Effect on Jobs Lost				
	-235	-40	-5	-24	-304
Multiplier	1.27	0.170	0.021	0.102	n/a
	Aggregate Net Effect on Jobs				
	3341	928	173	691	5133
Note: Multipliers used above were defined via EMSI's Input-Output Model.					

Table 4 reflects the impact on employee earnings given the aggregate job increases and losses in the previous table.

	INITIAL	DIRECT	INDIRECT	INDUCED	TOTAL
	Aggregate Effect on Earnings due to Net Increase in Jobs				
	\$283,672,402	\$61,247,062	\$9,289,845	\$27,984,330	\$382,193,640
Multiplier	0.74	0.160	0.024	0.073	n/a
	Aggregate Effect on Earnings due to Net Jobs Lost				
	-\$12,198,847	-\$2,079,792	-\$250,536	-\$921,929	-\$15,451,103
Multiplier	0.789	0.134	0.016	0.059	n/a
	Aggregate Net Effect on Jobs				
	\$ 271,473,555	\$ 59,167,270	\$ 9,039,309	\$ 27,062,401	\$366,742,537
Note: Multipliers used above were defined via EMSI's Input-Output Model.					

Initial – These numbers represent the initial change in jobs, and the associated average earnings, and does not include any ripple effect. In this report, the net initial effect is a gain of 3,341 jobs with \$ 271,473,555 in earnings.

Direct – These numbers represent the initial change in jobs of the supply chain of the given industry, along with the associated average earnings. In this report, the net direct effect is a gain of 928 jobs with \$59,167,270 in earnings.

Indirect – These numbers represent a subsequent ripple effect on suppliers of the direct supply chain. In this report, the net indirect effect is a gain of 173 jobs with \$9,039,309 in earnings.

Induced – These numbers are due to the impact of the change in earnings created by the initial, direct and indirect effects. The jobs and associated earnings enter the economy as employees spend their paychecks in the region on food, clothing and other goods and services. In this report, the net induced effect is a gain of 691 jobs with \$27,062,401 in earnings.

Tax Impact of The Center

Another important component to review when assessing economic impact is the increase in state sales and income tax on personal income. As noted in the previous table, it was projected The Center helped to create 3,341 initial jobs that, given the ripple effect, has resulted in a total aggregate jobs created of 5,133. Such job creation is estimated to result in an earnings change of \$366,742,537. This earnings change will create annual revenues for the State as long as the jobs continue to exist. According to the South Carolina Board of Economic Advisors, 33.8 percent of income from production, transportation, and manufacturing occupations is attributable to benefits. Therefore, the following table shows the tax revenue for the portion of earnings that would be estimated as taxable income (\$242,783,559). The table shows the earnings change estimated to produce an additional \$14 million from South Carolina Income tax and an additional \$5.5 million in sales tax; for a total of \$19.6 million combined.

Total Net Effect in Earnings	\$	366,742,537
Adjustment for Benefits (33.8%)	\$	123,958,978
Net Wages Subject to SC Income Tax	\$	242,783,559
Net Wages Subject to Sales Tax (38%)	\$	92,257,752
Income Tax Revenues (avg. rate 5.8%)	\$	14,081,446
Sales Tax Revenues (rate of 6%)	\$	5,535,465
Combined Income and Sales Tax Revenue Generated	\$	19,616,911

Given the resulting increase in jobs and earnings there will be a significant increase in state income and sales tax on personal income. Based on the fact that 33.8 percent of income is attributable to benefits; 38 percent of income after benefits is subject to sales tax as a result of personal spending. By combining the results of the initial study conducted for the period of November 2007 through June 2009, the study performed July 2009 through September 2012, the study performed from

October 2012 through June 2014 and the study performed July 1, 2014 through June 30, 2015, and the study performed from July 1, 2015 to June 30, 2016, the results are an impressive effect on sales and income tax revenue as described in the following table.

Period	Net Jobs	Earnings	Taxable Income	Sales Tax	SC Income Tax	Combined Tax Revenue
2007-2009	1,621	\$ 58,716,000	\$ 39,339,720	\$ 735,653	\$ 2,006,326	\$ 2,741,979
2009-2012	2,282	\$140,794,929	\$ 97,430,091	\$ 2,221,406	\$ 5,650,945	\$ 7,872,351
2012-2014	6,649	\$439,188,722	\$ 290,742,934	\$ 6,628,939	\$16,863,090	\$23,492,029
2014-2015	4,304	\$292,403,988	\$193,571,448	\$4,413,429	\$11,227,144	\$15,640,573
2015-2016	5,133	\$366,742,537	\$242,783,559	\$5,535,465	\$14,081,446	\$19,616,911
Totals	19,989	\$1,297,846,176	\$ 863,867,752	\$19,534,892	\$49,828,951	\$69,363,843

Future Projections

In 2006, when the first workforce service project was being considered, no one could have imagined that Spartanburg Community College Tyger River Campus would in nine years house a plastics mold injection manufacturer, an armored vehicle manufacturer, a machine tool distributor, a power generation turbine service company, an automotive air-filter manufacturer, a quality control company, an advanced manufacturing design company, a carbon fiber company, a Rite Aid distribution company, and Kobelco Excavation manufacturing company, Brose, and Ritrama as clients of The Center. Add to this, the number of employment workforce projects The Center has supported, this once-envisioned idea has become reality and made its mark on economic development in the Spartanburg County area.

Currently, of the 363,000 square feet in the facility, approximately 300,000 square feet has been renovated. This space allows for 25,000 feet for classrooms and labs, 261,000 for light manufacturing, and 14,000 for office space. An additional 22,000 square feet has just been completed adding 22 additional offices, two conference rooms, shared workspace, classroom/training facility and equipment space. This additional space will allow The Center more capacity to support the continuing growth and development of our client base. Based on past performance it is estimated that The Center will directly impact the creation of 1,000 jobs annually

through the four services it provides—soft landings, small business incubation, workforce employment services and special projects.

Study Methodology

This study used an Input-Output Model available through EMSI's online services. EMSI is the developer and distributor of an online market labor and economic analysis tool that uses Federal, State, and Regional data to provide analysis on labor markets, industries, occupations, demographics, workforce trends, economic impacts, skills, job compatibility, and educational attainment, at almost any level of geographic detail.

EMSI's tool for analyzing economic impact is the Input-Output Model, which uses the national Input-Output matrix provided by the Federal Bureau of Economic Analysis. EMSI combines this with the national total Gross Output, the regional Total Gross Output, the land area of the Spartanburg County, regional data and in/out commuter patterns in order to calculate regional requirements, imports, and exports. Matrix algebra was used to calculate the regional multiplier, which results in a matrix that is multiplied by the sales vector and converted back to jobs and earnings. The data used in the matrix comes from the U.S. Department of Commerce, Bureau of Economic Analysis, and Industry Economic Accounts: Benchmark and Annual Input-Output Accounts. Other data used for this model includes data from the South Carolina Department of Employment and Workforce. Not only does EMSI look at Federal data but it also looks at the regional connectivity of industries in the past to determine how changes in one industry will affect another in terms of job and earnings changes.

EMSI employment data was used for this report. In addition, information for jobs lost from July 1, 2015-June 30, 2016 was obtained from the South Carolina Appalachian Council of Governments. Since job loss and job creation data spans several years, this data was shared with an EMSI technician to ensure it was not already captured in their employment data. It was verified that 2014-2015 job loss data was likely included in the County level employment data in EMSI. However, it was suspected that some of the 2015-2016 job loss data had not been included or was not filtered down from State to County level. By reviewing the number of jobs in the employment data, it was assessed that with some company closures and layoffs, such suppression was highly likely. Thus, job

loss data from July 1, 2015 to June 30, 2016 was entered into the Input-Output model, assuming that most of this data was not included in the County level employment data in EMSI. Therefore, the impact of job loss compared to job creation may be slightly overstated but still provides a fair conservative estimation of the impact of job creation in Spartanburg County, while accounting for the impact of job loss throughout the County. To get a better picture of economic impact by incorporating local job loss data the number of jobs and earnings decrease was subtracted from the jobs and earnings increase.

State sales and income tax estimates were generated based on the estimated change in income. According to the South Carolina Board of Economic Advisors, for occupations in production, transportation, and material moving, 33.8 percent of earned income is attributed to benefits. Therefore, the calculation for tax revenue deducted 33.8 percent from earnings to get the taxable income. It was estimated based on the South Carolina Board of Economic Advisors' numbers that 38 percent of taxable wages are spent on personal purchases and that 6 percent of that figure would result in sales tax revenue. In addition, the average tax liability for income in South Carolina is 5.8 percent. This percent was used to estimate state taxes on projected labor income as a result of job creation.

Previous Economic Impact Studies

Previous Economic Impact Studies may be accessed online at <https://www.sccsc.edu/Center/>.