

Economic Impact Analysis

**LOGISTICS SECTORS:
Transportation, Warehousing, &
Wholesale Trade**

SPRINGFIELD, MISSOURI

Prepared for
**The Springfield Area Chamber of Commerce
and the City of Springfield, Missouri**

December 2006

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REAL ESTATE APPRAISAL

December 13, 2006

Mr. Jim Anderson
President
Springfield Area Chamber of Commerce
202 S. John Q. Hammons Parkway
Springfield, Missouri 65806

Dear Mr. Anderson:

Development Strategies is pleased to submit this report on the economic impact of the logistics sector (wholesale trade, transportation, and warehousing) in the Springfield region. The analysis is the result of (1) a review of standard economic statistics obtained from state and federal sources and (2) a survey conducted of companies in the logistics sector in the Springfield region. The survey sought information on these logistics firms' spending and revenue patterns in the area and on their employment.

Collectively, the logistics sector is large in the diverse economic environment of the Springfield region, making up some 8.3% of all jobs in the region (10.5% in metropolitan Springfield alone). While that is an impressive impact itself, this report also describes the multiplier effects of logistics sector spending. All logistics firms take in revenues, much of it from customers from out of town. And they all spend money to operate—for payrolls, supplies, services, capital improvements, etc. These expenditures become income, or revenue, for employees and other businesses who, in turn, spend that money to support their households and businesses. The re-spending effects “ripple” through the Springfield region, and their scale can be estimated with multipliers that were obtained from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). BEA tracks economic activity in every county in the nation and is able to determine the economic relationships between economic sectors and geographic areas. One outcome is a set of multipliers for the Springfield region.

Collectively, an estimated 1,300 logistics firms in the region spend \$5.20 billion per year. Not all of that money is spent in Springfield; some “leaks” out and has no impact on the Springfield economy. Based on the survey, about 34% of all operating expenditures and 97% of payroll expenditures are paid directly into the regional economy. Subsequent rounds of re-spending, of course, cause additional leakage of that “original” spending, eventually dwindling to zero over time. But the multiplier effects create more income and spending in the Springfield regional economy than simply the direct effects of the manufacturers themselves.

That \$5.20 billion in spending, therefore, triggers an estimated. . .

- \$9.10 billion in additional economic activity in the ten-county region;
- \$2.67 billion in additional household income for the regional labor force; and

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- 76,540 jobs throughout the region, both full and part time, in addition to the approximately 22,400 employed by all logistics companies. Together, these roughly 99,000 jobs account for almost four out of ten jobs in regional economy.

The largest 49 employers tracked by the Springfield Area Chamber of Commerce have a total of almost 62,000 employees (http://business4springfield.com/publications/major_employers.htm), so the ripple effects from logistics are greater than the jobs represented by this impressive list. As Missouri's third largest metropolitan economy, greater Springfield contributes strongly to the diversity of jobs and tax base that benefit the state. Logistics, in fact, is more dominant in the greater Springfield area than in the state as a whole or the entire nation, marking Springfield as a relatively important cog in the nation's and state's logistics wheels.

It has been a pleasure to work with you on this assignment. We look forward to Springfield's continued economic expansion as it capitalizes on this major sector.

Respectfully submitted on behalf of
DEVELOPMENT STRATEGIES, INC.

Robert M. Lewis, AICP, CEcD
Principal and Chief Economist

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EXECUTIVE SUMMARY

Jobs in the “logistics” sector¹ of the Springfield metropolitan economy made up 10.5% of all jobs in the five-counties in 2004, more than in Missouri as a whole (8.6%) and the nation (8.1%). For the larger “Springfield region”, which adds five other counties to the metro area, logistics jobs made up 8.3% of all jobs, making the added five counties less dependent on logistics than the metropolitan area alone.

Logistics is a relatively high paying sector of the economy. Logistics jobs paid an average of almost \$44,500 in 2004 in metro Springfield, 39% higher than the average earnings of all workers and 45% higher than all non-manufacturing jobs. The average earnings of a non-logistics worker in metro Springfield was \$30,700 in 2004, compared to \$40,800 for the average health care worker, \$52,500 in manufacturing, and \$23,550 for the average retail employee.

Because logistics is often touted as a foundation of economic development, the Springfield Area Chamber of Commerce, in conjunction with the City of Springfield, asked Development Strategies to conduct a formal economic impact analysis of the sector in metropolitan Springfield area and in a larger “Springfield region” consisting of the metro area’s five counties plus five added counties south and west of the metro area.

One intent was to identify the direct and multiplier impacts of logistics in terms of jobs created and income generated by and within the sector. The key to an economic impact analysis is the amount of spending generated by logistics firms, especially the spending that takes place directly in the Springfield regional economy. To obtain such spending information, and related economic factors, a survey was conducted of logistics firms in the ten counties.

Aggregate results from the survey responses are discussed in this report. Those results are then utilized to determine multiplier effects which illustrate, essentially, three key impacts on the Springfield economy:

1. The **increase in economic activity**, or “gross domestic product,” triggered by the spending of the logistics firms. This is called the “output” multiplier.
2. The **increase in personal income** for Springfield area households that results from spending and re-spending of dollars in the metro economy. This is called the “earnings” multiplier.
3. The **increase in jobs** supported by the multiplier effects that are triggered by logistics operations. This is called the “employment” multiplier.

Using financial data provided by a survey of logistics in the ten-county Springfield region and data obtained from the U.S. Census Bureau’s *County Business Patterns*, an economic impact model was created to demonstrate multiplier effects on the ten-county region. Summary results of these impacts are shown on Table E-1 (metropolitan economy) and Table E-2 (10-county regional economy).

¹ Includes the two major sectors tracked by most economic statistics: (1) wholesale trade and (2) transportation and warehousing.

Table E-1: Annual Economic Impact of Logistics Firms on the Five-County Springfield Metropolitan Area				
(millions of current dollars)				
	Capital Im- provements	Operating Expenditures	Employee Compensation	Total
	\$1,304.7	\$2,903.1	\$996.7	\$5,204.4
Multipliers				
Output	1.98	1.84	1.17	1.75
Earnings	0.62	0.53	0.33	0.51
Employment	18.63	13.79	12.22	18.90
ECONOMIC IMPACT ON 10-COUNTY REGIONAL ECONOMY				
Output	\$2,589.1	\$5,346.6	\$1,168.3	\$9,104.1
Earnings	\$808.8	\$1,530.8	\$329.4	\$2,669.0
Employment (weighted an- nual average jobs)	24,310	40,050	12,180	76,540

Table E-2: Annual Economic Impact of Logistics Firms on the 10-County Springfield Region				
(millions of current dollars)				
	Capital Im- provements	Operating Expenditures	Employee Compensation	Total
	\$1,432.8	\$3,188.1	\$1,094.5	\$5,715.3
Multipliers				
Output	2.05	1.91	1.24	1.81
Earnings	0.67	0.57	0.36	0.51
Employment	18.81	15.18	12.37	18.90
ECONOMIC IMPACT ON 10-COUNTY REGIONAL ECONOMY				
Output	\$2,940.9	\$6,074.4	\$1,356.3	\$10,371.6
Earnings	\$961.4	\$1,823.0	\$390.5	\$3,175.0
Employment (weighted an- nual average jobs)	26,950	48,390	13,540	88,880

The first set of numbers across the top of Table E-1 shows that, together, the logistics sector spends about \$1,304.7 million per year for capital improvements in the metropolitan area (primarily for vehicles), \$2,903.1 million for operating expenditures other than payroll, and \$996.7 million for payroll. The equivalent figures are about 10 percent higher for the larger 10-county region.

The multipliers are specific to the five-county Springfield metro area on Table E-1 and, separately, for the 10-county region (Table E-2). Effectively, they indicate how much growth in the economy will result from the noted expenditures. The multipliers already take into consideration the effects of “leakage” of spending

from the target economic area, so they indicate a finite amount of growth that can occur. What is not known, however, is the speed at which this triggered growth takes place. The velocity of change is a function of the strength and vibrancy of the local and national economies, not of the relationship of the logistics sector to other sectors—which is what the multipliers indicate.

Thus, output (or economic activity or metro Springfield’s contribution to the nation’s gross domestic product) increases by \$9,104.4 million (over \$9.1 billion) in the metro economy as a result of the spending by the area’s logistics companies—See Table E-1. Metro Springfield households capture \$2,669.0 million of this in earnings, thus supporting additional household expenditures. And 76,540 jobs (full and part time) in the Springfield metro area are in some way supported by this added economic activity in addition to the 22,400 jobs in 1,300 logistics firms in the MSA. This total of about 99,000 jobs represents almost one out of four jobs in the Springfield region, which is not surprising in light of the scale of the logistics sector and its ability to both attract “new” dollars into metro Springfield while paying relatively high wages to a large part of the local labor market which spends and re-spends its earnings in the region.

1.0 BACKGROUND AND METHODOLOGY

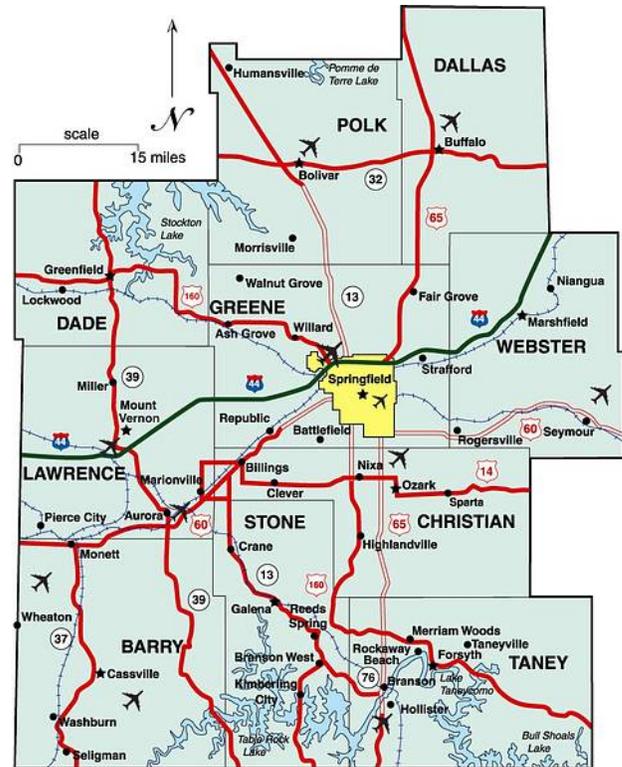
The sum of jobs in the logistics sector² of the Springfield metropolitan economy made up 10.5 percent of all private, non-farm jobs in the five-county metropolitan area in 2004,³ and 9.1 percent of all such jobs in the entire ten-county region.⁴ The equivalent percentage for the entire state of Missouri was 8.6 percent, and for the U.S. as a whole was 8.1 percent. Clearly, this sector plays an above-average role in supporting the Springfield economy.

Because of the obvious scale represented by logistics firms in the Springfield region, the Springfield Area Chamber of Commerce, in conjunction with the City of Springfield, asked Development Strategies to conduct a formal economic impact analysis of the sector on both the Springfield metro area and the larger ten-county region.

The intent was to identify the direct impacts of this sector in terms of jobs created and income generated by and within it. But the intent was also to determine multiplier effects—that is, the spending and re-spending effects as money passes through the various companies and their employees and is re-spent elsewhere in the Springfield area economy. To determine multiplier effects, mathematical multiplier coefficients were obtained from the U.S. Department of Commerce’s Regional Input-Output Multiplier System (RIMS-II) which determines the multiplier relationships between a vast array of economic sectors in and between every county in the U.S. For the current analysis, multipliers were obtained for both the Springfield metropolitan area and, separately, for the ten-county region as a whole.

The key to an economic impact analysis is the amount of spending generated by the subject companies, especially the spending that takes place directly in the target economy. Moreover, valuable information can derive from knowledge of employment and the places of residence of employees—where they spend most of their wages). Thus, a questionnaire was sent to just over 80 logistics establishments in the metro area and to another 20 logistics firms in the other five counties of the Springfield region asking for key input data, including:

- Number of employees (full time, part time, and contract) and where they generally reside.



² The logistics sector is defined as a combination of the wholesale trade, transportation, and warehousing sectors that primarily involve transportation and distribution of goods.

³ Latest comprehensive data are for 2004. The metro area consists of Greene, Christian, Dallas, Polk, and Webster Counties. Metro areas are standard geographic areas for economic analysis in the U.S. While the “markets” or “spheres of influence” of universities and medical centers extend well beyond these borders, metropolitan areas are defined, for the most part, by labor markets. Thus, the workers at universities and medical centers are concentrated in the metro area even though the services they provide may be less concentrated. Source of the data is the Regional Economic Information System (REIS) of the U.S. Dept. of Commerce, Bureau of Economic Analysis.

⁴ The ten-county “greater Springfield region” includes the five counties of the metropolitan area plus Barry, Dade, Lawrence, Stone, and Taney Counties.

- Payroll for these employees.
- Operating expenditures other than payroll with an estimate of how much is directly spent inside and outside the Springfield area.
- Capital expenditures over a three-year period to determine the level of cash investments being made.
- Total revenue.

Aggregate results from the survey responses are discussed in this report. Those results are then utilized to determine multiplier effects which illustrate, essentially, three key impacts on the Springfield economy:

1. The **increase in economic activity**, or “gross domestic product,” triggered by the spending of the subject firms. This is called the “output” multiplier.
2. The **increase in personal income** for Springfield regional households that results from spending and re-spending of dollars in the metro economy. This is called the “earnings” multiplier.
3. The **increase in jobs in the metro economy** supported by the multiplier effects that are triggered by the logistics firms. This is called the “employment” multiplier.

Multipliers for the Springfield region are finite. That is, a dollar spent by a manufacturing firm is partially spent in the Springfield economy and partially spent elsewhere. The amount spent elsewhere is “leaked” out of the area, but the amount spent inside the region is re-spent—becoming income for the recipient. Some of that amount, however, is also leaked from the region when it is spent while the rest, though now a smaller amount, stays within the region, a process that continues through the various cycles of re-spending. Eventually, none of the original dollar is left, thus creating a finite multiplier. Meanwhile, of course, that original dollar created some multiple of itself in income and spending within the Springfield region.

By way of illustration, the “food and beverage manufacturing” output multiplier for the Springfield metro area is 2.48. This means that every \$1.00 spent by a food or beverage manufacturer in Springfield generates another \$2.48 in income and spending in the metro area. The same multiplier for the entire ten-county Springfield region, by way of comparison, is somewhat higher at 2.70 because the ten-county economy (which includes the metro area) is a larger economy. In both cases, however, the original dollar eventually dwindles to zero as successive rounds of leakage take place.

This study first analyzes available economic data from federal and state sources to place the logistics sector in a larger context. Then the results of the survey of logistics firms are presented. The final chapter describes the multiplier effects of logistics in both metro Springfield and the larger ten-county region based on the survey findings.

2.0 ECONOMIC SCALE OF THE LOGISTICS SECTOR IN SPRINGFIELD

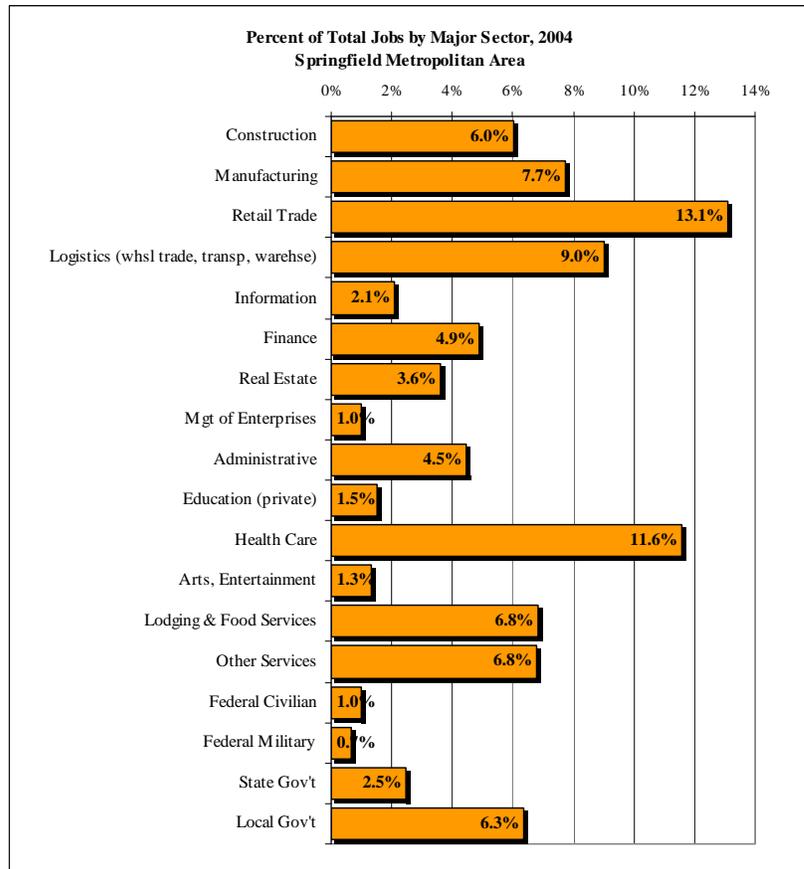
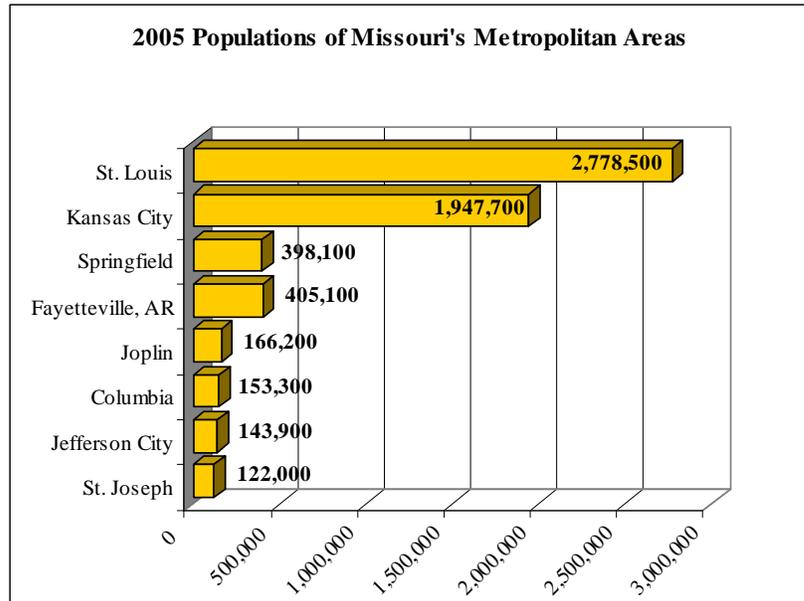
The Springfield metropolitan area is one of eight that include at least one Missouri county, and one of seven where the primary central city is located in Missouri. At present, Springfield is the fourth most populated of these eight MSAs with nearly 400,000 residents estimated by the U.S. Census Bureau as of 2005. This makes it about the same size as the Fayetteville metro area just to the south.

Inclusion of the additional five counties of “greater Springfield” adds 154,500 more residents, for a total of 552,600 in the ten-county region. This far exceeds the Fayetteville metro area and would define greater Springfield as the 85th largest “metro area” (if it can be considered such) in the United States out of 361.⁵

2.1 EMPLOYMENT

Jobs in metropolitan Springfield totaled 247,700 in 2004 according to the U.S. Department of Commerce.⁶ This is a *total* job count, including wage and salary workers plus sole proprietors. Wage and salary workers in 2004 made up 77.5% of all metropolitan jobs, and 76.0% of the ten-county region’s jobs, each slightly lower than the state level of 80.7% and the national level of 81.6%.

The primary reason for this smaller proportion was the relatively high percentage of farming operations in the metro area which typically do not hire wage and salary workers. Farm employment made up 3.5% of



⁵ The official Springfield metro area is presently the 122nd largest in the nation.

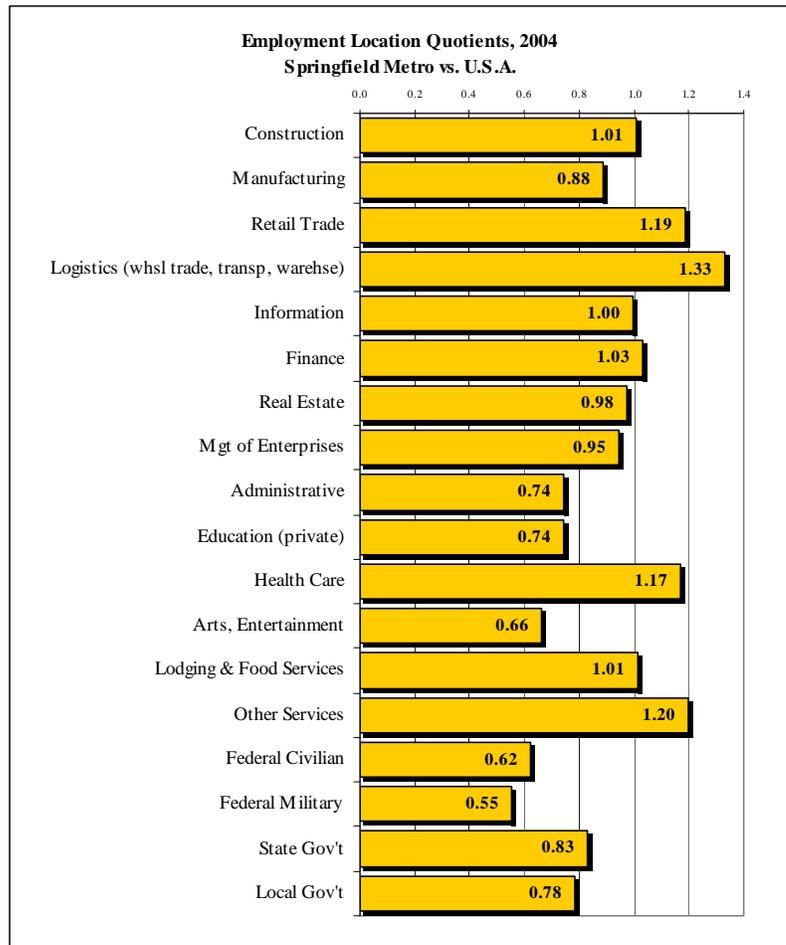
⁶ Source is the Regional Economic Information System (REIS) of the U.S. Department of Commerce, Bureau of Economic Analysis. This source is the most comprehensive data on *all* jobs as opposed to the more currently available data on non-farm wage and salary workers.

total jobs in the metro area in 2004 compared to 3.3% in the state as a whole and just 1.7% in the nation as a whole.

The logistics sector made up the third largest percentage of jobs in the Springfield metro area in 2004 (9.0%), as illustrated on the graph above. If the wholesale trade sector is separated from the transportation and warehousing sector, however, then the logistics sector would have two parts, with wholesale trade making up 4.4% of all jobs and transportation and warehousing making up 4.6%. Manufacturing then becomes the third largest sector with 7.7% of all jobs.

The largest job sector in metro Springfield is retailing with 13.1% of all jobs, followed by health care at 11.6%. The adjacent graph shows how these sectors relate to the entire United States distribution of jobs with a measurement called the *location quotient*, or “LQ.” The LQ is derived by dividing the percent of total jobs represented by a specific sector in the metro area by the percent represented by the same sector in the country as a whole.

Thus, if a certain sector employs ten percent of all jobs in an area and ten percent in the country, the area’s LQ is 1.0. LQs of greater than 1.0 typically indicate sectors that are more “export oriented” for the area, meaning that they attract more outside dollars to re-circulate in the local economy. LQs of less than 1.0 typically indicate sectors that are more “support oriented” for the region, meaning they support local needs (including support of the “export” sectors) rather than attract significant amounts of outside spending in and of themselves.⁷



The logistics sector has the largest location quotient in metro Springfield, suggesting this as Springfield’s most important single export sector. Essentially, logistics in the metro area is almost 1.33 times as important to the local economy than to the nation overall and marks Springfield as a crucial hub for the movement and distribution of goods.⁸

⁷ This is something of a simplification, of course. The federal military LQ is well under 1.0 but this doesn’t necessarily mean that it serves only the local market. Indeed, all sectors serve external markets to some degree, but a LQ greater than 1.0, like health care, indicates a relatively greater ability to attract customers or patients from outside the metro area. The military LQ of 0.55, however, suggests that Springfield sends more military dollars, in the form of taxes, to the federal government that it receives in return in the form of jobs and economic activity.

⁸ The two tracked sectors that make up logistics are quite prominent in and of themselves, too. Wholesale trade in metro Springfield has an LQ of 1.22 while the transportation and warehousing sector has an LQ of 1.46.

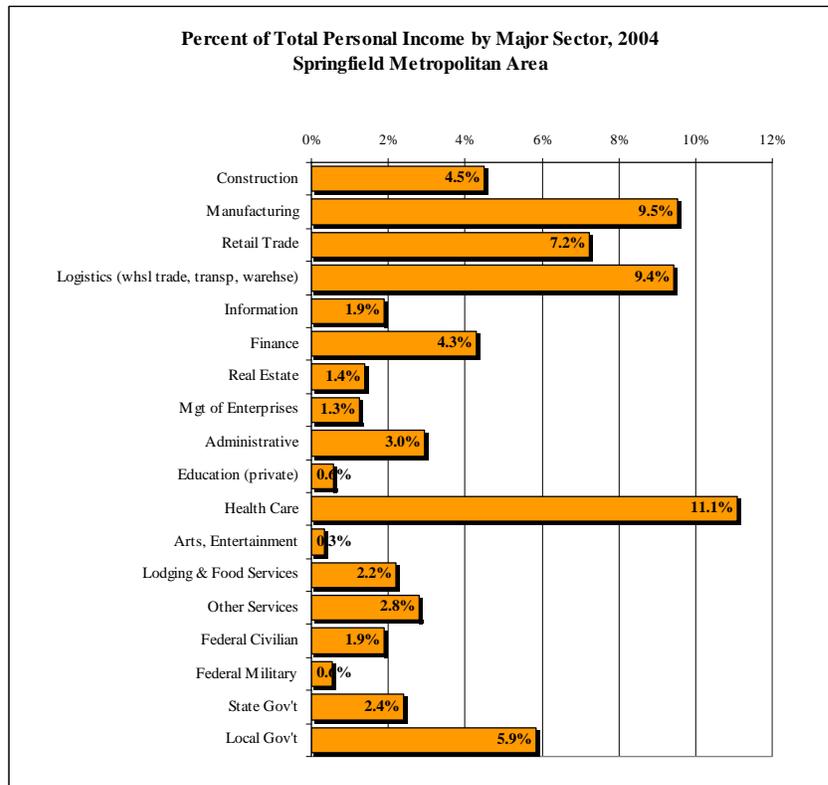
These findings broadly denote logistics as an “export sector” for metro Springfield—it generates sales far greater than the local economy alone would generate. This net export capacity adds income to the region which can then be spent and re-spent, subject to leakage, throughout the region.

2.2 PERSONAL INCOME

Using the same source of data as for employment, personal income in metro Springfield totaled almost \$10.6 billion in 2004. This is a *total* personal income, including wage and salary income plus income from all other sources like interest, dividends, and transfer payments. Income from earnings (i.e., from employment) in 2004 made up 75.9% of all income, slightly lower than the state level of 77.1% and the national level of 78.0%.

The logistics sector, when combining wholesale, transportation, and warehousing, made up the second largest percentage of personal income in the Springfield metro area in 2004 (9.5%), as

illustrated on the graph to the right, compared to the third largest percent of jobs as described earlier (7.7%).⁹



An implication of these findings is that logistics pays an above average wage. Indeed, average income per logistics worker in 2004 was \$44,600 compared to \$33,400 for the average non-farm worker in metro Springfield.¹⁰ The health care sector, which generates the greatest share of income, paid an average of \$40,800. The manufacturing sector paid the highest average wage at \$52,500.

Thus, the logistics sector is very important to the local economy as a source of good paying jobs. These workers generate a higher than average amount of spending in the Springfield economy and, thus, are very important to sustaining a higher standard of living in the region.

⁹ Manufacturing generates the second largest share of personal income if the logistics sector is broken into its two major component parts, whole trade and transportation & warehousing.

¹⁰ 2004 dollar values.

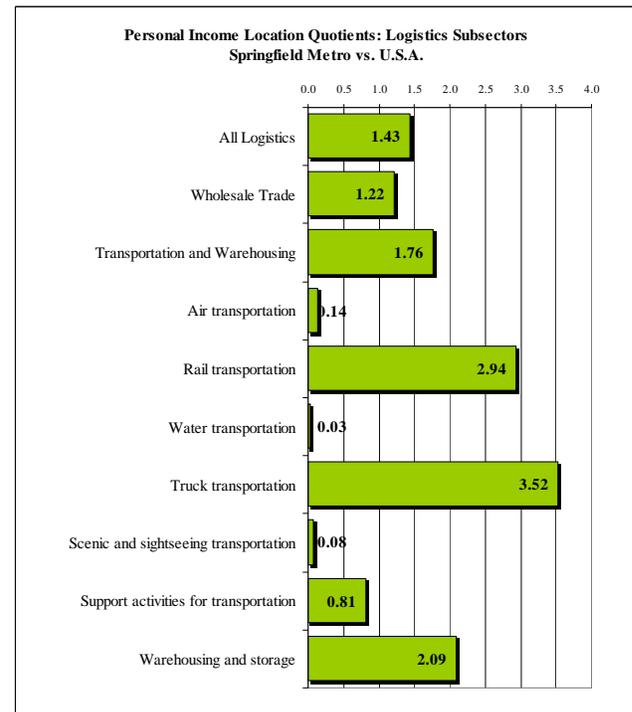
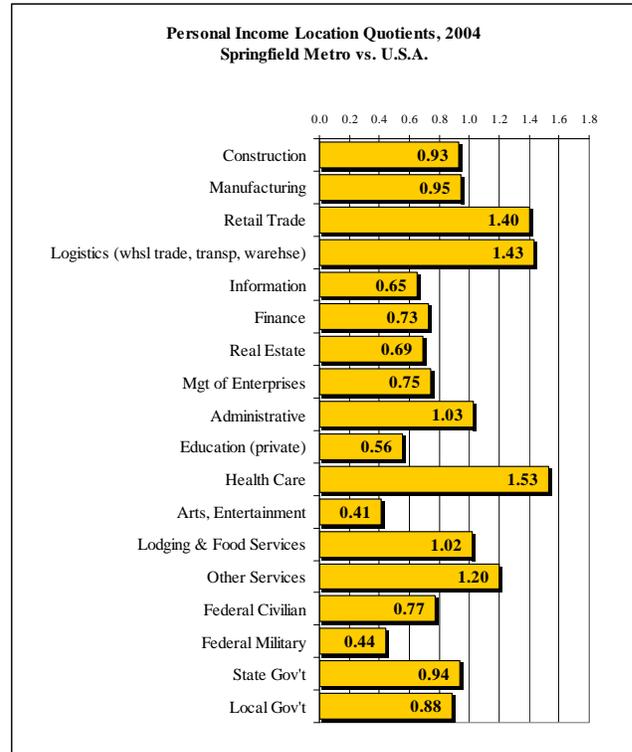
The next graph, to the right, shows the location quotients by personal income relative to the entire United States. The logistics sector has the second largest location quotient in metro Springfield,¹¹ reinforcing this as a key Springfield export sector.

Manufacturing increases its location quotient slightly from 1.33 in jobs to 1.43 in income, again reinforcing that logistics pays a relatively high wage.

But logistics' overall income LQ of 1.43 hides some important income LQs among different kinds of logistics subsectors. The other graph to the right breaks down the logistics sector by a number of its tracked subsectors. These are the subsectors for which data are available within the Springfield metro area.¹²

Again, the LQs compare the percent of the region's income generated by each subsector to the percent generated by the same sectors in the U.S. as a whole. The transportation and warehousing component has a high LQ of 1.76 while the wholesale trade component is at 1.22. Both of these, of course, are well above 1.0, signaling them as net export subsectors

Other strengths are in rail transportation (2.94), truck transportation (3.52), and warehousing and storage (2.09). All of these are quite strong location quotients that identify greater Springfield as a crucial center of such activity in the U.S. These suggest that further research might be in order to ascertain why these strong sectors, in particular, are located in Springfield and how they could be supported in order to sustain their high income jobs while leveraging related economic growth.



¹¹ One of the major components of logistics, transportation and warehousing, actually has the highest income LQ among major sectors with 1.76. The other component, wholesale trade, has an LQ of 1.22.

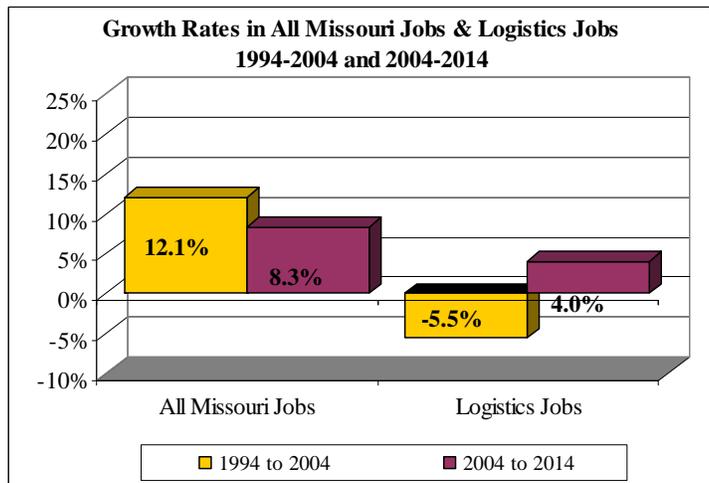
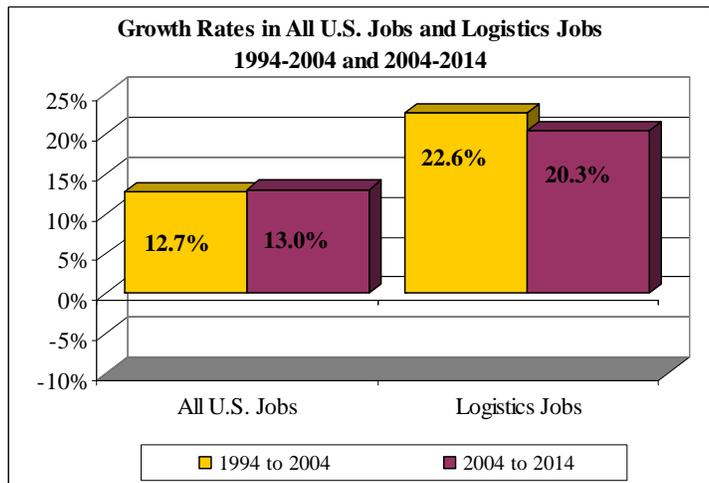
¹² Tracked data within the Regional Economic Information System focus on personal income and not employment. Thus, greater detail on economic information by sector and subsector is available for income and not for jobs.

2.3 TRENDS AND PROJECTIONS IN LOGISTICS EMPLOYMENT

NATIONAL AND STATE TRENDS

While data at smaller geographic levels can be difficult to obtain in adequate detail, national data are frequently more comprehensive. This section highlights the latest available projections of jobs in logistics for the entire United States as provided on a bi-annual basis by the U.S. Department of Labor. The latest projections cover the period 2004 to 2014 (released in early 2006). They are valuable in understanding the rate of growth expected in this sector; they do not necessarily translate to similar rates of growth in the Springfield region, but can be informative as to the potential growth and, therefore, the future impact of these sectors on the Springfield economy.

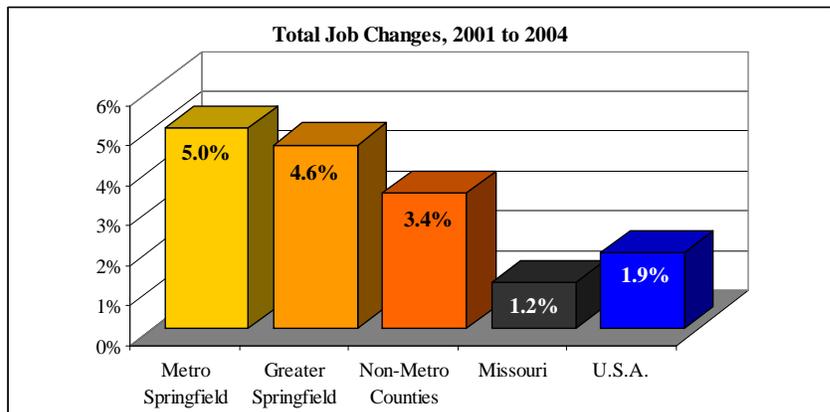
Logistics jobs in the United States are in ascent at a greater rate than jobs as a whole. The top graph to the right shows that the decade of 1994 to 2004 saw a growth rate of 12.7% in all jobs in the U.S. at the same time as the number of manufacturing jobs increased by 22.6%. Projections over the period 2004-2014 indicate a similar rate of growth for the entire economy at 13.0%, but a little slower rate of increase in logistic jobs of 20.3%.



Recently released data at the state level for Missouri are based on the 2004-2014 national projections.¹³ These figures, on the lower graph above, show that Missouri jobs as a whole expanded 12.1% between 1994 and 2004 while state logistics jobs actually decreased by about 5.5%, suggesting that Missouri is of decreasing national importance in this sector. Projections to 2014, however, indicate some growth in logistics jobs statewide, although at only about half the rate of job growth overall and only one-fifth the rate of logistics growth nationally.

SPRINGFIELD AREA TRENDS

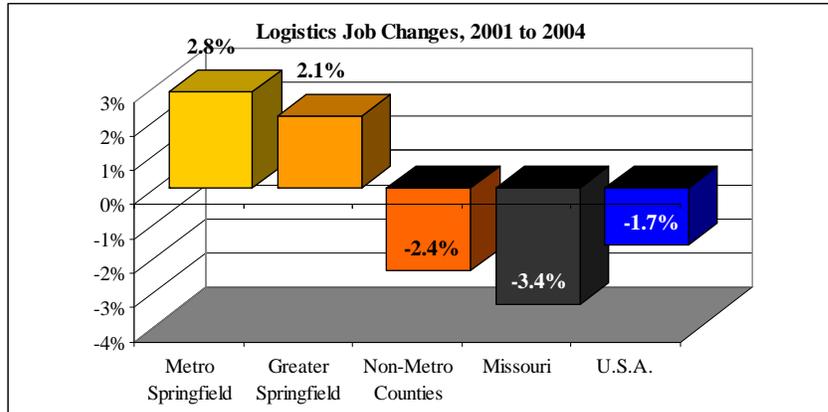
Logistics jobs in metro Springfield increased in recent years (for which the most reliable data are available). Logistics employment grew 2.8% between 2001 and



¹³ Source: Missouri Economic Research and Information Center (MERIC), 2006. http://ded.mo.gov/researchandplanning/xls/indproj_2014.xls

2004 alone. Granted, that was a period that started with a small national recession, but jobs overall in metro Springfield *increased* by 5.0% during the same time.

Still, this was better than in the entire nation. The rate of logistics job decline in the whole country during the 2001-2004 period was -1.7%, but the nation added jobs overall much more slowly than Springfield at just 1.9%. The logistics decline in all of Missouri was fairly large, at -3.4%, at the same time that overall state job growth was a positive 1.2%.



Meanwhile, the logistics sector grew more slowly in the entire 10-county Springfield region at 2.1% than in metro Springfield, and this was coupled with 4.6% growth overall in the 10 counties. This slower rate of logistics job growth was the result of a decrease of 2.4%, but overall job growth in those five counties (3.4%) was also slower than in the five counties of the metro area.

In sum, logistics jobs are losing their share of all jobs in virtually every jurisdiction, even while expanding in number in some places, albeit at different rates for different places over different time frames. Clearly, however, the Springfield region, especially inside the metropolitan area counties, is an relatively important location for logistics firms even though the region is becoming less dependent on logistics jobs. The relatively high wages paid to logistics workers, on the other hand, marks that sector, like manufacturing, as increasingly more accustomed to mechanization and information technology, thus creating more income for a slower growing job sector. But, as sectors like health care and higher education grow more rapidly, the Springfield economy is increasingly less a center for logistics jobs and increasingly more diversified and, theoretically, less vulnerable to downturns in any one major sector.

LOGISTICS OPPORTUNITIES IN THE SPRINGFIELD REGION

Still, there are opportunities in various logistics subsectors. The following graph (next page) shows U.S. job growth projection rates in the several logistics subsectors that are expected to add positions between 2004 and 2014. While logistics as a whole in the nation is projected to add jobs at a rate of more than 20% over ten years (Missouri’s growth would be four percent), some logistics subsectors will gain jobs at much faster rates and may offer opportunities for expansion or attraction in the Springfield region.

The principal gainer is expected to be in the “other ground transportation,” or means of moving goods and people in non-traditional ways that include buses, trains, and trucks. This sector would add 40% more jobs in the next ten years nationally. As the nation becomes more reliant on distributing goods, services, and people more rapidly and efficiently, the need for alternative means of transportation in the U.S. will grow strongly.

In a related fashion, job growth in urban transit systems is expected to expand as the nation’s cities continue to grow with the an expanding population and as more urban housing options are constructed in denser residential contexts. This is the same job growth anticipated for charter buses and sightseeing transportation, a reflection of the expanding tourism industry coupled with increasing expenses of driving private automobiles and an aging population.

More production and more distribution favors growth in the warehousing and storage sub-sector, the fifth highest growing subsector at 24.8% over the coming ten years. But the next two fastest growing subsectors return to transportation—non-scheduled air transport and short-distance travel in taxis and limousines. Both of these subsectors reflect Americans’ desires to “get up and go” without the burden of scheduling ahead of time.

The graph points out all the other growing logistics subsectors in the U.S. Springfield should evaluate each one relative to its own logistics companies and economic strengths to identify opportunities for targeted expansion.

MISSOURI AND OZARK REGION PROJECTIONS

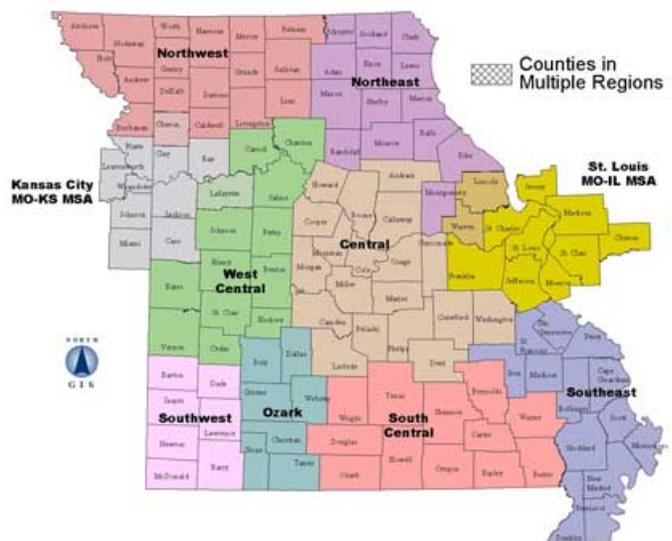
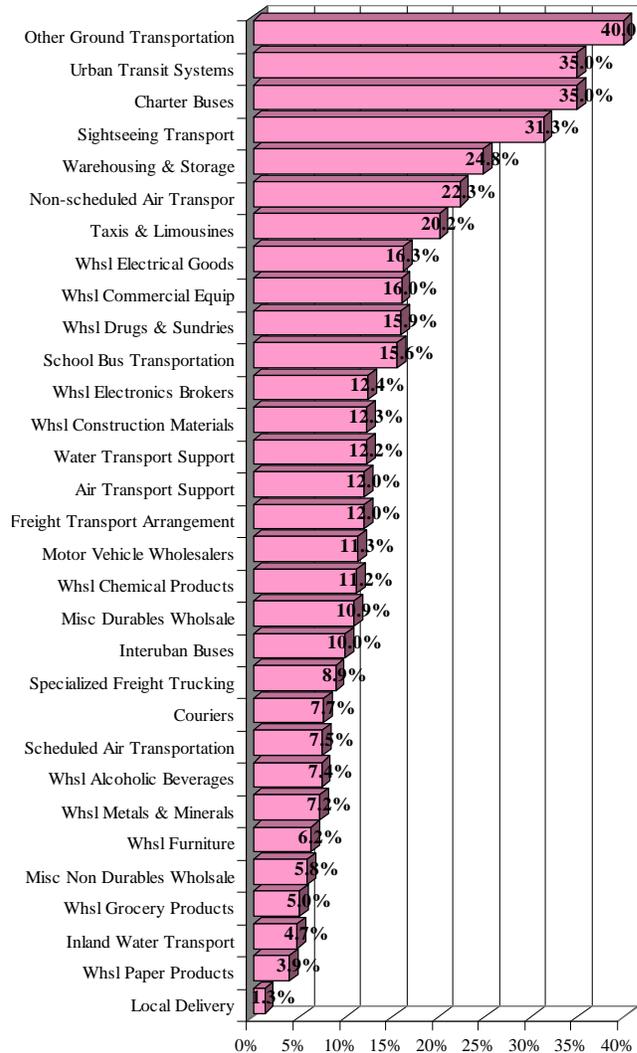
Projection data for the state and the southwest part of Missouri are not as detailed as at the national level, but the projections that are available from the Missouri Department of Economic Development (MODED) are instructive nonetheless. State projections are for the period of 2004 to 2014 because they are based on the latest national projections. But the projections for the several regions of the state, illustrated on the following state map, are for 2002-2012 because state officials have not yet completed sub-area analyses using the relatively new statewide projections.

The Ozarks region is the closest comparative area for the Springfield region, as shown on the map. It includes all five of the metropolitan area counties plus Stone and Taney Counties.

As a start, the overall 10-year rate of job growth in Missouri is projected to be 8.3%, compared to 12.1% over the prior ten-year period. The Ozark region would add 19.4% more jobs overall, over twice as rapid as the state as a whole and the fastest of the ten economic regions in the state. It is noteworthy, however, that the state growth rate projected two years for the previous ten-year projection (2002-2012) was 10.5%--faster than the subsequent ten-year projection for 2004-2014. This suggests that the Ozarks regional growth rates referenced herein, which state economic development officials based on the 2002-2012 period, may also be slightly slower over 2004-2014, but there are, as yet, no data available to make such adjustments.

Logistics jobs as a whole are projected to grow 4.0% over ten years in Missouri but to actually

Projections of Positive U.S. Job Growth Rates in Logistics Sub-Sectors 2004-2014



DEVELOPMENT STRATEGIES

increase 15.1% in the Ozark region of the state. Again, this regional projection may not be quite accurate because of the different time frames for the data. It also seems contrary to the experience in the 2001-2004 period for the ten-county greater Springfield are, as discussed earlier, where manufacturing jobs increased only 2.1%. But future growth potential appears to be much more aggressive in the Ozark region than in the state as a whole.

Notable growth rates for logistics subsectors in the Ozark region include:

- *Support activities for transportation* is a sector projected to add 450 jobs in the Ozark region over the next ten years for a growth rate of 61%. This sector is expected to grow in Missouri as a whole by 12%
- *Truck transportation* is projected to add 1,540 jobs in the Ozark region over ten years, a growth rate of 28%. In Missouri, this sector would grow by just 4.4%, suggesting the Ozark region as a focus of the state's strength in moving goods by truck.
- *General Freight Trucking*, a subset of truck transportation, is projected to 940 jobs in the Ozark region, also 28% growth, but grow just 4.4% in the entire state.
- *Air transportation* in the Ozark region is projected to grow 53% in ten years, though this would amount to only 85 more jobs, but the subsector would decline statewide by some 33%.

3.0 SURVEY OF LOGISTICS FIRMS

Partly because of the relatively few details available from standard economic statistics and partly because of a general recognition of the importance of the logistics sector in the Springfield metro area and region, a survey was conducted of the firms in this sector in order to determine more specifically their economic impacts on the Springfield region. Questionnaires were sent to 108 regional companies in transportation, warehousing, and wholesale trade based on a mailing list provided by the Springfield Area Chamber of Commerce. Eighty-eight of these (81.5%) were mailed to firms in the five-county metropolitan area. The other 20 (18.5%) were mailed to firms in the other five counties. Responses totaled 28 from these 108 for a response rate of 26%. There are too few responses from either the metro area or the non-metro area, however, to enable separate analyses for each geographic area.

Five major sets of questions were asked of each institution for the latest fiscal year:

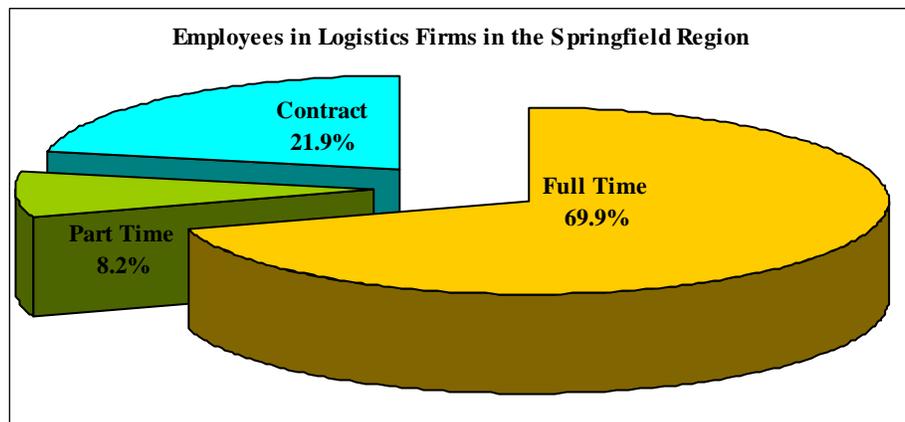
1. Employees
2. Payroll expenditures
3. Other operating expenditures
4. Capital improvements expenditures (over three fiscal years—last, current, next)
5. Annual revenues

It is the expenditures that are the key inputs to the economic impact model. Expenditures made by these firms become income to the people or businesses to which the expenditures are made. These are called “direct impacts” because they are made directly by the subject institutions. As the recipients of this income make expenditures to support their households and businesses, there are “indirect impacts” created, or multiplier effects, as these households and businesses also spend money to support their operations.

The multiplier effects triggered by the respondents to the survey are described in Section 4.0. This section focuses on the survey responses alone in order to better understand the scale and economic importance of the two sectors as represented by the ten respondents. The responses were further compared to published data in the U.S. Department of Commerce’s annual “County Business Patterns” to determine if the respondents are representative of the entire census of logistics firms in the region.

3.1 NUMBERS OF EMPLOYEES

Employment is an important indicator of the economic scale of individual companies and a sector of the economy. More employees means a larger business firm and, therefore, larger operating and personnel expenditures to support the Springfield regional economy.



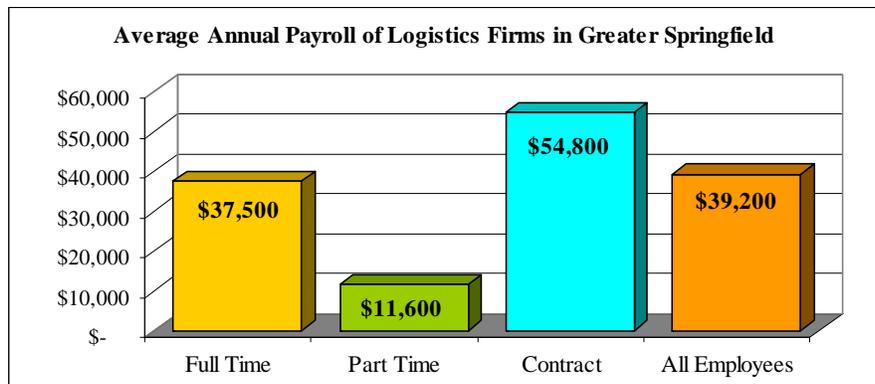
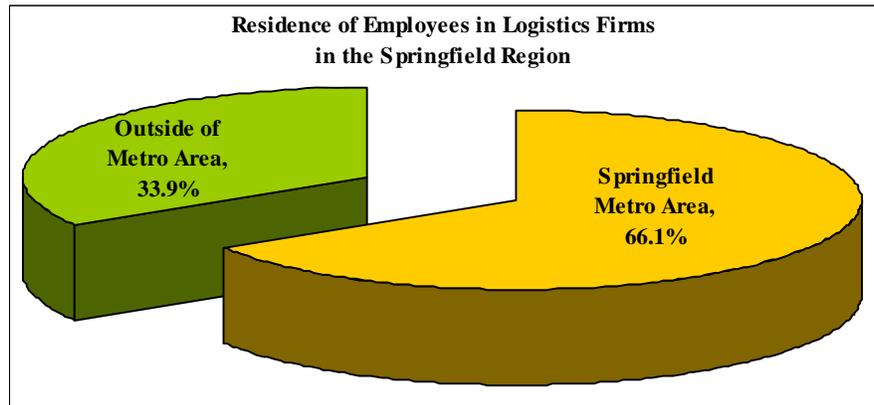
Full time, part time/seasonal, and contract employees total 1,386 at the respondent firms with a range from 10 to 104. Seven out of ten (69.9%)

work full time while just over a fifth (21.9%) work part time. The remaining 8.2% of logistics workers are considered contract employees, all of them from this survey with trucking firms.

Two thirds (66.1%) of these employees are residents of the five-county Springfield metropolitan area. The other 33.9% reside outside the metro area.

3.2 PAYROLL

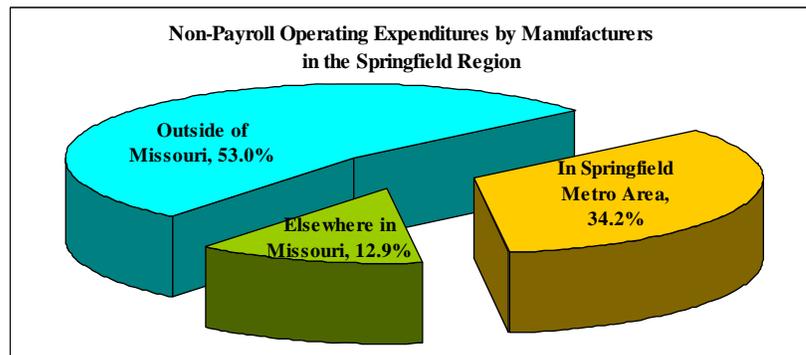
Twenty-four of the 28 responding logistics firms provided information on their payroll expenditures. These 24, however, represent 97.1% of all employees, so the payroll data are considered reliable for this survey. Total payroll for the 1,346 employees represented in the sample was \$74.2 million in the last fiscal year. The overall average wage or salary at these 24 firms, therefore, was about \$39,200.¹⁴



Full time employees average \$37,500 in wages and salaries per year, part timers average just \$11,600, and contract employees average \$54,800.

3.3 NON-PAYROLL OPERATING EXPENDITURES

Payroll expenditures for employees are critical triggers to the regional economy because they provide the resources for employees to support their households. But business firms also have non-payroll expenditures to support their operations, some of which they spend directly in the regional economy to trigger even more multiplier effects.



The 24 logistics firms reporting financial information indicate that, collectively, they spend about \$158.24 million annually to support their operations outside of payroll costs (which are themselves, \$74.2 million, as discussed earlier). One-third (34.2%) of these expenses take place within the metropolitan area, thus immediately triggering re-spending

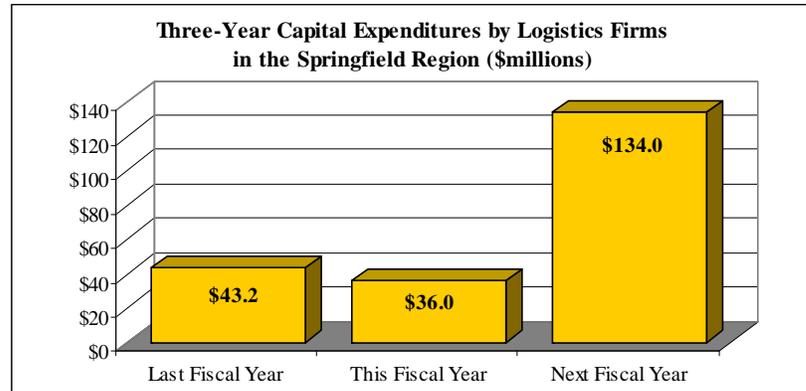
¹⁴ Average payroll for logistics firms in the ten-county region obtained from the U.S. Census Bureau's *County Business Patterns* for 2004 was \$33,200, so the survey respondents are markedly higher.

effects in the metro economy. Another one-eights (12.9%) is spent elsewhere in Missouri, while half of such dollars (53.0%) are initially spent outside the state.

Operating expenditures per employee of the 84 responding logistics firms average \$117,500 per year, although the range is from \$14,000 to \$1,000,000. The median is much higher than the average at \$94,000 per employee.

3.4 CAPITAL EXPENDITURES

Capital expenditures for long-term physical improvements to property and equipment are important components of any business organization. Capital expenditures, of course, also trigger multiplier impacts in the economy to the extent to which the money is spent locally. For the economic impact survey, respondents were asked to provide their capital expenditures for their current fiscal year as well as for the prior and the next fiscal years.



Eighteen of the 28 responding logistics firms reported capital improvements spending for at least one of the three years requested. Together, these 18 spent some \$43.2 million in the last fiscal year and are spending a little less at \$36.0 million this fiscal year. They anticipate spending quite a lot more, however, next fiscal year at \$134.0 million. The vast majority of the capital expenditures are for updated equipment, notably vehicles but also computerized machinery.

Taken together for the three years, the \$213.2 million in capital spending by the 18 firms represents about \$167,000 per employee. Also using the three year spending of \$213.2 million, this is equivalent to \$1.00 in capital expenditures over three years for every dollar in current payroll and operations expenditures—or about 33¢ per year per dollar in other expenses.

3.5 ANNUAL REVENUES

While revenues are not necessarily important in determine multiplier effects (it's the spending that triggers further spending), revenues are obviously necessary in order to have the resources to spend. All of the 28 respondents provided current annual revenues for a total of \$273.2 million. This is an average of \$9.7 million per firm with a median of \$8.2 million. Average revenues per employee are \$197,100 per year.

Aggregated revenues of \$261.2 million for firms reporting operating expenses compare to \$212.5 million in reported operating expenditures for both payroll and other costs. This yields net operating income of \$48.8 million, or about \$2.0 million per firm in the course of an average year.

4.0 MULTIPLIER ECONOMIC IMPACTS OF LOGISTICS FIRMS

Economic impacts from a quantitative perspective are determined by multiplying the annual spending of the logistics firms by a set of multipliers that determine three primary impacts:

1. The **increase in economic activity**, or “gross domestic product,” triggered by the spending of the subject companies. This is called the “output” multiplier.
2. The **increase in personal income** for Springfield area households that results from spending and re-spending of dollars in the metro economy. This is called the “earnings” multiplier.
3. The **increase in jobs in the metro economy** supported by the multiplier effects that are triggered by the companies. This is called the “employment” multiplier.

Because the survey results described in Section 3.0 cover relatively few of the firms in the logistics sector of the Springfield region, this multiplier analysis applies the latest data from the U.S. Census Bureau in its annual report, *County Business Patterns* (CBP), for the year 2004. The survey helps to identify certain patterns within the logistics sector but the extent of that coverage is well below the amounts documented by CBP. For instance, the mailing list generated for the survey contained 108 firms (or “establishments” in the parlance of CBP), while CBP encompasses 1,319 establishments in the logistics sector (combination of wholesale trade with transportation and warehousing).

Moreover, the average payroll of the respondents to the survey is \$2,262,000 per firm while the average from CBP is about one fourth that amount, or \$518,500. Thus, extrapolating the results of the survey to the entire logistics sector would likely overstate the sector’s economic impact by a substantial amount. Still, this report uses some of the financial ratios that resulted from the survey. CBP does not provide data on overall expenditures or capital expenditures, for instance; it only provides annual payroll and employment by major sector. So this report applies ratios of operating expenditures to payroll from the survey to the CBP data in order to estimate operating expenditures in all logistics firms covered by CBP. The same is done with capital expenditures.

Table 4-1 shows the results of the multiplier effects on the five-county metropolitan area; these results are described below. Equivalent results for the larger, 10-county Springfield region are shown on Table 4-2.

- The numbers across the top of Table 4-1 reflect the spending data as described above. That is, using CBP data, the logistics sector spends \$996.7 million per year on employee compensation (i.e., payroll).
 - Using a ratio from the survey of \$2.91 in non-payroll operating expenditures for every \$1.00 in payroll, the estimated annual non-payroll expenditures by all logistics firms in metro Springfield totals \$2,903.1 million.
 - Using a ratio from the survey of \$1.31 in annualized capital expenditures for every \$1.00 in payroll, the estimated annual capital expenditures by all logistics firms in metro Springfield totals \$1,304.7 million.
- The next set of numbers includes the three multipliers for each of the spending categories.
 - Multipliers for capital improvements are assumed equivalent to the multipliers for the “construction” industry in metro Springfield. For instance, capital expenditures of \$1,304.7million are multiplied by 1.98 to determine the output impact on the Springfield metro economy caused by capital spending.
 - Multipliers for operational expenditures are weighted for seven subsectors of the logistics sector. The weighting is based on the share of personal earnings generated by and within each of the subsectors. The personal earnings were obtained from the U.S. Bureau of Economic Analysis from the *Regional Economic Information System* (REIS).

- Multipliers for payroll expenditures are those for the “household” sector in greater Springfield because payroll is directly inserted into the Springfield economy by employee households.
- The total multipliers are weighted averages of the above based on actual impacts.
- The third set of numbers constitutes the overall economic impacts for each spending category. These impacts are then summed to determine overall annual impacts triggered by the logistics sector.
 - Overall spending of \$5,204.4 million by logistics firms increases economic output in the metropolitan area by \$9,104.1 million each year in addition to the direct spending by the companies.
 - As a result of the direct spending of \$5,204.4 million per year, earnings of metro Springfield households increase by \$2,669.0 million in addition to the direct payroll amounts for employees of the logistics firms.
 - Total spending of \$5,204.4 million and its ripple effects through the metro economy supports 76,540 jobs (full and part time) in addition to the 20,600 positions at the 1,319 logistics firms in the region (the latter based on *County Business Patterns*).

Table 4-1: Annual Economic Impact of Logistics Firms on the Springfield Metropolitan Area				
(millions of current dollars)				
	Capital Im- provements	Operating Expenditures	Employee Compensation	Total
	\$1,304.7	\$2,903.1	\$996.7	\$5,204.4
Multipliers				
Output	1.98	1.84	1.17	1.75
Earnings	0.62	0.53	0.33	0.51
Employment	18.6	13.8	12.2	18.9
ECONOMIC IMPACT ON 10-COUNTY REGIONAL ECONOMY				
Output	\$2,589.1	\$5,346.6	\$1,168.3	\$9,104.1
Earnings	\$808.8	\$1,530.8	\$329.4	\$2,669.0
Employment (weighted an- nual average jobs)	24,310	40,050	12,180	76,540
Multiplier Definitions:				
Output:	Total dollar change in the metro economy due to expenditures by all logistics firms in the Springfield metropolitan area.			
Earnings:	Total dollar change in earnings of households in the Springfield metropolitan area economy due to expenditures by firms in the logistics sector.			
Employment:	Total change in the number of jobs in the Springfield metropolitan area economy per \$1,000,000 of spending by all firms in the logistics sector.			

Table 4-2: Annual Economic Impact of Logistics Firms on the 10-County Springfield Region (millions of current dollars)				
	Capital Improvements	Operating Expenditures	Employee Compensation	Total
	\$1,432.8	\$3,188.1	\$1,094.5	\$5,715.3
Multipliers				
Output	2.05	1.91	1.24	1.81
Earnings	0.67	0.57	0.36	0.51
Employment	18.8	15.2	12.4	18.9
ECONOMIC IMPACT ON 10-COUNTY REGIONAL ECONOMY				
Output	\$2,940.9	\$6,074.4	\$1,356.3	\$10,371.6
Earnings	\$961.4	\$1,823.0	\$390.5	\$3,175.0
Employment (weighted annual average jobs)	26,950	48,390	13,540	88,880
Multiplier Definitions:				
Output:	Total dollar change in the regional economy due to expenditures by all firms in the logistics sector in the ten-county Springfield region.			
Earnings:	Total dollar change in earnings of households in the 10-county Springfield regional economy due to expenditures by firms in the logistics sector.			
Employment:	Total change in the number of jobs in the 10-county Springfield regional economy per \$1,000,000 of spending by all firms in the logistics sector			

APPENDIX A: LARGEST EMPLOYERS IN SPRINGFIELD METRO AREA

1	CoxHealth	health care	8,815
2	St. John's Health System	health care	8,000
3	Wal-Mart Stores	retail	4,120
4	Springfield Public Schools	education	3,000
5	Bass Pro Shops / Tracker Marine	headquarters	2,615
6	United States Government	government	2,540
7	State of Missouri	government	2,385
8	Missouri State University	education	2,130
9	Chase Card Services	customer service	1,595
10	Citizens Memorial Healthcare	health care	1,580
11	City of Springfield	government	1,535
12	O'Reilly Auto Parts	headquarters	1,500
13	General Council of the Assemblies of God	headquarters	1,140
14	Kraft Foods	manufacturing	1,120
15	Burlington Northern Santa Fe Railroad	transportation	1,050
16	City Utilities of Springfield	utility	965
17	Hutchens Industries	manufacturing	950
18	Willow Brook Foods	manufacturing	850
19	SRC Holdings	manufacturing	800
20	Associated Wholesale Grocers	distribution	790
21	American National Property & Casualty	insurance	780
22	Loren Cook Company	manufacturing	725
23	Paul Mueller Company	manufacturing	715
24	Greene County	government	675
25	Prime	transportation	675
26	Great Southern Bank	finance	595
27	Republic R-3 School District	education	570
28	Ozark R-6 School District	education	560
29	Doctors Hospital of Springfield	health care	550
30	Regal-Beloit (formerly General Electric)	manufacturing	530
31	Nixa R-2 School District	education	555
32	AT&T (formerly SBC)	communications	500
33	Carlisle Power Transmission (formerly Dayco)	manufacturing	500
34	Burrell Behavioral Health (affiliate of CoxHealth)	health care	500
35	Aaron's Automotive / PROformance	manufacturing	490

ECONOMIC IMPACT OF TRANSPORTATION, WAREHOUSING & WHOLESALE TRADE

36	Positronic Industries	manufacturing	480
37	Lowe's Stores	retail	475
38	Drury University	education	460
39	MCI Worldcom	call center	420
40	Dillons Food Stores	retail	405
41	Ozarks Technical Community College	education	380
42	Northrop Grumman Interconnect Technologies	manufacturing	365
43	Bolivar R-1 School District	education	355
44	John Q. Hammons Company	headquarters	350
45	Reckitt Benckiser	manufacturing	335
46	Springfield News-Leader	publishing	320
47	Solo Cup	manufacturing	315
48	Southwest Baptist University	education	310
49	Logan-Rogersville R-8 School District	education	300

SOURCE: Springfield Area Chamber of Commerce, December 2005. Numbers may vary from findings of this report because of different data collection techniques and because the Chamber of Commerce converts all employment to "full time equivalent" (FTE) while the survey results from the report do not.



APPENDIX B: QUESTIONNAIRE SENT TO LOGISTICS FIRMS

ECONOMIC IMPACT SURVEY: LOGISTICS

We request your assistance in an important research effort that will help the Springfield Area to better understand the value of logistics firms—those in transportation, warehousing, and wholesale trade sectors—in the Springfield regional economy. So that we can better support the continued growth of these sectors, the City of Springfield and the Springfield Area Chamber of Commerce are working together to document the economic impacts and contributions of our logistics establishments. We are working with a private economic research firm, Development Strategies, to perform the analysis.

To accomplish this, we need your help. The accompanying questionnaire requests information about your company’s employment, operations, and capital spending in the Springfield area. These numbers are the critical inputs to the economic impact model, which will calculate direct and multiplier effects on (1) logistics’ contribution to the “gross regional product;” (2) the amount of additional income for Springfield area households that the entire sector creates; and (3) the number of jobs that logistics supports both directly and indirectly.

We understand that the information we are requesting is sensitive, and we assure you that it will be held in strictest confidence; only our consultants will have access to the individual responses and **neither they nor we will not release any information for an individual firm**. The survey results will be combined and only aggregate data will serve as the foundation for the economic impact analysis.

One of the important areas that the survey explores is how much that your company spends directly in the greater Springfield area (see map on the next page) versus being spent outside of the area. We realize that you may not track your activities in this way, but **ask for your best estimate** – either as a dollar value or a percentage of the total. The breakdown of local versus non-local spending is very important to an accurate determination of the local economic impact.

We appreciate your completing the survey and returning it, via postage-paid U.S. mail, **by November 15th**. Just fold it in half and tape it closed as shown on the back page. If you have any questions about the survey or the larger research effort, please do not hesitate to call Ryan Mooney at the Chamber of Commerce (417-862-5567) or Bob Lewis of Development Strategies (314-421-2800). We will be glad to share the results of the analysis with you when the process is complete.

Thank you very much for your help.

Springfield Area Chamber of Commerce
202 S. John Q. Hammons Parkway, Springfield, MO 65806
Phone: (417) 862-5567
www.springfieldchamber.com

DEVELOPMENT STRATEGIES, INC.
10 South Broadway, St. Louis, MO 63102
Phone: (314) 421-2800
www.development-strategies.com

ECONOMIC IMPACT SURVEY

Transportation, Warehouse & Wholesale Trade Firms in the Greater Springfield Area

Person completing this survey (optional):

Company (optional):

Contact information (to call for clarification of responses, if necessary)

Phone: ()

Email: _____



Please describe your service(s) or provide your NAICS or SIC code:

Brief Product Description: _____

NAICS Code: _____

OR. . . SIC Code: _____

EMPLOYEES & PAYROLL

Number of employees and related payroll expenses at your Springfield area location(s) in last fiscal year:

	Number	Percent who reside in Greater Springfield	Total Annual Payroll
Full time employees		%	\$
Part time or seasonal employees		%	\$
Contract employees		%	\$

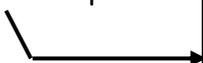
ALL OTHER OPERATING EXPENDITURES (excluding payroll & capital improvements)

Total annual expenses in last completed fiscal year <i>excluding payroll and capital improvements</i>	\$		
	Percent expended in . . .		
	Greater Springfield	Other Missouri	Outside of Missouri
	%	%	%

CAPITAL IMPROVEMENTS SPENDING

Total Spent on Major Capital Improvements (over \$10,000) per year

Include construction, renovation, equipment, etc.

	Last Fiscal Year	This Fiscal Year	Next Fiscal Year
Amount	\$	\$	\$
Brief Descriptions 			

TOTAL REVENUES

Total annual revenues in last completed fiscal year	\$
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Thank you very much! Please fold and tape closed, then drop it in the U.S. Mail. If you provided contact information, we will call you or send an email to acknowledge when we receive the questionnaire. And we will provide you with summary results of the survey.

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