

**A Preliminary Analysis of the Importance and Impact of the Health Care and Social Assistance Sector
on the Tyler Regional Retail Trade Area Economy¹**

INTRODUCTION

The health care and social assistance sector² is an important segment of the Tyler Regional Retail Trade Area (RRTA) economy. As evidenced from Table 1, this sector’s influence on total employment has been relatively steady from 2002 to 2009 ranging from 13% to 14%. At the state and national levels, this sector’s share of total employment has also been steady over the same time period ranging from 10% to 11% at the state level and from 10% to 12% at the national level. Comparatively, the health care and social services sector’s share of Tyler RRTA’s total employment has been relatively larger than its state and national counterparts.

TABLE 1: Health Care Sector Share of Local, State and National Total Employment.

Year	Tyler	Texas	US
2002	13%	10%	10%
2003	14%	10%	10%
2004	14%	10%	11%
2005	14%	10%	11%
2006	14%	10%	11%
2007	13%	10%	11%
2008	13%	10%	12%
2009	14%	11%	12%

SOURCE: EMSI³ and Texas Comptroller of Public Accounts calculations.

In fact, over the last eight years, employment growth in the Tyler RRTA health care and social assistance sector has grown at a faster pace than the overall MSA economy. From 50,762 workers in 2002, employment in this sector has added 8,909 workers to reach an estimated 58,852 by 2009. This 15.9% increase in employment has overshadowed the 7.3% increase in overall RRTA employment for the same

¹ The Tyler Regional Retail Trade Area (RRTA) comprises approximately 22 counties that are outlined in a report by the Retail Coach to the Tyler EDC/Tyler Chamber of Commerce (November 11, 2008). See Table 6 in the Appendix for list of counties that comprise Tyler RRTA.

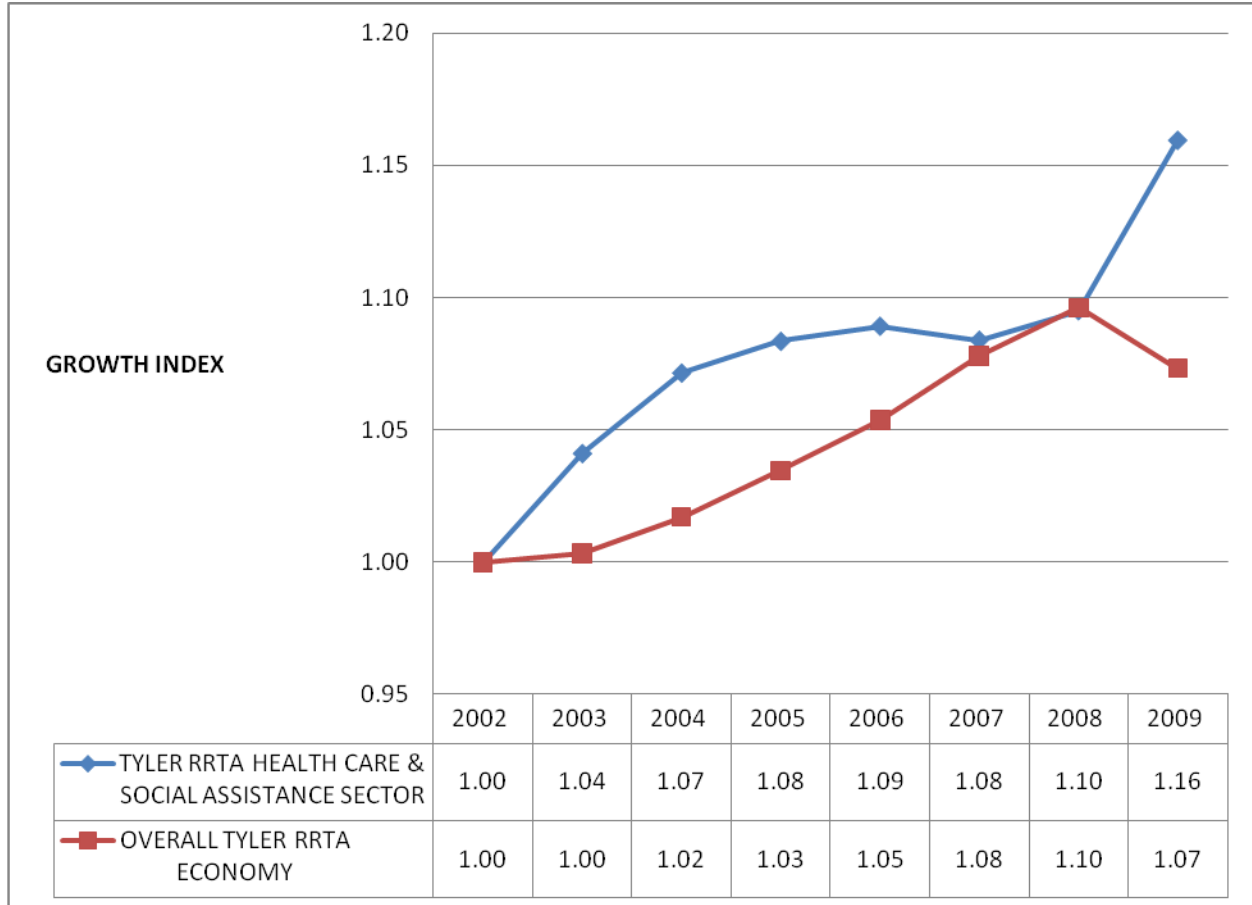
² This represents industries that make up code number 62 of the North American Industry Classification System. This group is composed of the following industries:

1. Ambulatory Health Care Services (Offices of Physicians, Dentists, other Health Practitioners, Outpatient Care Centers, Medical and Diagnostic Laboratories, Home Health Care Services, and other ambulatory care services);
2. Hospitals;
3. Nursing and Residential Care Facilities; and,
4. Social Assistance.

³ Economic Modeling Specialists, Inc. (<http://www.economicmodeling.com/>).

time period. Figure 1 shows the annual employment growth rates for this sector and the overall economy of Tyler RRTA.

FIGURE 1: Employment Growth Rates for Tyler RRTA Overall Economy and Health Care Sector.



SOURCE: EMSI and Texas Comptroller of Public Accounts calculations.

INDUSTRY CONCENTRATION

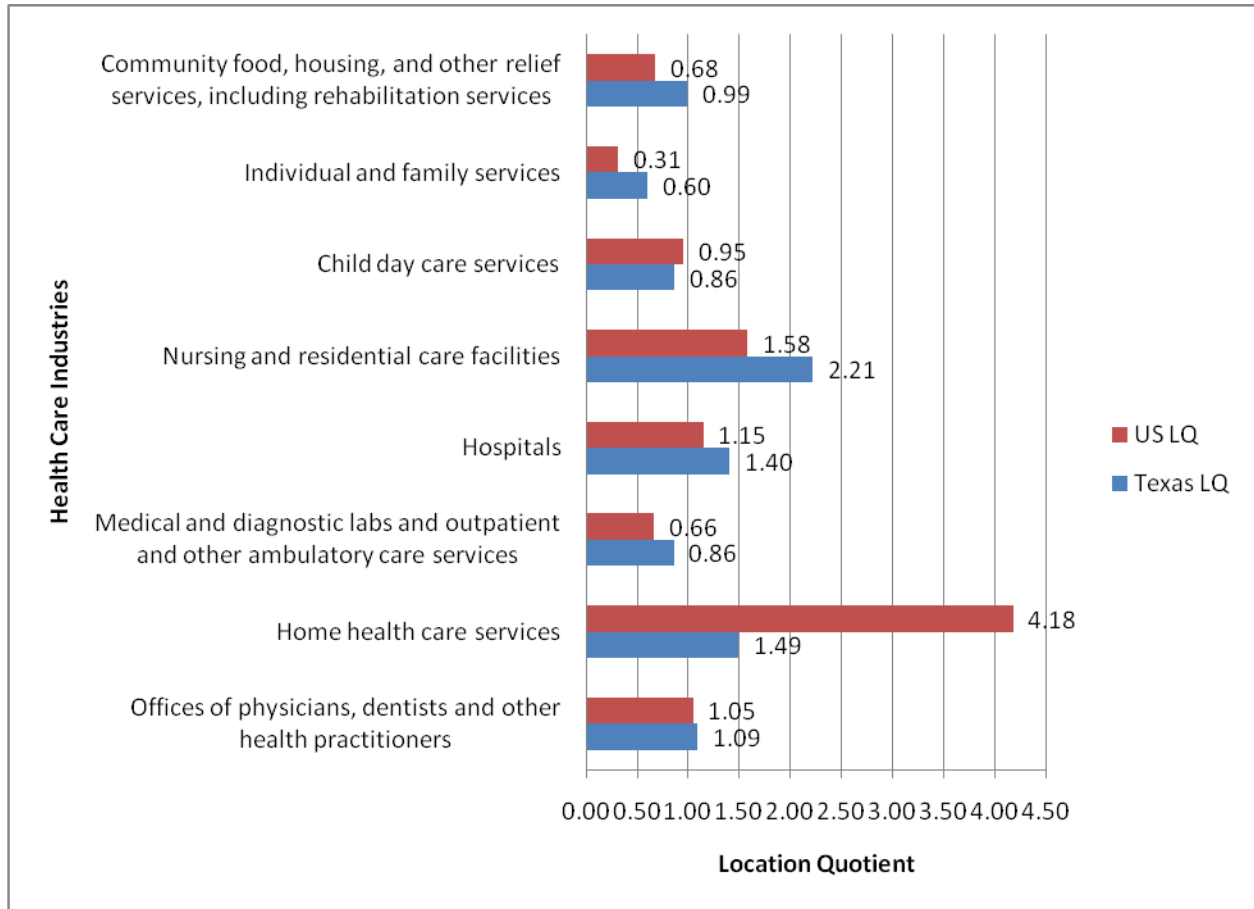
A location quotient (LQ) is a tool that describes the degree to which an industry in a particular geographic area is concentrated⁴ vis-à-vis a larger reference area. LQ values that exceed one (1) indicates that a local industry is more concentrated than its reference region counterpart.

Figure 2 shows the 2002-2009 average location quotients for eight Tyler RRTA health care industries. The degree of concentration of these local industries has been estimated in relation to their

⁴ For the purpose of this analysis, concentration (as measured using LQs) refers to the proportion of industry employment in a region in relation to employment in the same industry in a larger region. Industry concentration based on location quotients has been used as a measure of the degree of specialization (and export base potential) for a regional industry. LQ values greater than one indicate that the industry under study is a base industry for the local economy.

counterparts at the state (Texas LQ) and national (US LQ) levels. Based on the figure, four of the eight Tyler RRTA health care industries have state and national LQs that are greater than one.

FIGURE 2: Tyler RRTA Health Care Industries Location Quotients (2002-2009 Average).



SOURCE: EMSI and Texas Comptroller of Public Accounts calculations.

For example, the LQ for Tyler RRTA’s hospital industry is 1.40 for the Texas LQ and 1.15 for the US LQ. This means that over the last eight years, local hospital industry average employment has been 1.40 times and 1.15 times larger than the eight-year employment averages for the state and national hospital industries, respectively.

Among the eight health care sectors in Tyler RRTA, the national LQs for the home health care industry is worth mentioning. This local industry is over four times more concentrated in employment than its national counterpart.

COMPETITIVENESS OF THE TYLER RRTA HEALTH CARE SECTOR

In the preceding sections, the focus on the analysis has been on employment growth and level of concentration in the industries that comprise Tyler RRTA's health care sector. The present section provides an analysis of the following items:

- What factors⁵ influence employment change in these local industries?
- Which of these local industries are competitive?

To answer these questions, Shift-Share Analysis (SSA) is utilized. SSA is a quantitative tool that decomposes the change in a variable, such as employment, into several components. Using Tyler RRTA-level employment values for various health care industries as the variable under consideration, SSA breaks down the change in employment into the following components:

- National (State) Share Effect (NS) – This represent the portion of change in Tyler RRTA-level health care industry employment that is due to national (state) economy-wide conditions. The employment level shown by this component represents the change in industry employment in the local area that would occur if it grew at the same rate as the national economy;
- Industry Mix Effect (IM) – This shows the portion of change in Tyler RRTA-level health care industry employment that is due to conditions in the national counterpart of the local health care industry under consideration. Positive (negative) IM values are indicative of fast (slow) growing industries in the area under study; and,
- Competitive Effect (CE) – This component shows the portion of change in Tyler RRTA health care industry employment that is due to local factors. Positive (negative) CE values indicate the fact that the local area has a competitive advantage (disadvantage) in the industry under study vis-à-vis the nation (state).

For the purpose of this analysis, two SSAs have been undertaken. While both analyses look at employment changes in eight Tyler RRTA-level health care industries between 2002 and 2009, the first SSA, whose results are shown in Table 2, analyses the change in employment in comparison with the state. The second SSA, whose results are shown in Table 3, compares the change in employment to the nation. The reason for these two sets of analyses is due to the fact that the state and national factors may have differing effects on the change local area employment. In addition, the degree of competitiveness that a local industry may possess will differ in relation to the reference area that the local industry is being compared with.

⁵ Given the fact that there may be a substantial number of factors that may influence the change in employment, this analysis limits the number of potential causes to the components of change utilized in shift-share analysis.

TABLE 2: Shift-Share Analysis of Tyler RRTA Health Care Industries (vis-à-vis Texas).

NAICS Code	Industry	State Share		Industry Mix		Competitive Effect		TOTAL	
		(#Jobs)	(% share)	(#Jobs)	(% share)	(#Jobs)	(% share)	(#Jobs)	(% share)
6211-3	Offices of physicians, dentists, and other health practitioners	1,009	33%	2,010	65%	(77)	2%	2,942	100%
6216	Home health care services	884	15%	3,972	68%	(979)	17%	3,877	100%
6214-5, 6219	Medical and diagnostic labs and outpatient and other ambulatory care services	176	15%	502	43%	(496)	42%	182	100%
622	Hospitals	1,514	42%	644	18%	(1,480)	41%	678	100%
623	Nursing and residential care facilities	1,389	41%	324	9%	(1,699)	50%	14	100%
6244	Child day care services	213	58%	(100)	27%	(55)	15%	58	100%
6241	Individual and family services	84	10%	442	51%	(348)	40%	178	100%
6242-3	Community food, housing, and other relief services, including rehabilitation services	78	48%	31	20%	52	32%	161	100%

SOURCE: Texas Comptroller of Public Accounts calculations.

TABLE 3: Shift-Share Analysis of Tyler RRTA Health Care Industries (vis-à-vis US).

NAICS Code	Industry	National Share		Industry Mix		Competitive Effect		TOTAL	
		(#Jobs)	(% share)	(#Jobs)	(% share)	(#Jobs)	(% share)	(#Jobs)	(% share)
6211-3	Offices of physicians, dentists, and other health practitioners	125	4%	1,669	57%	1,148	39%	2,942	100%
6216	Home health care services	110	2%	4,113	90%	(345)	8%	3,877	100%
6214-5, 6219	Medical and diagnostic labs and outpatient and other ambulatory care services	22	3%	489	58%	(329)	39%	182	100%
622	Hospitals	188	6%	1,745	55%	(1,254)	39%	678	100%
623	Nursing and residential care facilities	172	6%	1,394	45%	(1,552)	50%	14	100%
6244	Child day care services	26	6%	206	51%	(175)	43%	58	100%
6241	Individual and family services	10	2%	392	63%	(224)	36%	178	100%
6242-3	Community food, housing, and other relief services, including rehabilitation services	10	6%	41	25%	110	69%	161	100%

SOURCE: Texas Comptroller of Public Accounts calculations.

Figure 1 above showed that the region’s health care and social assistance sector grew by approximately 16 percent from 2002 to 2009. The total change in employment columns in Tables 2 and 3 provide evidence of this employment growth at the industry level. What the figure does not show is the sources of growth in regional these health care and social assistance industries. These shift-share tables provide a more detailed explanation for the sources of employment growth.

In both tables, while the regional industries have posted employment growth over the eight year period, none of these industries could attribute their growth to regional factors (competitive effect). A significant portion of the employment growth could be attributed to the influence of state and national factors (state/national share effect) and national-level industry influences (industry mix effect).

The only industries that have exhibited positive competitive effects are the *community food, housing, and other relief services, including rehabilitation services* (NAICS 6242-3) and the *offices of physicians, dentists, and other health practitioners* (NAICS 6211-3) industries. The former is competitive both in relation to the state (Table 2) and the nation (Table 3) while the latter is competitive in relation to the nation (Table 3).

CONTRIBUTIONS OF THE TYLER RRTA HEALTH CARE SECTOR TO THE LOCAL ECONOMY

In light of identifying industry concentration and competitiveness, it is important to understand the contributions of these industries to the Tyler RRTA economy as a whole. This section focuses on the impact of health care sector employment on job creation in other segments of the MSA economy. Furthermore, this section also analyzes the amount of income that would be generated in the local economy as a result of the wages received by workers in the health care sector. Finally, the sales tax implications of the potential consumer expenditures generated by income obtained from this sector is presented.

Employment Impact of Tyler RRTA Health Care Sector

Using the IMPLAN Input-Output model for Smith County and the industry-level employment numbers for 2009, employment multiplier effects have been estimated for eight industries that comprise the Tyler RRTA health care sector. The estimated multiplier effects are presented in Table 4.

TABLE 4: Employment Impacts of Tyler RRTA Health Care Industries.

NAICS Code	Industry	Impacts		
		Direct	Indirect & Induced	Total
6211-3	Offices of physicians, dentists, and other health practitioners	12,521	9,756	22,277
6216	Home health care services	12,272	2,666	14,938
6214-5, 6219	Medical and diagnostic labs and outpatient and other ambulatory care services	1,853	1,118	2,971
622	Hospitals	15,051	9,429	24,480

623	Nursing and residential care facilities	13,204	3,407	16,611
6244	Child day care services	2,076	358	2,434
6241	Individual and family services	977	230	1,207
6242-3	Community food, housing, and other relief services, including rehabilitation services	898	229	1,127
	HEALTH CARE & SOCIAL ASSISTANCE	58,852	27,193	86,045

SOURCE: IMPLAN Input Output Model for Counties comprising the Tyler RRTA.

As an example, based on the data provided by EMSI, the offices of physicians, dentists and other health practitioners industry in Tyler RRTA employed 12,521 workers in 2009. The IMPLAN model for the region estimates that 9,756 employees in other regional industries work to supply inputs to the industry and to meet the consumer needs of this area health care industry and its local suppliers. This means that a total of 22,277 jobs in the RRTA are directly and indirectly dependent upon the local offices of physicians, dentists and other health practitioners industry.

The last row of the table shows that approximately 58,852 Tyler RRTA jobs are directly associated with the area’s health care sector. Based on the input-output model for the area, it is estimated than an additional 27,193 non-health care sector jobs rely upon the area’s health care sector. This means that a total of 86,045 jobs in the RRTA are directly and indirectly dependent upon the local health care sector.

Income Impact of Tyler RRTA Health Care Sector⁶

Similar to the analysis in the previous section, using the IMPLAN Input-Output model for the Tyler Regional Retail Trade Area and wage data from the Texas Workforce Commission, the multiplier effect of total wages obtained from the area’s healthcare industries has been estimated. These impacts are presented in Table 5.

TABLE 5: Income Impacts of Tyler RRTA Health Care Industries.

NAICS Code	Industry	Impacts		
		Direct	Indirect & Induced	Total
		(\$ Million)		
6211-3	Offices of physicians, dentists, and other health practitioners	\$598.46	\$202.50	\$800.96
6216	Home health care services	\$258.09	\$86.59	\$344.68
6214-5, 6219	Medical and diagnostic labs and outpatient and other ambulatory care services	\$75.81	\$40.85	\$116.66
622	Hospitals	\$684.37	\$278.89	\$963.26
623	Nursing and residential care facilities	\$299.28	\$100.93	\$400.20
6244	Child day care services	\$27.74	\$14.67	\$42.41
6241	Individual and family services	\$24.53	\$9.75	\$34.28

⁶ For the purpose of this analysis, the income impact focuses on labor income (employee compensation and proprietor’s income).

6242-3	Community food, housing, and other relief services, including rehabilitation services	\$21.70	\$9.31	\$31.01
	HEALTH CARE & SOCIAL ASSISTANCE	\$1,989.96	\$743.49	\$2,733.45

SOURCE: IMPLAN Input Output Model for Counties comprising the Tyler RRTA and Texas Workforce Commission.

Taking the direct industry-level employment data in Table 4 and multiplying these by the corresponding wage information from the Texas Workforce Commission, a column of direct annual income for Tyler RRTA's health care sector was estimated. This column shows that a total of approximately \$1.99 billion in direct health care sector income is expected to be generated in 2009. Adding to this an estimated \$743.49 million in indirect and induced income, approximately \$2.73 billion of income will be directly and indirectly attributed to the regional health care sector.

APPENDIX

Table 6: Counties comprising the Tyler Regional Retail Trade Area.

Anderson	Morris
Angelina	Nacogdoches
Camp	Panola
Cass	Rains
Cherokee	Rusk
Franklin	Shelby
Gregg	Smith
Harrison	Titus
Henderson	Upshur
Houston	Van Zandt
Marion	Wood

SOURCE: Information used in this table was based on map in November 2008 report of Retail Coach to Tyler EDC/Chamber of Commerce.