



November 2015

Economic Impact Analysis Greater Memphis Medical Device Industry

This analysis was conducted for the Greater Memphis Medical Device Council (GMMDC) under the auspices of the Bartlett Area Chamber and the Economic Development Growth Engine for Memphis and Shelby County (EDGE). The purpose was to quantify the economic impact of the Medical Device Industry in Shelby County.

GMMDC identified 50 companies in the Medical Device Industry with 47 companies located within the municipalities of Shelby County and three located in DeSoto County, MS. GMMDC conducted a survey among these 50 companies to determine the number of people employed. For each of the companies that did not respond to the survey, the GMMDC executive committee provided conservative estimates of employment based upon their experience in the industry. The Shelby County Trustee provided property value data for real and personal parcels on file.

U.S. Bureau of Economic Analysis regional input-output multipliers (RIMS II) were used to calculate indirect employment and economic impact. Local wage rates, local tax rates, historical local tax collection ratios, regional consumer spending patterns and other data specific to Shelby County was used to calculate wage impact and estimate tax impact.

The tax revenue estimate is highly conservative because it does not include any sales and use taxes or local business taxes paid by directly by the companies.

Table I below summarizes the impact measures:

Jobs, Direct	6,487
Jobs, Indirect	10,336
Total Jobs	16,823
Wages (All Jobs)	\$1,249,332,225
Taxes Generated by Wages and Company Property Tax	\$46,054,313
Economic Impact	\$2,665,185,084

The consumer expenditures generated as a result of wages paid to direct and indirect jobs were also calculated as a part of this analysis. These are shown on page five of this report.

Other key findings:

The Medical Device Industry has an outsize impact on the Shelby County economy. The 47 Shelby County companies in the industry make up only 0.24% of the business establishments in the county. However, the direct and indirect jobs supported by these businesses represent 3.5% of all employment in the county. The economic output of the Medical Device Industry makes up 3.7% of the Shelby County Gross Domestic Product (GDP).

The average wages paid to employees by Shelby County medical device manufacturers is 65.7% higher than the overall annual average wage for the county.

The jobs multiplier effect for medical device manufacturers is among the highest for Shelby County with 1.67 indirect jobs created for each new direct job. A high multiplier indicates a high degree of integration of the industry in the local economy with numerous support businesses located within the county.

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Jobs, Wages & Tax Impact	Medical Device Distribution	Medical Device Mfg	Total
Companies	5	45	50
Number of Direct Jobs	675	5,812	6,487
Annual Average Wage for Industry ¹	\$ 61,937	\$ 88,660	
Wages and Benefits Paid to Direct Jobs	\$ 52,259,344	\$ 644,114,900	\$ 696,374,244
RIMS II Direct Effect Employment Multiplier ²	1.9388	2.6694	
Indirect Jobs Supported	634	9,703	10,336
Shelby County Annual Average Wage All Industries ³	\$ 53,497	\$ 53,497	
Wages Paid to Indirect Jobs	\$ 33,900,514	\$ 519,057,467	\$ 552,957,981
Total Jobs	1,309	15,515	16,823
Total Wages Paid to Direct & Indirect Jobs	\$ 86,159,858	\$ 1,163,172,367	\$ 1,249,332,225
Sales Tax Generated within Shelby County ⁴			\$ 14,111,207
Other Local Tax Generated within Shelby County ⁵			\$ 4,233,362
Indirect Property Taxes ⁶			\$ 15,103,403
Indirect Tax Revenue Generated			\$ 33,447,973
Direct Real and Personal Property Tax Paid by TN Companies ⁷			\$ 12,606,340
Total Local Tax Revenue Generated			\$ 46,054,313

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Projected Total Economic Impact	Medical Device Distribution	Medical Device Mfg	Total
RIMS II Final Demand Earnings Multiplier for Industry ⁸	0.56485	0.4519	
RIMS II Final Demand Output Multiplier for Industry ⁹	2.01585	1.739	
Ratio of Earnings to Output	0.2802	0.2599	
Total Direct Wages	\$ 52,259,344	\$ 644,114,900	\$ 696,374,244
Wages to Output	\$ 186,504,378	\$ 2,478,680,706	\$ 2,665,185,084

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Consumer Spending by Category				
Southern Region Annual Average Wages	\$ 61,405	Wages Paid to Jobs Supported	\$ 1,249,332,225	
Region Annual Average Expenditures	\$ 49,373	Annual Expenditures in Shelby County	\$ 1,004,531,877	
Region Annual Average Taxes & Savings	19.6%	Annual Taxes & Savings	\$ 244,800,347	
Retail Category	Southern Region Expenditures	% of Total		Increased Spending from Wages
Food/Groceries	\$ 6,378	12.9%	of Expenditures	\$ 129,765,344
Food at Home	\$ 3,709	58.2%	of Food	\$ 75,462,474
Food Away From Home	\$ 2,669	41.8%	of Food	\$ 54,302,870
Housing/Shelter	\$ 8,845	17.9%	of Expenditures	\$ 179,958,367
Owned Dwellings	\$ 5,272	59.6%	of Housing/Shelter	\$ 107,262,918
Mortgage Interest & Charges	\$ 2,732	51.8%	of owned Dwellings	\$ 55,584,653
Property Taxes	\$ 1,311	24.9%	of owned Dwellings	\$ 26,673,309
Maintenance, Repair, Insurance	\$ 1,229	23.3%	of owned Dwellings	\$ 25,004,956
Rented Dwellings	\$ 2,998	33.9%	of Housing/Shelter	\$ 60,996,629
Other Lodging	\$ 575	6.5%	of Housing/Shelter	\$ 11,698,820
Utilities	\$ 4,038	8.2%	of Expenditures	\$ 82,156,234
Housekeeping Supplies/Services	\$ 1,683	3.4%	of Expenditures	\$ 34,241,937
Household Furnishings/Equipment	\$ 1,466	3.0%	of Expenditures	\$ 29,826,904
Apparel	\$ 1,592	3.2%	of Expenditures	\$ 32,390,471
Transportation	\$ 9,041	18.3%	of Expenditures	\$ 183,946,139
Vehicle Purchases	\$ 3,563	39.4%	of Transportation	\$ 72,491,991
Cars & Trucks - New	\$ 1,794	50.4%	of Vehicle Purchases	\$ 36,500,318
Cars & Trucks - Used	\$ 1,721	48.3%	of Vehicle Purchases	\$ 35,015,076
Other Vehicles	\$ 48	1.3%	of Vehicle Purchases	\$ 976,597
Gasoline & Motor Oil	\$ 2,553	28.2%	of Transportation	\$ 51,942,760
Other Vehicle Expenses	\$ 2,512	27.8%	of Transportation	\$ 51,108,583
Maintenance & Repair	\$ 775	30.9%	of other Vehicle Expenses	\$ 15,767,975
Vehicle Insurance	\$ 1,101	43.8%	of other Vehicle Expenses	\$ 22,400,697
Vehicle Rental, Leases, Licenses	\$ 408	16.2%	of other Vehicle Expenses	\$ 8,301,076
Finance Charges	\$ 228	9.1%	of other Vehicle Expenses	\$ 4,638,836
Public Transportation	\$ 413	4.6%	of Transportation	\$ 8,402,804
Healthcare	\$ 4,024	8.2%	of Expenditures	\$ 81,871,393
Health Insurance	\$ 2,719	67.6%	of Healthcare	\$ 55,320,158
Medical Services	\$ 664	16.5%	of Healthcare	\$ 13,509,594
Drugs	\$ 519	12.9%	of Healthcare	\$ 10,559,456
Medical Supplies	\$ 122	3.0%	of Healthcare	\$ 2,482,184
Personal Care Products/Services	\$ 577	1.2%	of Expenditures	\$ 11,739,511
Personal Insurance & Pensions	\$ 5,182	10.5%	of Expenditures	\$ 105,431,799
Life & Other Personal Insurance	\$ 284	5.5%	of Personal Insurance	\$ 5,778,200
Pensions & Social Security	\$ 4,898	94.5%	of Personal Insurance	\$ 99,653,599
Entertainment	\$ 2,516	5.1%	of Expenditures	\$ 51,189,966
Reading	\$ 82	0.2%	of Expenditures	\$ 1,668,353
Education	\$ 880	1.8%	of Expenditures	\$ 17,904,281
Tobacco & Alcohol	\$ 708	1.4%	of Expenditures	\$ 14,404,808
Charity/Cash Contributions	\$ 1,697	3.4%	of Expenditures	\$ 34,526,778
Miscellaneous	\$ 664	1.3%	of Expenditures	\$ 13,509,594
	\$ 49,373	100.0%		\$ 1,004,531,877

*Percentage indicates the average spending by retail category for the Southern Region of the United States in 2014.

South Region Definition: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Notes for Greater Memphis Medical Device Impact Analysis:

1. Based upon data from the Tennessee Department of Labor and Workforce Development; Annual Average Wage for Shelby County, 2014 for the specified industries with a 3.5% inflation factor applied for 2015.
2. U.S. Bureau of Economic Analysis, RIMS II direct effect employment multiplier for the specified industry for Shelby County, TN. This multiplier represents the number of indirect jobs supported per direct job by the specified industry.
3. Based upon data from the Tennessee Department of Labor and Workforce Development Annual Average Wage for Shelby County, 2014 for all industries with a 3.5% inflation factor applied for 2015.
4. U.S. Department of Labor, "Consumer Expenditure Survey, Southern US" 2014; factor applied to determine the rate of indirect or "downstream" expenditures on sales taxable goods and services at local Shelby County option tax rate of .0225.
5. Based upon July 2014 - June 2015 collections of Business, Alcohol, Motor Vehicle and other local taxes compared to sales tax for Shelby County.
6. New property tax for Shelby County and municipalities based on projected new property value created by wages paid to new jobs. The new property value may be new single family homes, new rental property, expansions or improvements to existing residential or commercial property. Although commercial property value is included, the residential rate of assessment is used as a conservative measure. The assessment rate of 25% and a Shelby County tax rate of \$4.37, as well as a combination of other Shelby County Municipality tax rates per \$100 of assessed value is used.
7. Estimated municipal and Shelby County taxes on real and personal property based upon the average annual property tax payments for companies in the sample universe with reported taxes.
8. U.S. Bureau of Economic Analysis, RIMS II, final demand earnings multiplier for Shelby County, TN for the specified industry.
9. Bureau of Economic Analysis, RIMS II final demand output multiplier for Shelby County, TN for the specified industry.

* Constant 2015 dollars. No tax rate increases are assumed.