

# Industrial and Employment Composition and their Impact on Taxable Sales in St. Louis

David M. Mitchell  
Bureau of Economic Research  
Dept. of Economics  
Missouri State University

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# Is it Always a Good Idea to Spur Job Growth?

- Lots of studies in economics literature that examine this question from a variety of issues
- Types of Jobs
- Location of Jobs
- Earning of New Job Holders
- Commuting Patterns of Job Holders
- Regional/Local Productivity Differences
- Etc.

# Are Jobs Good for the Local Government?

- Example: South Carolina, North Carolina, and Alabama compete for a Mercedes-Benz plant in the 1990's.....Alabama Wins
- Analysts estimate that the value of the incentives to bring the plant to Alabama were between \$100 to \$250 million
- Included in that figure was a \$35 million by Tuscaloosa County and the city of Birmingham officials to buy land and build the plant
- Will these local governments ever get their money back? i.e., will the investment pay off?

## An Alternate View of the Problem

- Susan lives in a large metropolitan area
- She lives in County A and works in County B
- She loses her job in County B, but finds another one in County C.
- Employment data will show a one job increase in County C, a one job decrease in County B, and no change in County A.
- But if Susan spends most of her money in county A, close to home, is County C better off and is County B worse off?

- We can combine LED data with taxable sales data to try and answer this question (and many other questions like it)
- This study is of the City of St. Louis and its surrounding counties
- Employment locations along with sales tax data is mapped to determine which is more important for taxable sales---where people work or where they live?

- OTM (On The Map) breaks down employment into three categories: Goods Producing; Trade, Transportation, and Utilities; and Other Services
- It also breaks down data along income and age levels
- Gives precise, census block, locations of where people work and is able to trace those jobs back to where people live.
- All in all a great resource for analysis!

# Goods Producing Industries

- NAICS codes
- 11 Agriculture, Forestry, Fishing and Hunting
- 21 Mining, Quarrying, and Oil/Gas Extraction
- 23 Construction
- 31-33 Manufacturing

# All Other Services

- 51 Information
- 52-53 FIRE
- 54 Professional, Scientific, and Technical Services
- 55 Management
- 56 Administrative and Support
- 61 Education
- 62 Health Care
- 71 Arts, Entertainment, Recreation
- 72 Accommodation and Food Services
- 81 Other Services
- 92 Public Administration



# Trade Transportation and Utilities

- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 22 Utilities

# The United States Midwest



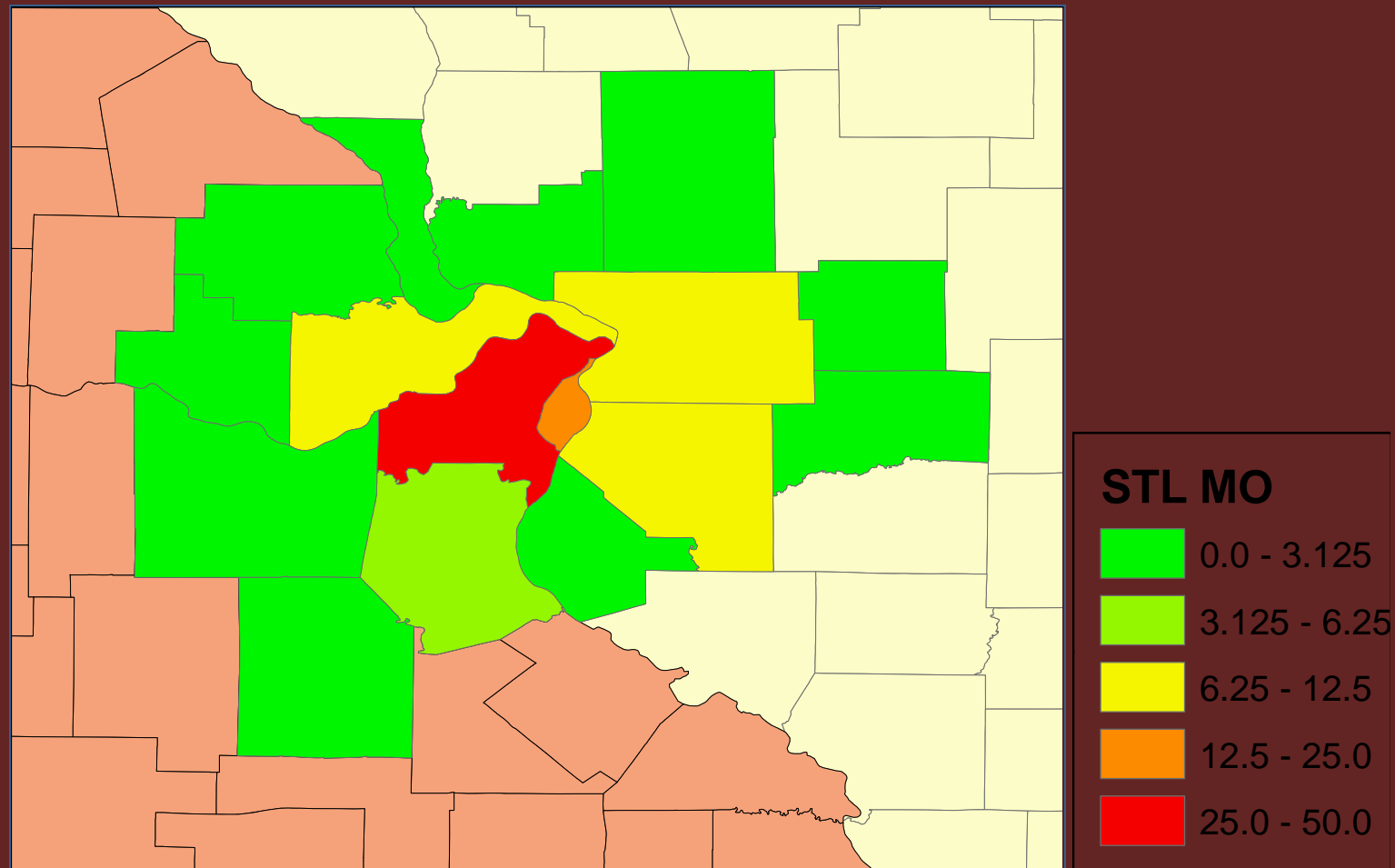
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## St. Louis MSA-- Characteristics in Brief

- Consists of the city of St. Louis plus 15 other counties—7 in Missouri and 8 in Illinois
- Total population of MSA is 2,816,710 and is 8,843 sq miles
- Population in City of St. Louis (STL) is 354,361 over 66 square miles
- Population in Missouri (excluding STL) is 1,768,351 over 4,551 square miles
- Population in Illinois is 693,998 over 4,226 square miles

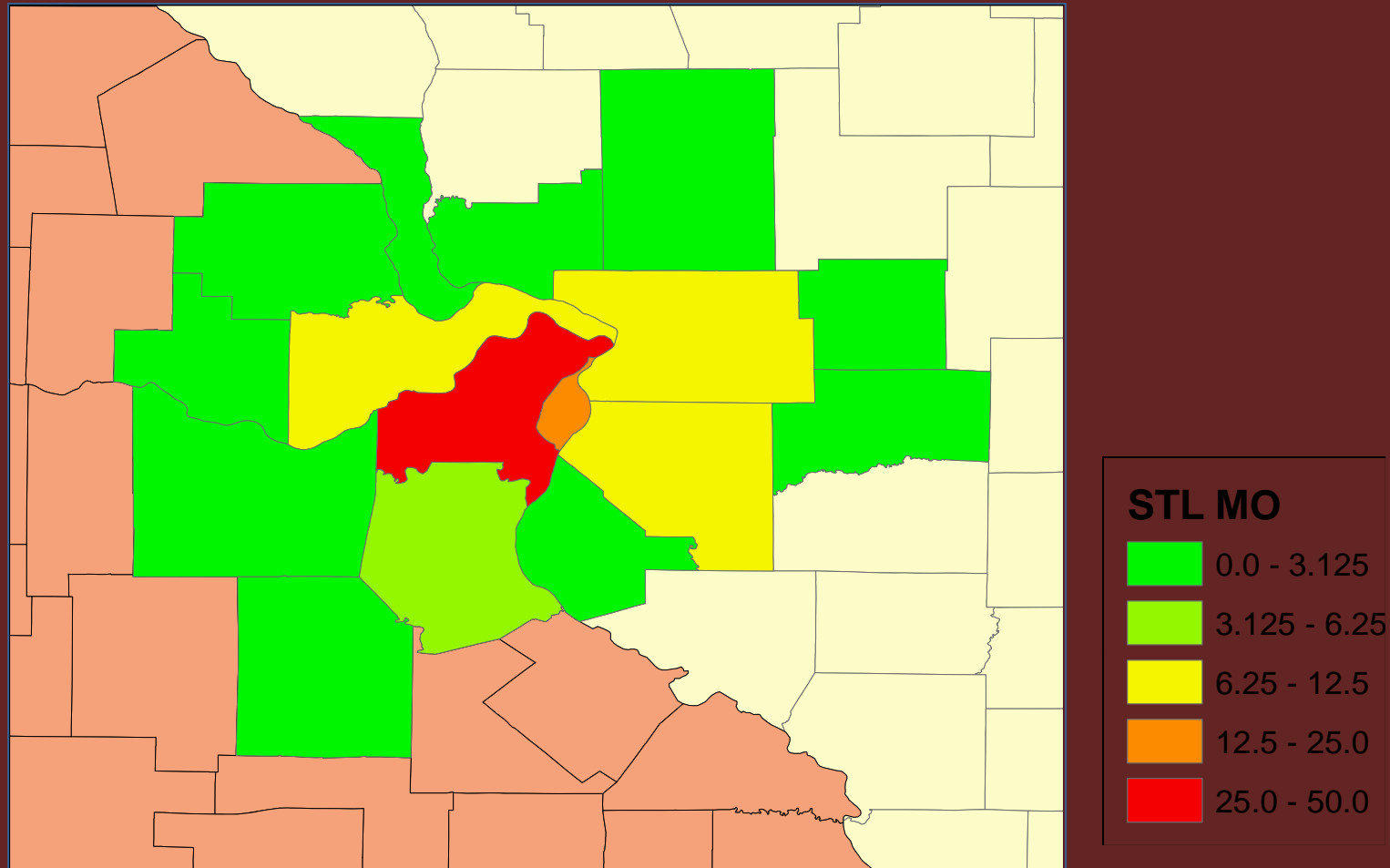
# Population Distribution of the St. Louis MSA (Percent of the MO-IL Population)



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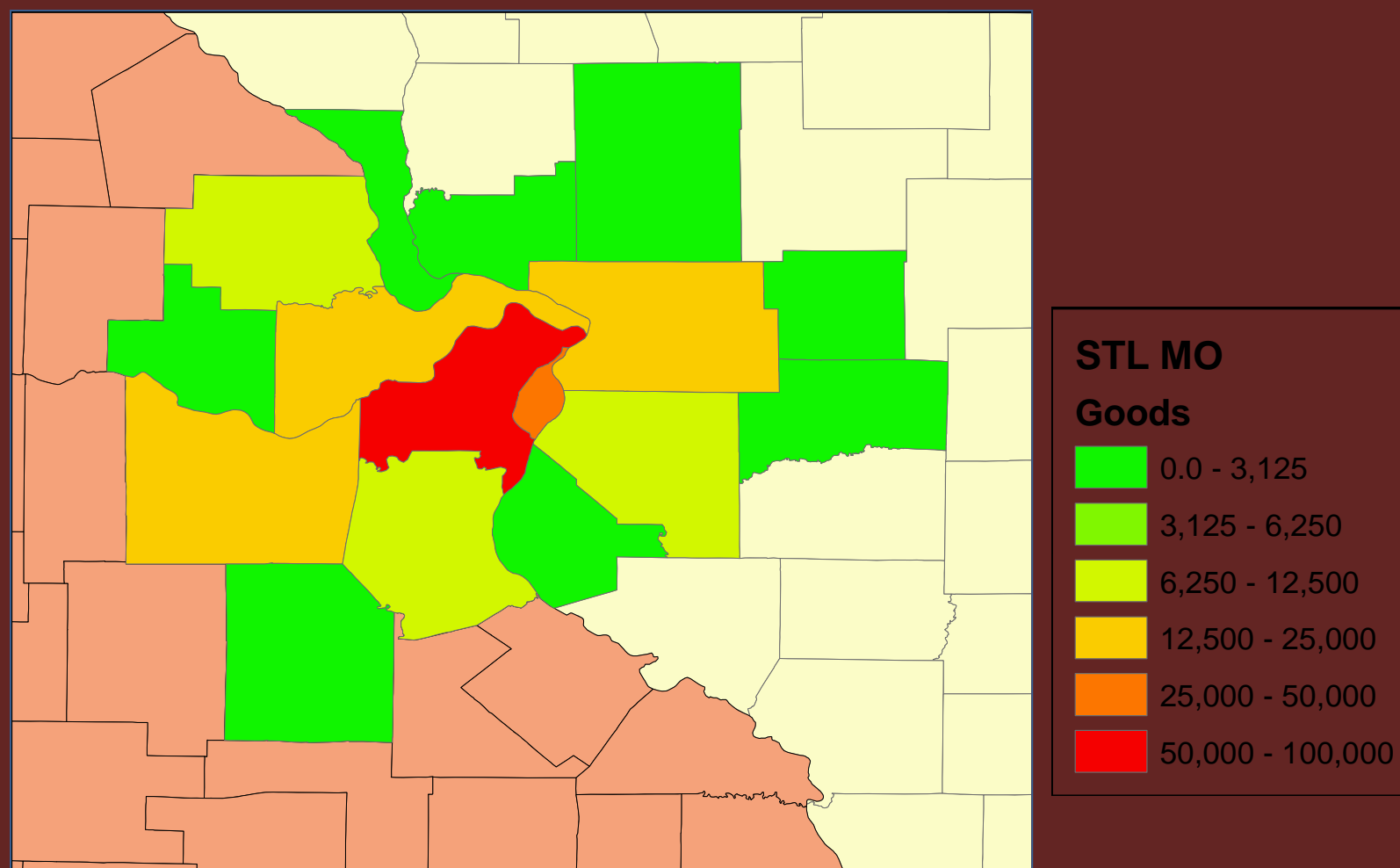
# Distribution of Employment in the St. Louis MSA (Percent of the MO-IL Population)



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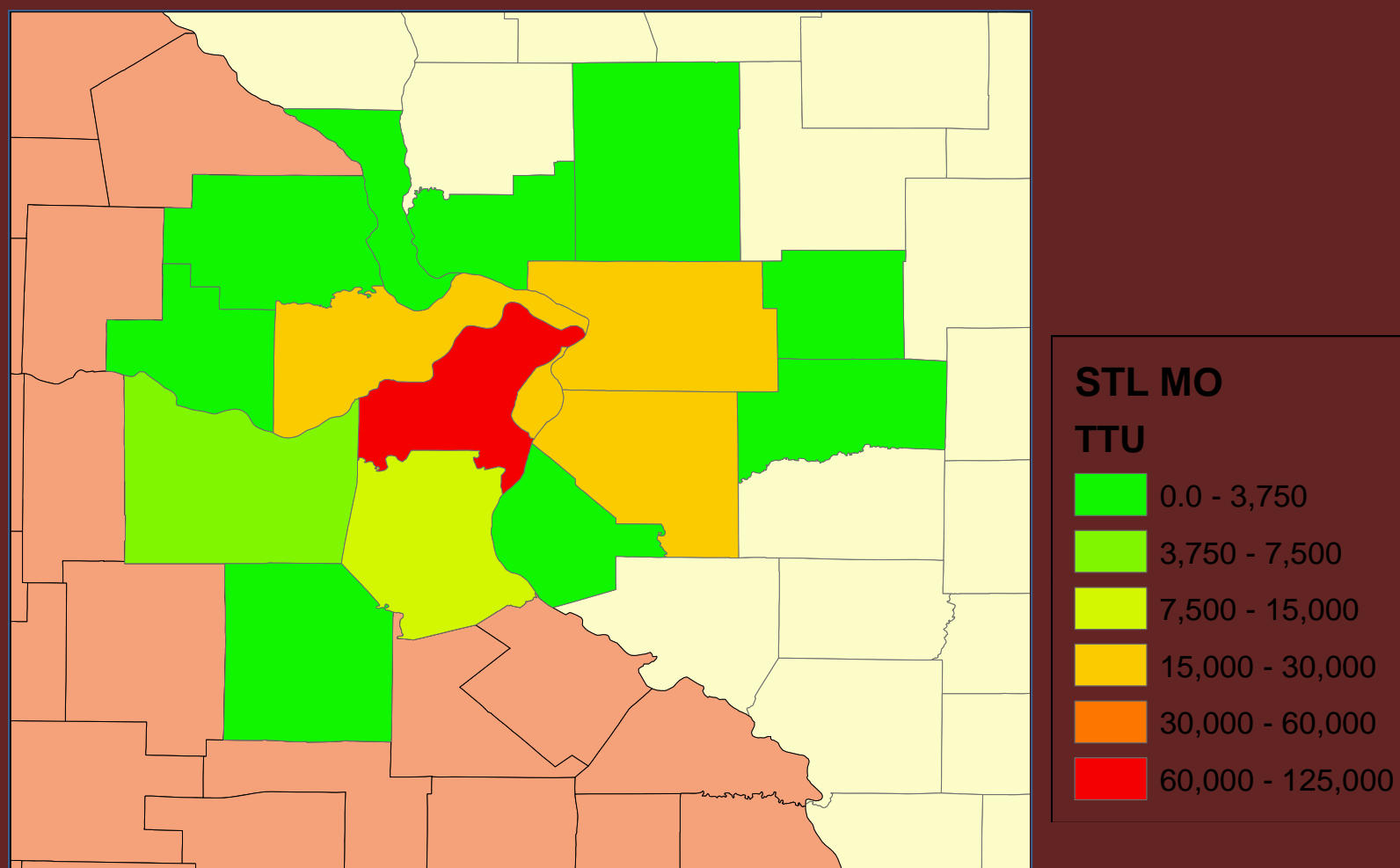
# Distribution of Goods Producing Employment in the St. Louis MSA



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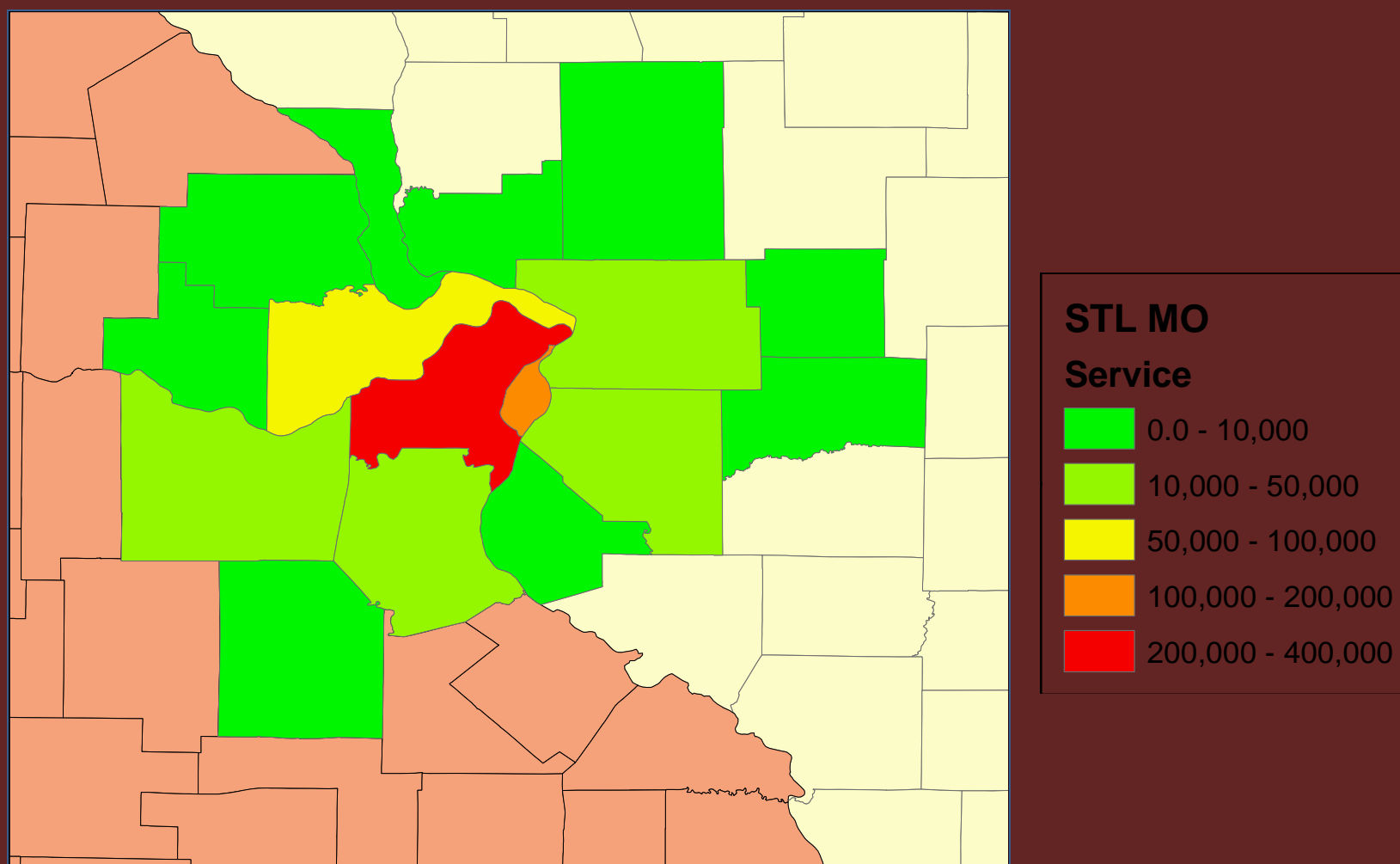
# Distribution of TTU Employment in the St. Louis MSA



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# Distribution of Services Employment in the St. Louis MSA

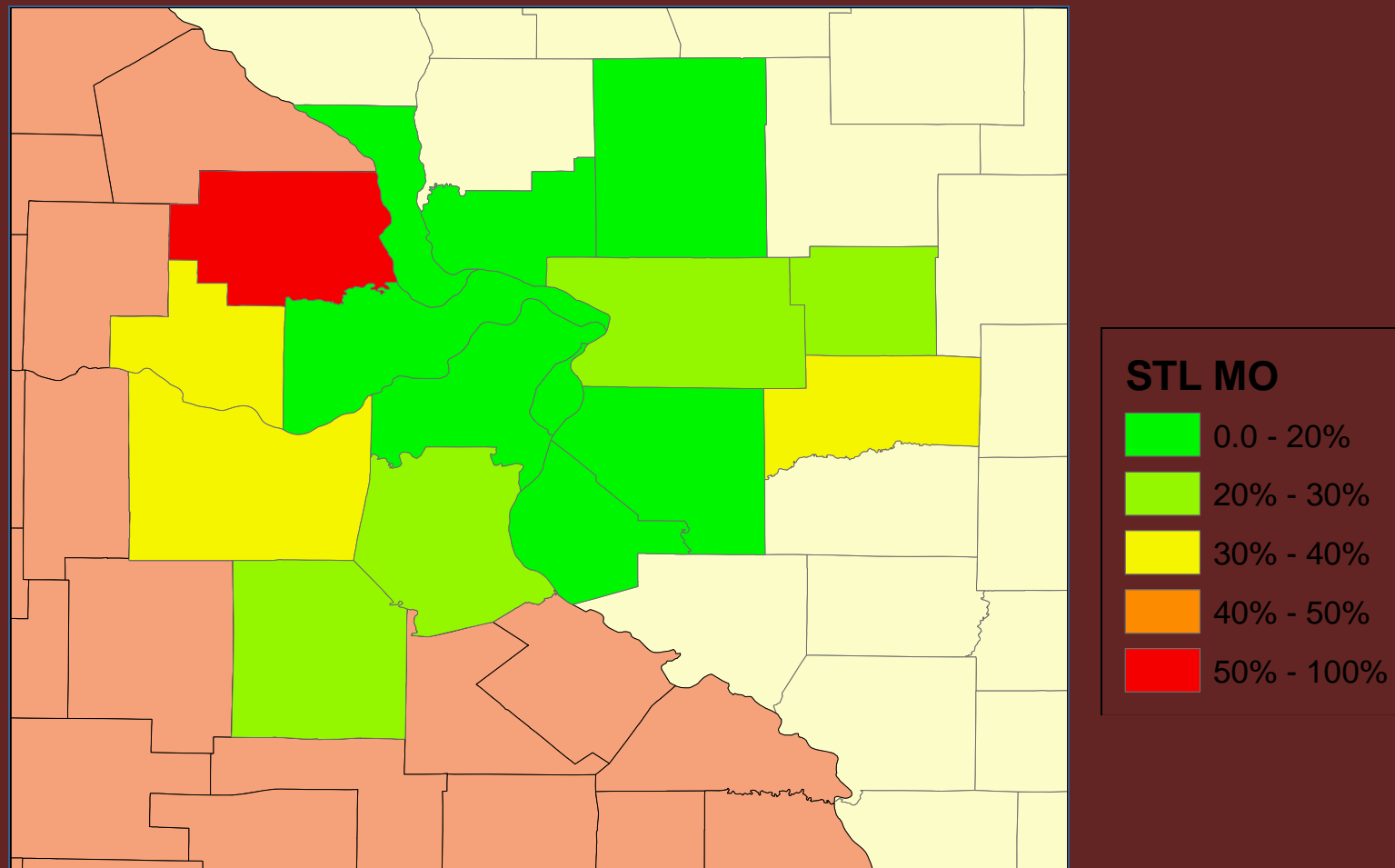


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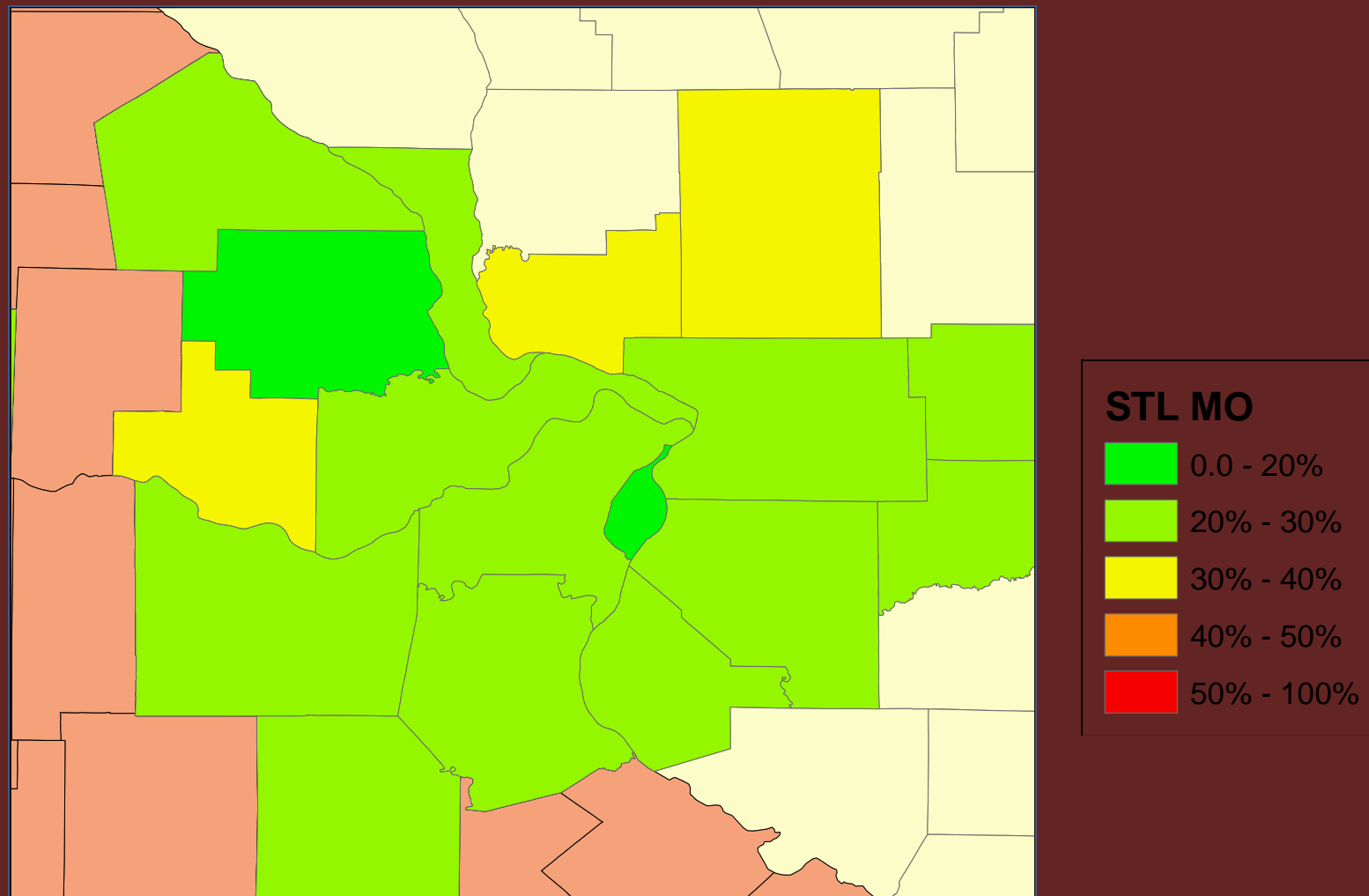
# Proportion of Goods Producing Employment to County Employment in the St. Louis MSA



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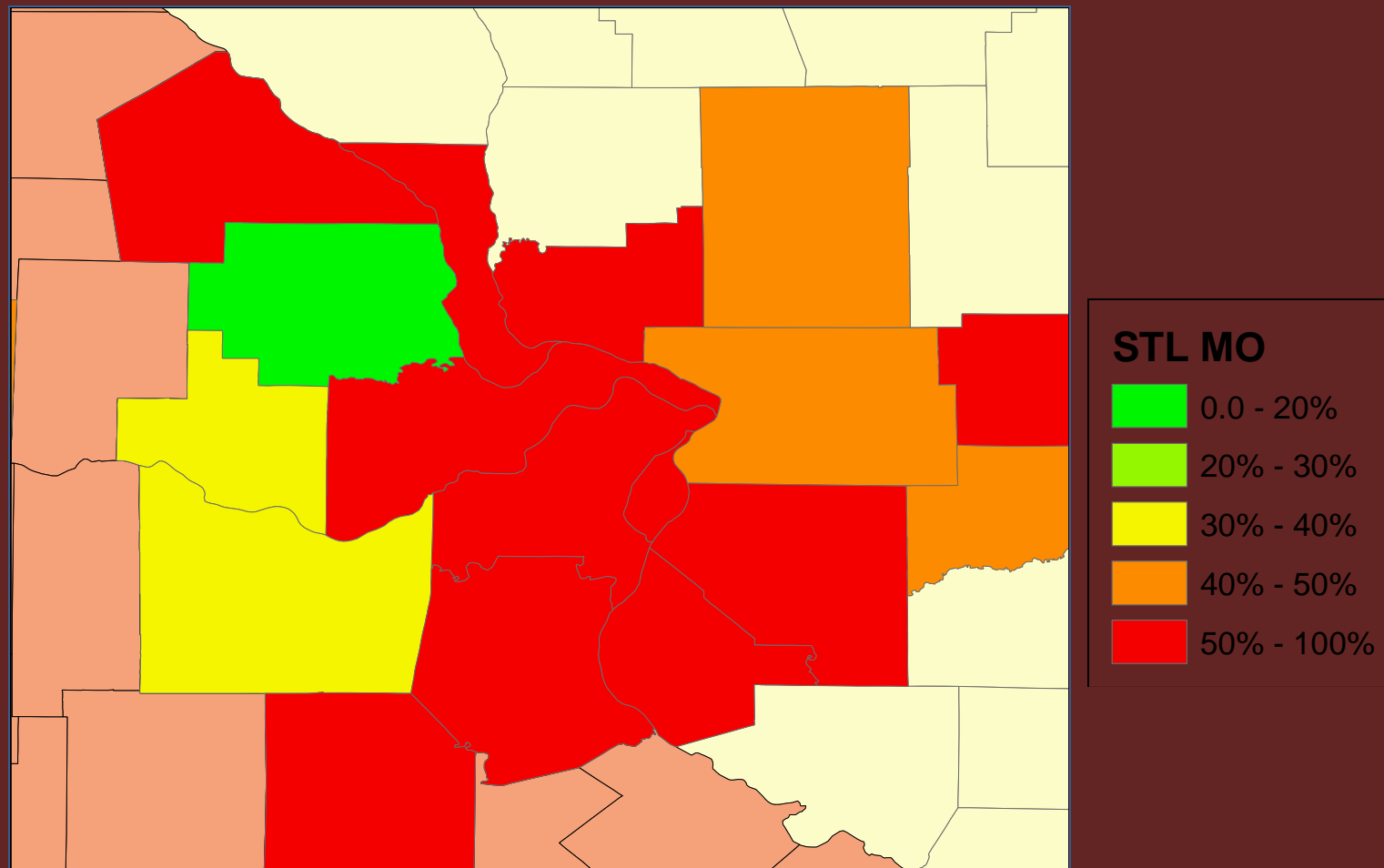
# Proportion of TTU Employment to County Employment in the St. Louis MSA



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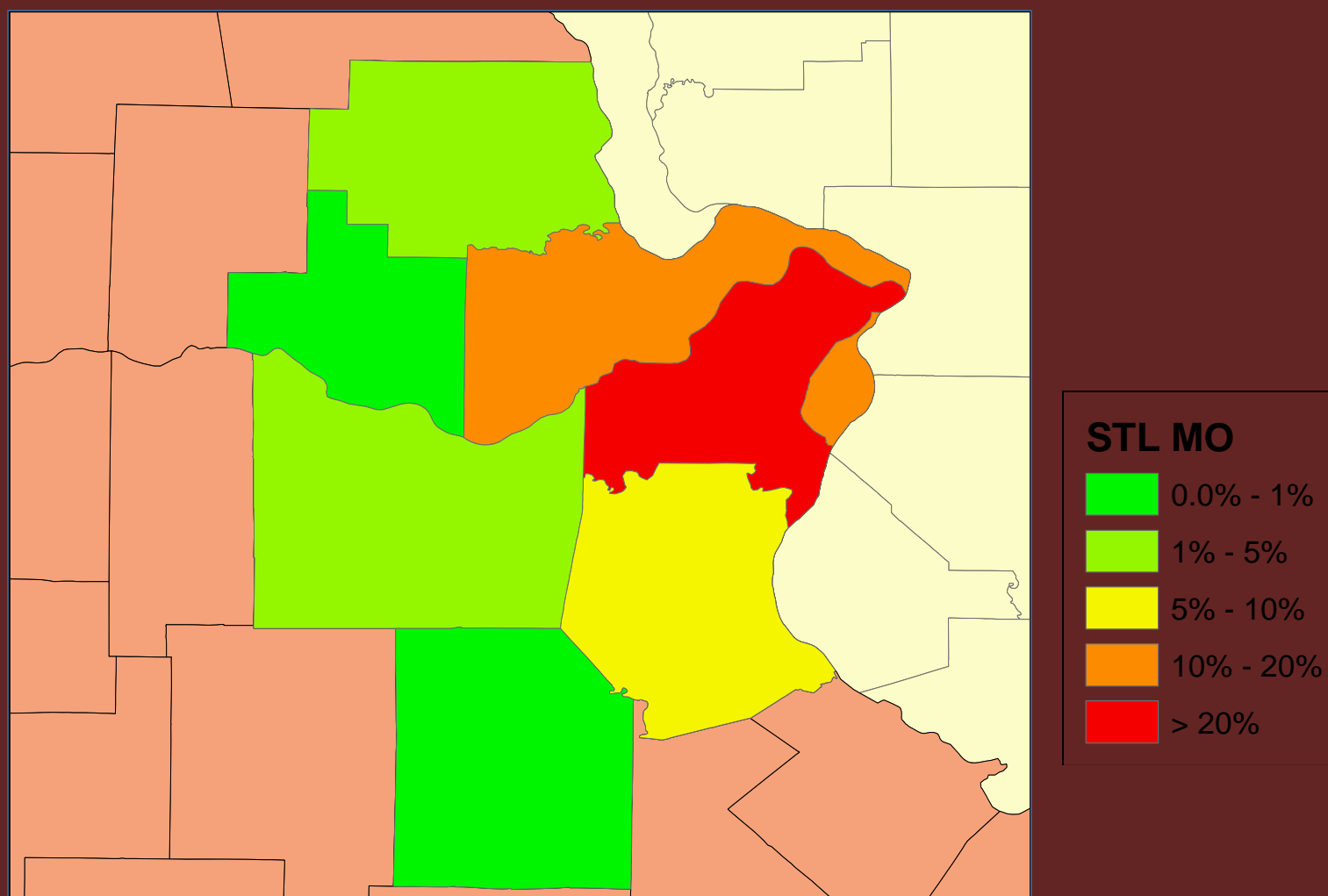
# Proportion of Service Employment to County Employment in the St. Louis MSA



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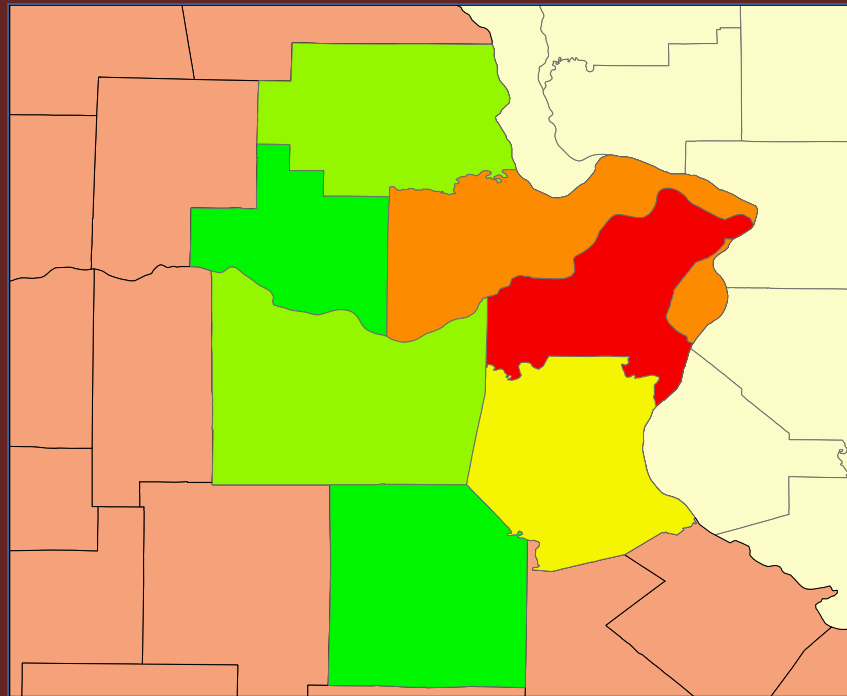
# Proportion of Taxable Sales in the St. Louis MSA (Missouri Only)



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# Proportion of Taxable Sales in the St. Louis MSA (Missouri Only)

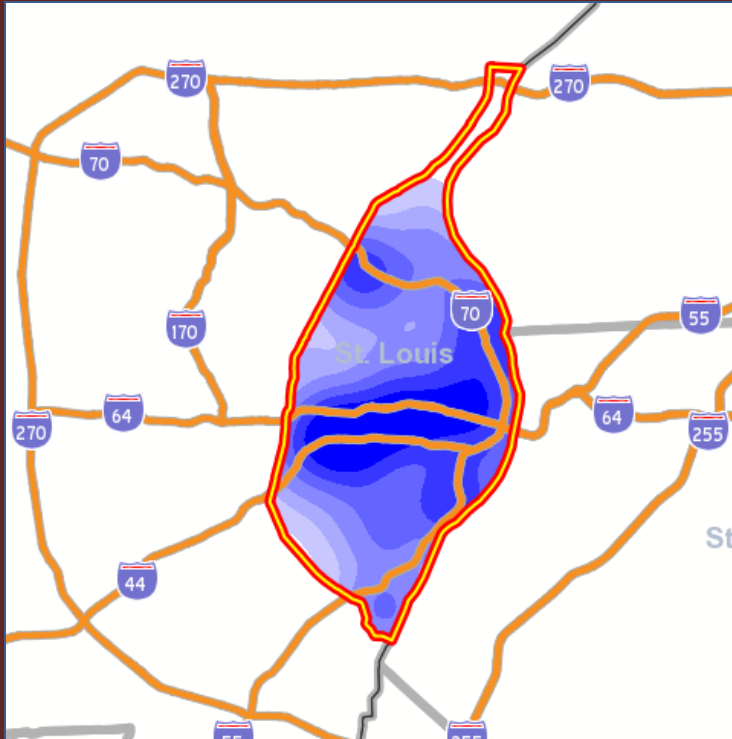


	Percent
Washington	0.47
Franklin	3.66
Warren	0.86
Lincoln	1.45
Jefferson	6.74
St. Charles	15.88
St. Louis	57.60
St. Louis City	13.35

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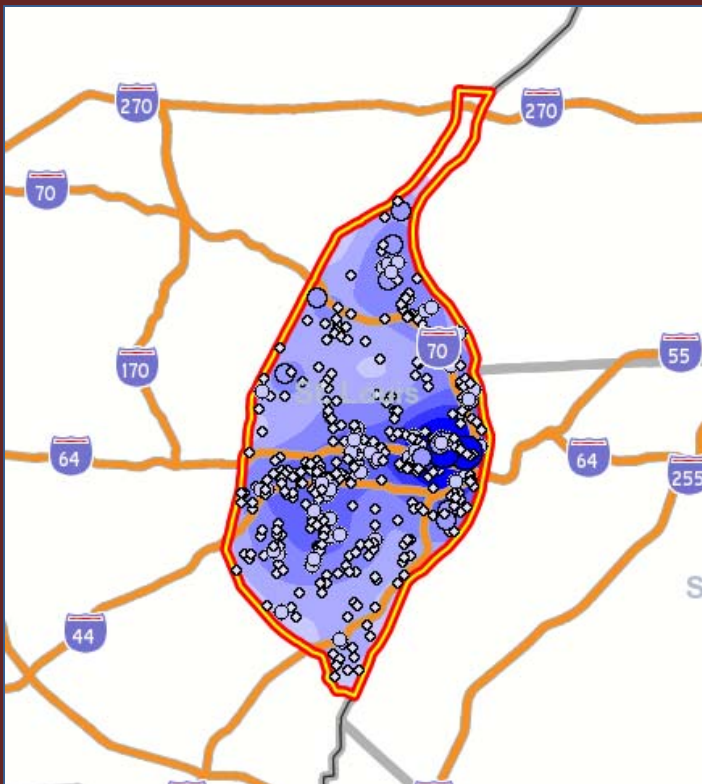
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# 2008 Goods Producing Jobs in STL



NAICS	Jobs	Percent
<b>Agriculture, Forestry, Fishing and Hunting</b>	210	0.7%
<b>Mining, Quarrying, and Oil and Gas Extraction</b>	21	0.1%
<b>Construction</b>	9,584	32.4%
<b>Manufacturing</b>	19,755	66.8%

# 2008 TTU Jobs in STL

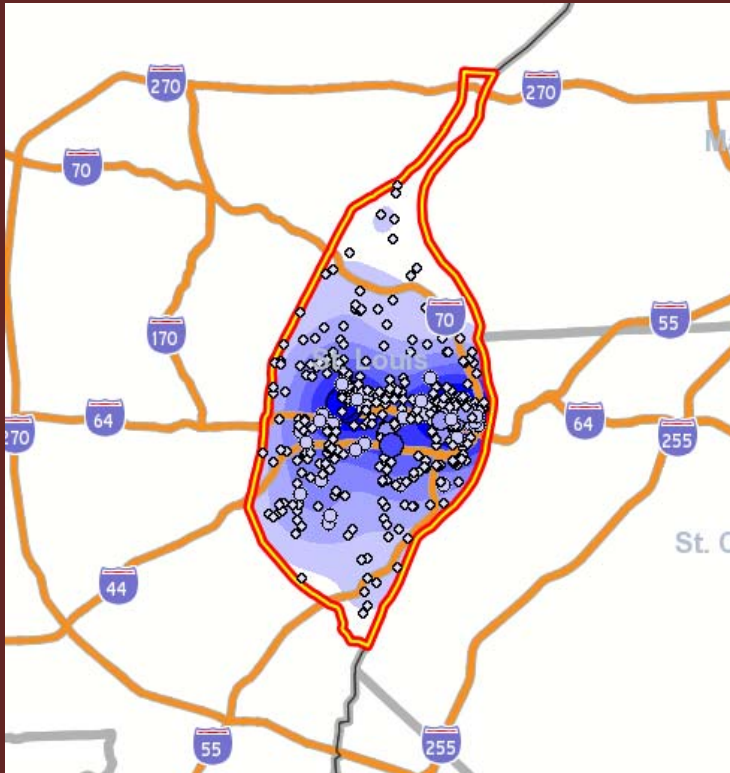


NAICS	Jobs	Percent
Utilities	3,362	9.2%
Wholesale Trade	13,733	37.4%
Retail Trade	11,065	30.1%
Transportation and Warehousing	8,561	23.3%

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# 2008 Other Services Jobs in STL



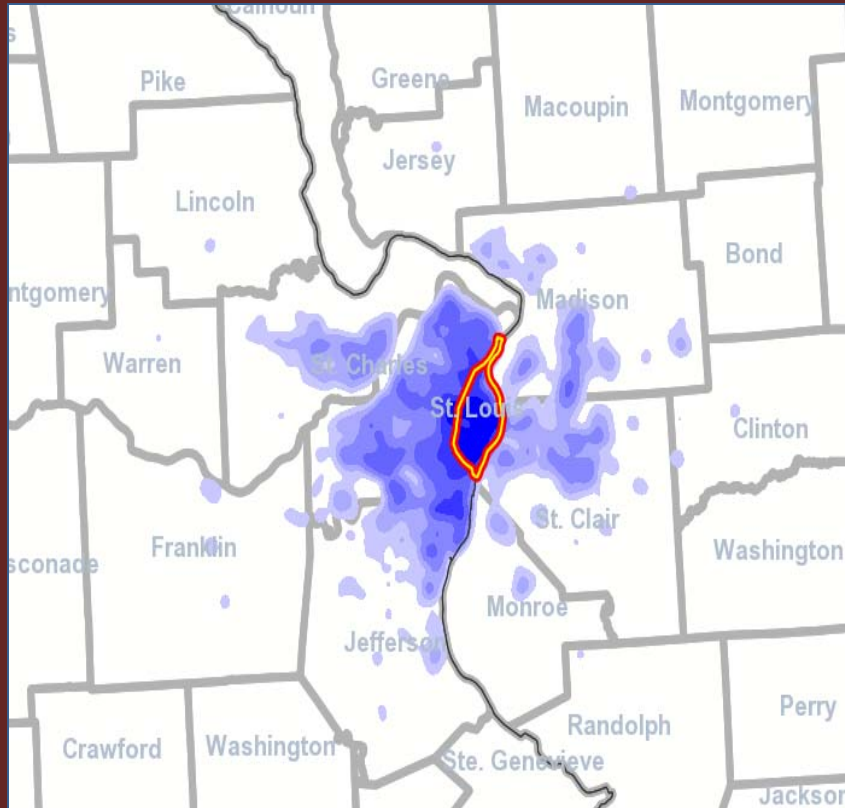
NAICS	Jobs	Percent
Information	5,229	3.5%
Finance and Insurance	8,145	5.5%
Real Estate and Rental and Leasing	2,535	1.7%
Professional, Scientific, and Technical Services	16,549	11.1%
Management of Companies and Enterprises	8,234	5.5%
Administration & Support, Waste Management and Remediation	15,460	10.4%
Educational Services	23,116	15.5%
Health Care and Social Assistance	30,369	20.4%
Arts, Entertainment, and Recreation	6,593	4.4%
Accommodation and Food Services	18,433	12.4%
Other Services (excluding Public Administration)	7,039	4.7%
Public Administration	7,260	4.9%

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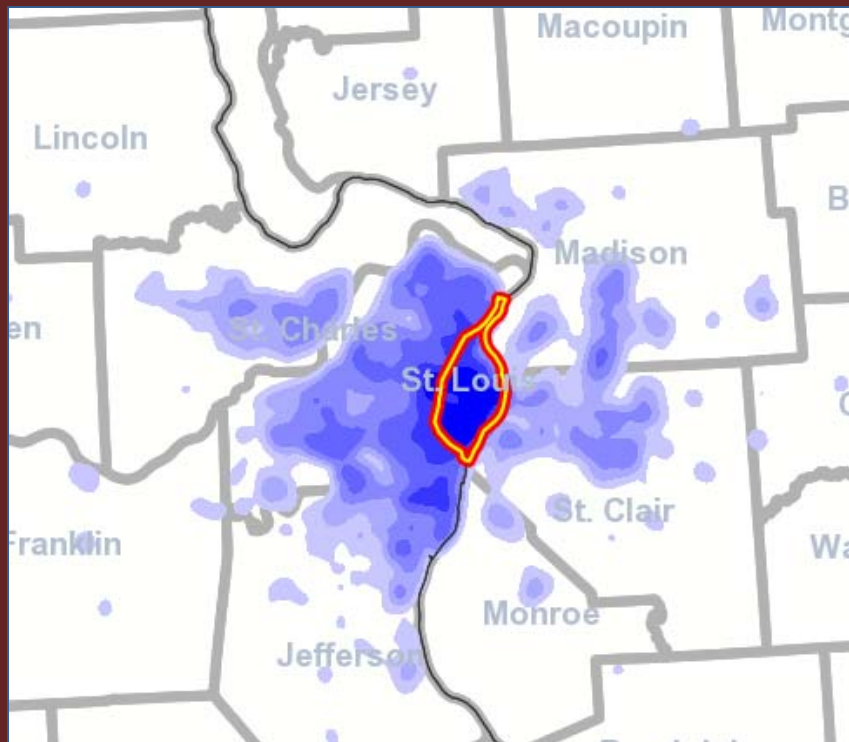


# Residence of people who work in STL City – Goods Producing



	Count	Share
St. Louis County, MO	11,558	39.1%
<b>St. Louis city, MO</b>	<b>5,414</b>	<b>18.3%</b>
Jefferson County, MO	3,104	10.5%
Madison County, IL	2,285	7.7%
St. Charles County, MO	1,976	6.7%
St. Clair County, IL	1,797	6.1%
Franklin County, MO	505	1.7%
Monroe County, IL	474	1.6%
St. Francois County, MO	185	0.6%
Clinton County, IL	157	0.5%
All Other Locations	2,115	7.2%

# Residence of people who work in STL City – Services

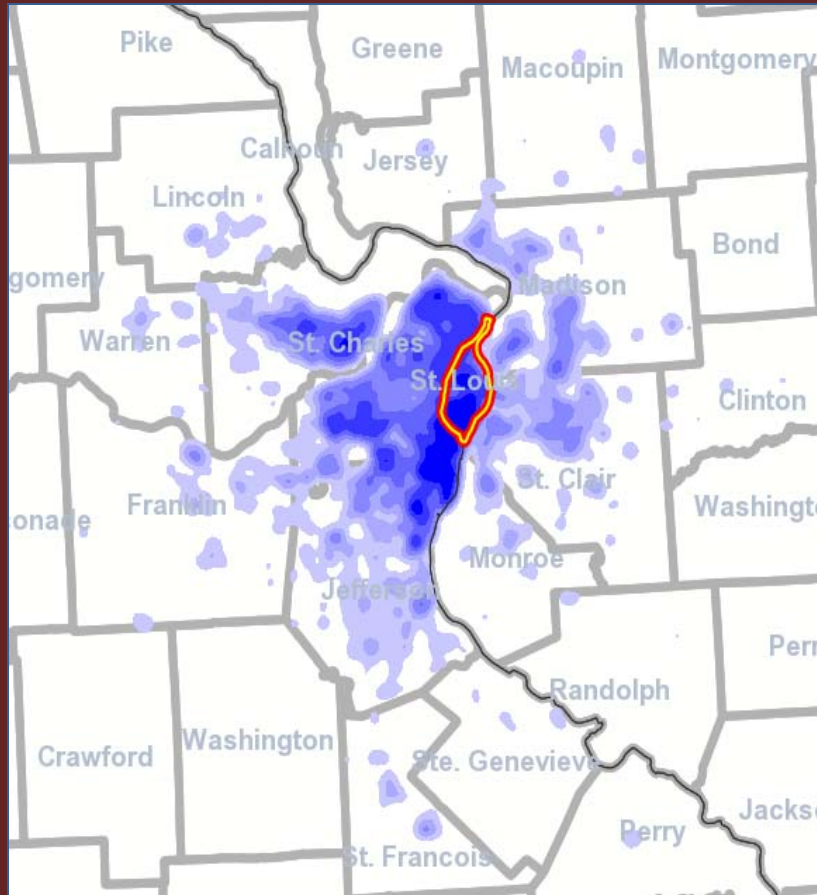


	Count	Share
St. Louis County, MO	60,281	40.5%
<b>St. Louis city, MO</b>	<b>44,027</b>	<b>29.6%</b>
St. Clair County, IL	10,910	7.3%
Madison County, IL	8,226	5.5%
St. Charles County, MO	6,628	4.4%
Jefferson County, MO	6,480	4.4%
Monroe County, IL	1,383	0.9%
Franklin County, MO	1,251	0.8%
Clinton County, IL	572	0.4%
Jackson County, MO	532	0.4%
All Other Locations	8,673	5.8%

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# Residence of people who work in STL City – TTU

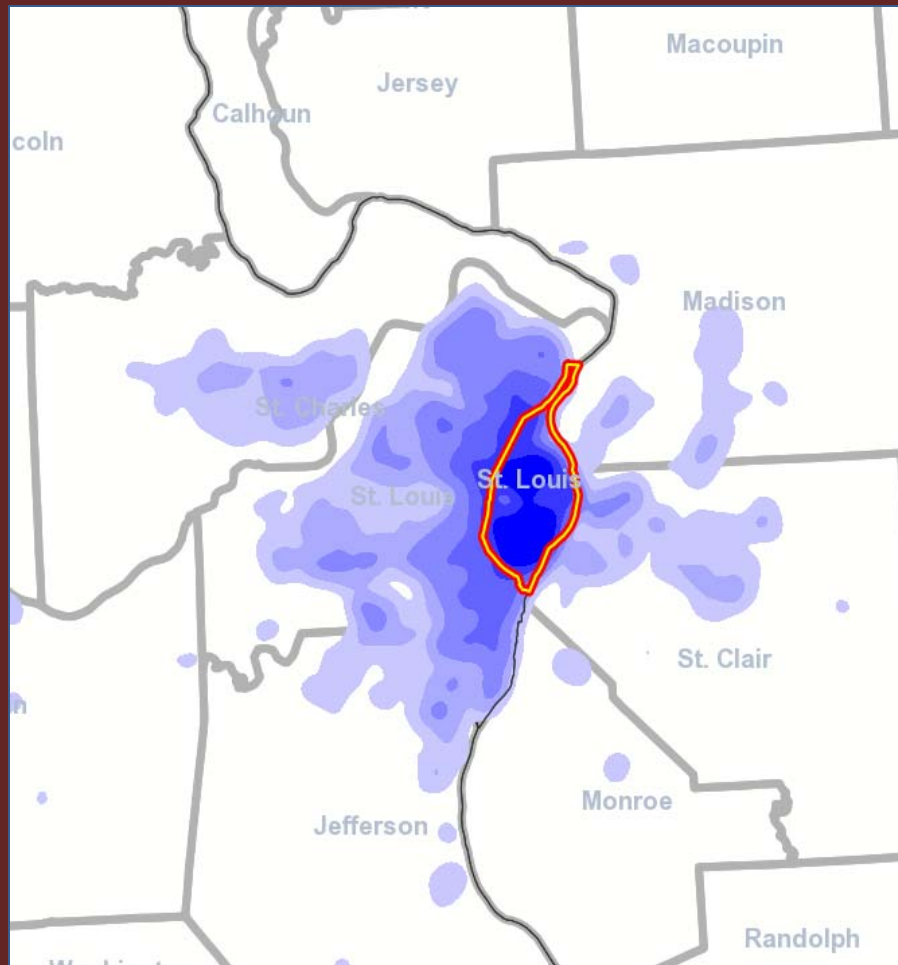


	Count	Share
St. Louis County, MO	14,461	39.4%
<b>St. Louis city, MO</b>	<b>6,942</b>	<b>18.9%</b>
St. Charles County, MO	3,136	8.5%
Jefferson County, MO	2,975	8.1%
Madison County, IL	1,971	5.4%
St. Clair County, IL	1,917	5.2%
Franklin County, MO	586	1.6%
Monroe County, IL	352	1.0%
Cape Girardeau County, MO	271	0.7%
St. Francois County, MO	236	0.6%

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# Residence of people who work in STL City – Low Income

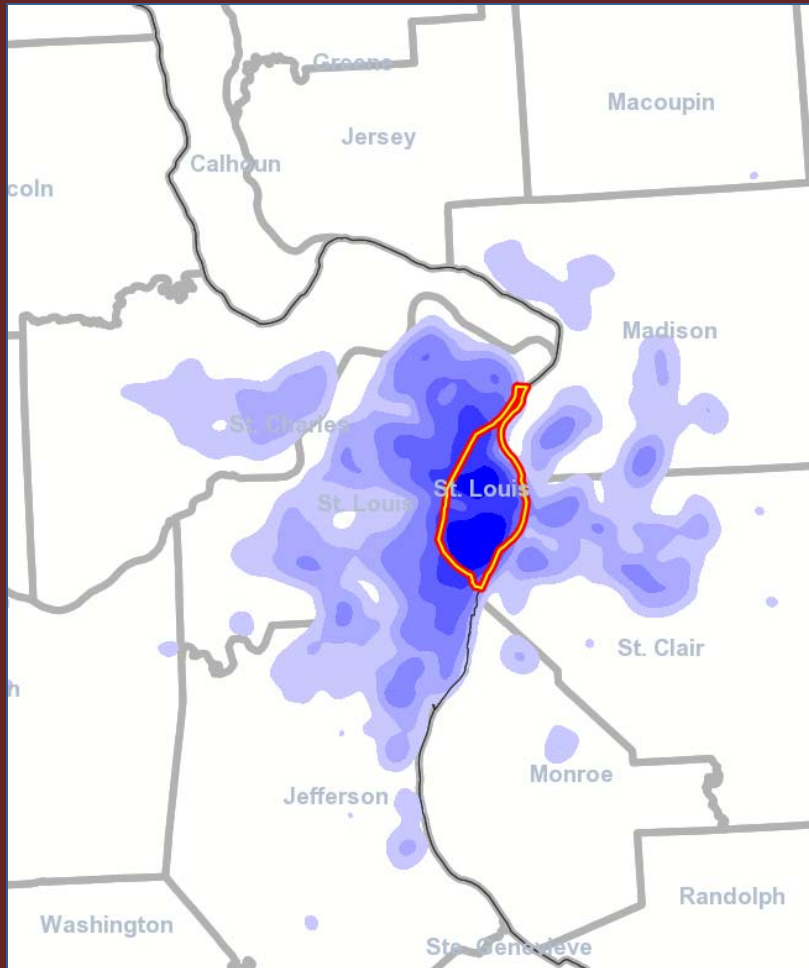


	Count	Share
St. Louis County, MO	15,868	39.4%
<b>St. Louis city, MO</b>	<b>13,382</b>	<b>33.2%</b>
St. Clair County, IL	2,151	5.3%
St. Charles County, MO	1,812	4.5%
Jefferson County, MO	1,797	4.5%
Madison County, IL	1,199	3.0%
Franklin County, MO	433	1.1%
Monroe County, IL	222	0.6%
Boone County, MO	181	0.4%
Cape Girardeau County, MO	177	0.4%
All Other Locations	3,087	7.7%

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# Residence of people who work in STL City – Middle Income



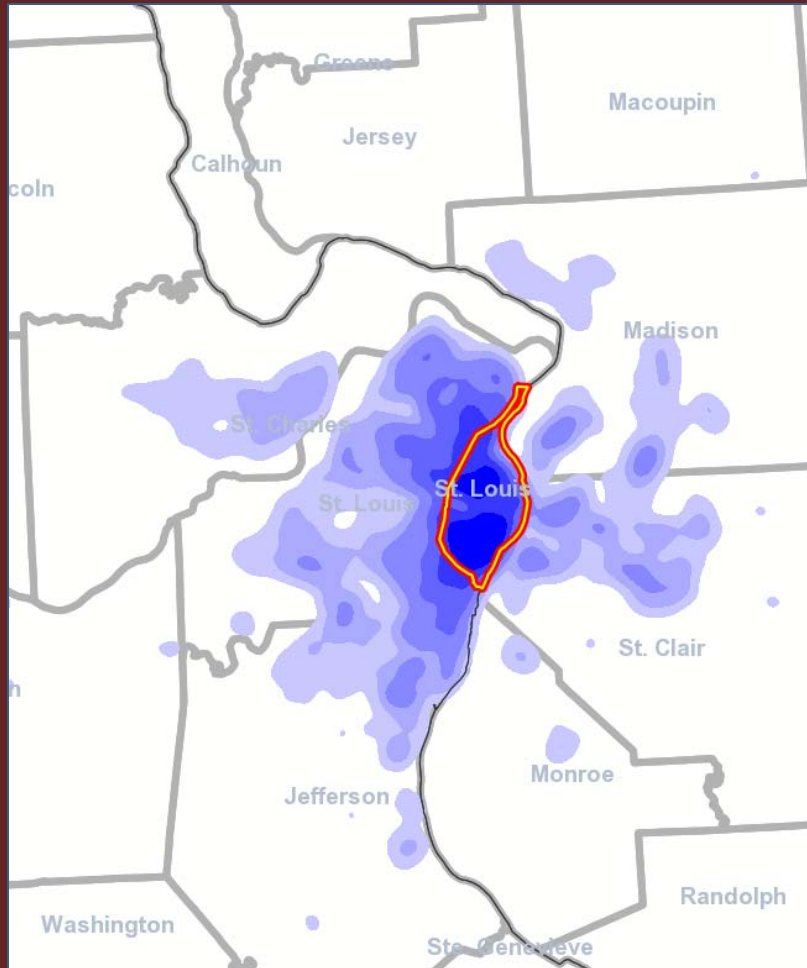
	Count	Share
St. Louis County, MO	29,081	36.8%
<b>St. Louis city, MO</b>	<b>24,217</b>	<b>30.7%</b>
St. Clair County, IL	6,455	8.2%
Madison County, IL	4,517	5.7%
Jefferson County, MO	4,446	5.6%
St. Charles County, MO	3,012	3.8%
Franklin County, MO	798	1.0%
Monroe County, IL	623	0.8%
St. Francois County, MO	308	0.4%
Cape Girardeau County, MO	291	0.4%
All Other Locations	5,184	6.6%

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# Residence of people who work in STL City – High Income

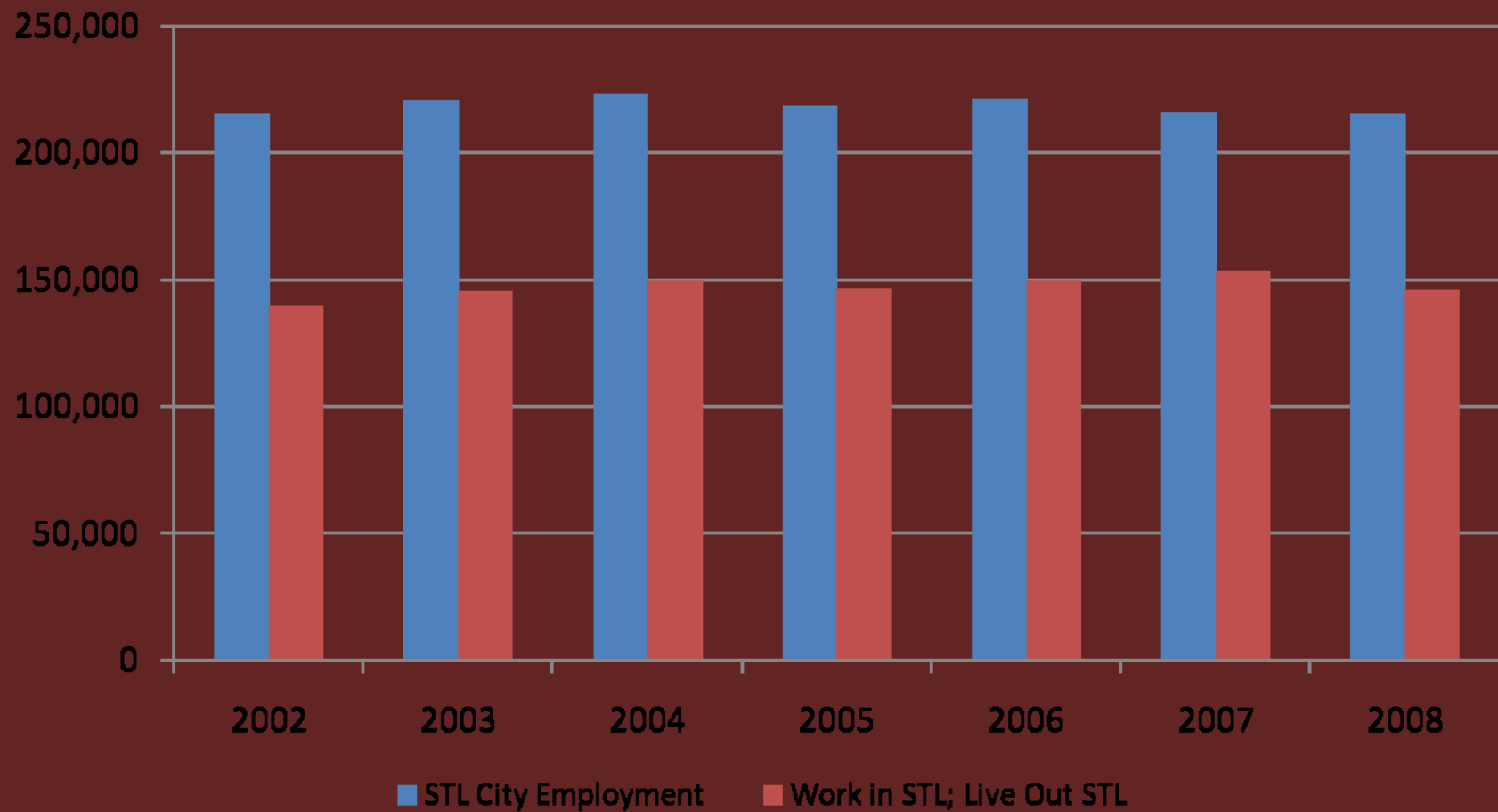


	Count	Share
St. Louis County, MO	41,351	43.1%
<b>St. Louis city, MO</b>	<b>18,784</b>	<b>19.6%</b>
St. Charles County, MO	6,916	7.2%
Madison County, IL	6,766	7.0%
Jefferson County, MO	6,316	6.6%
St. Clair County, IL	6,018	6.3%
Monroe County, IL	1,364	1.4%
Franklin County, MO	1,111	1.2%
Clinton County, IL	551	0.6%
Jackson County, MO	419	0.4%
All Other Locations	6,417	6.7%

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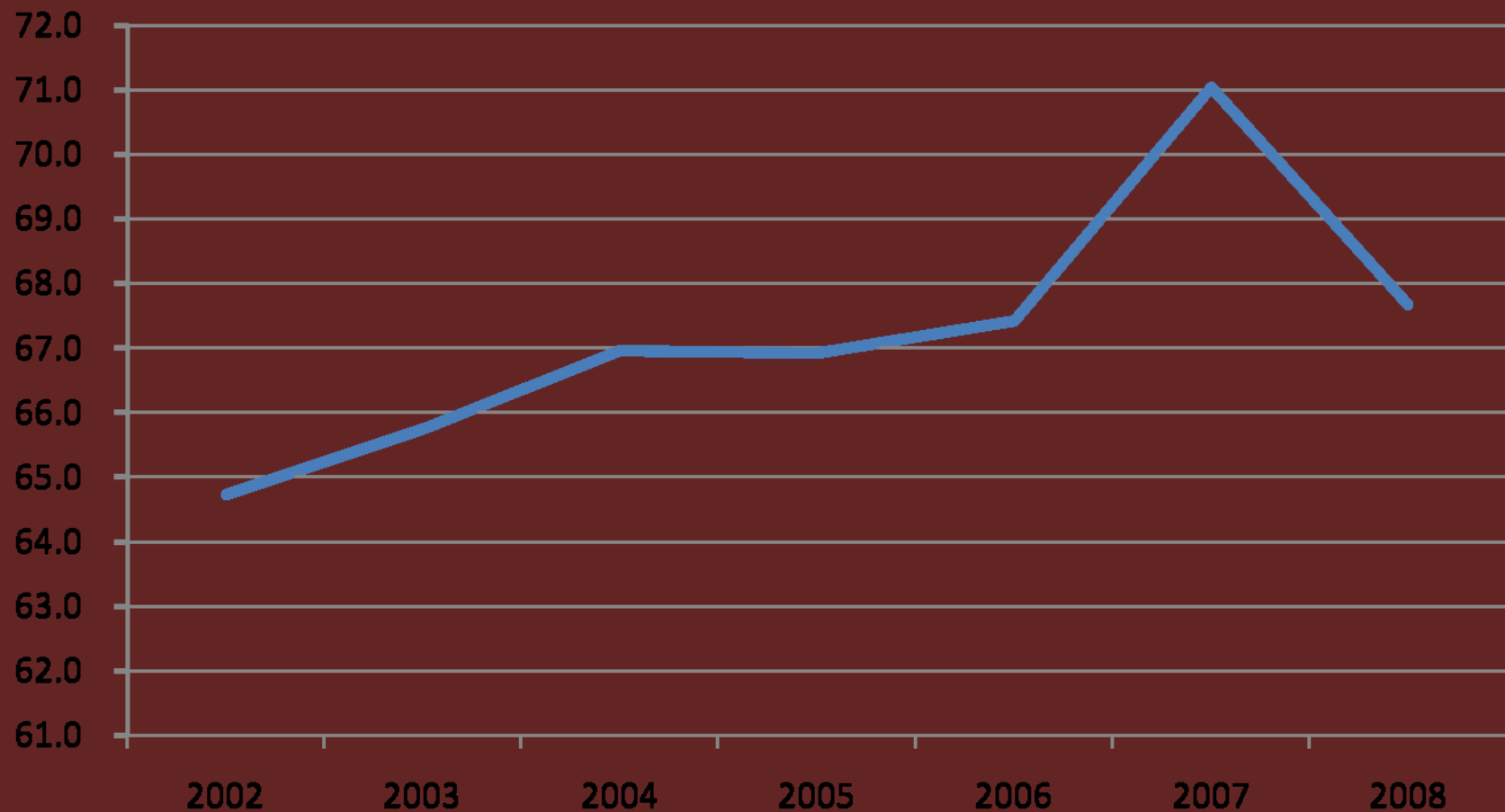
# Who is staying after 5pm?



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# Percent of STL Workers who live outside of STL

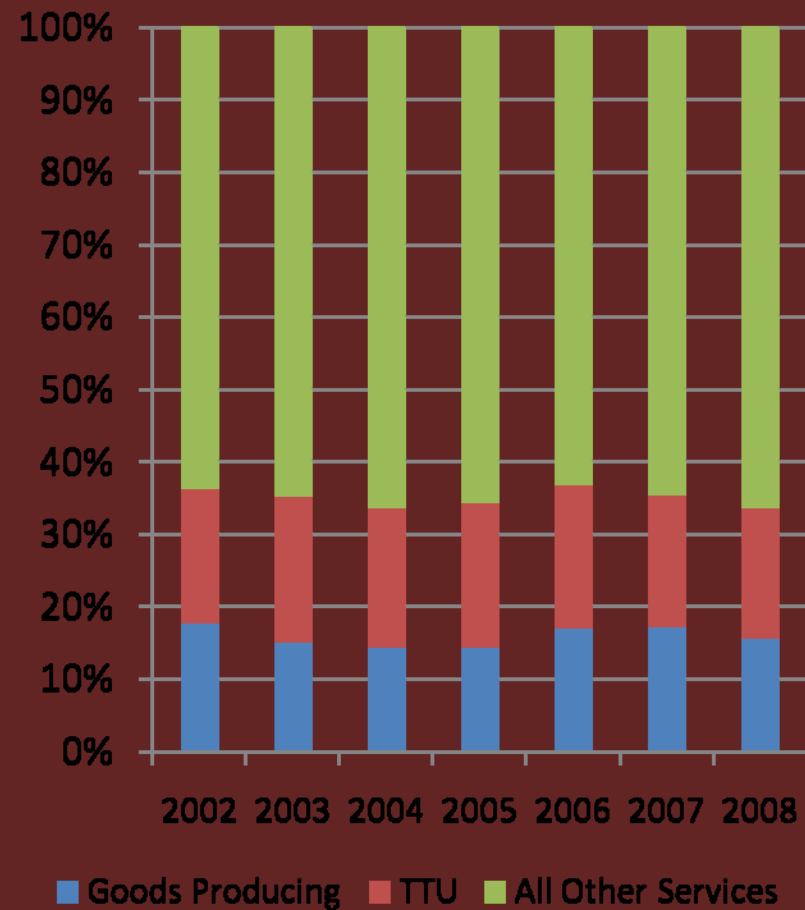
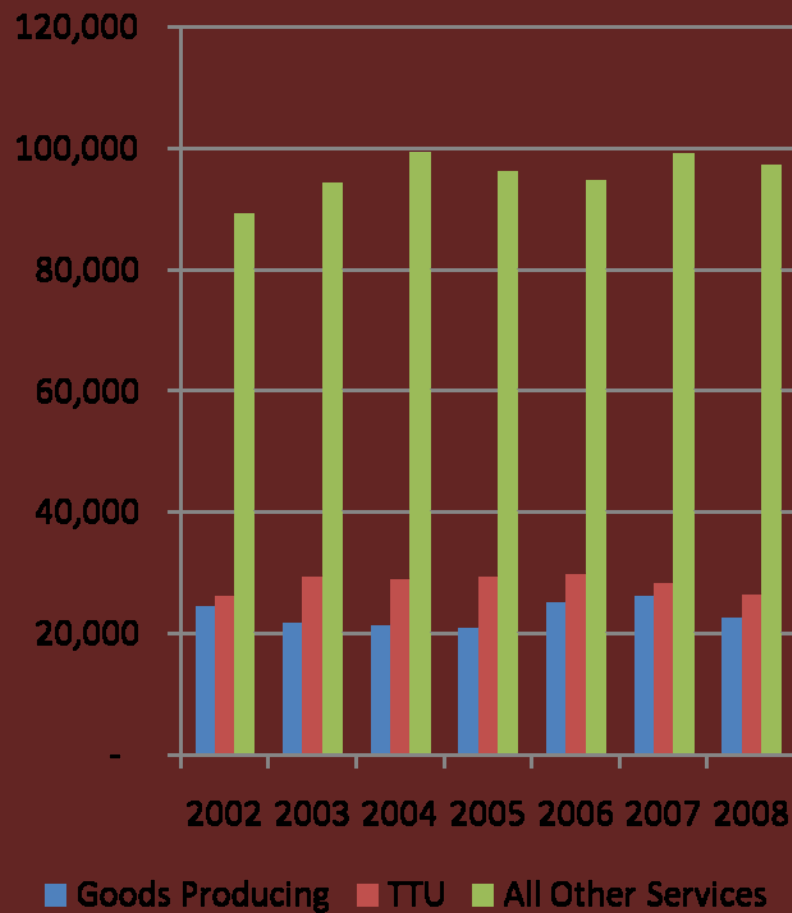


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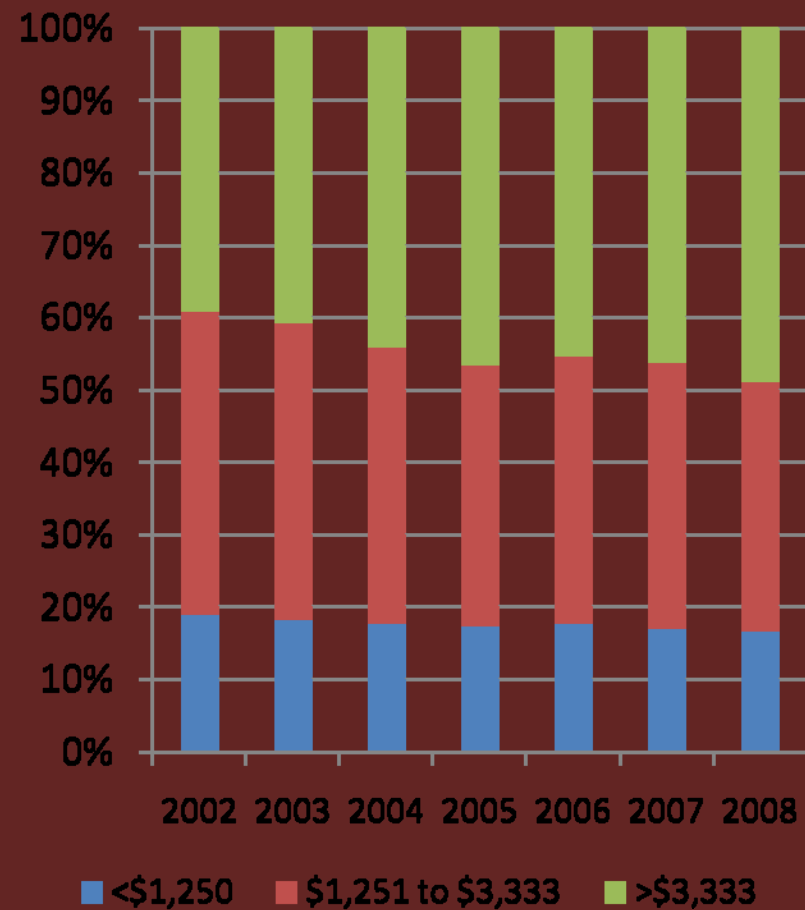
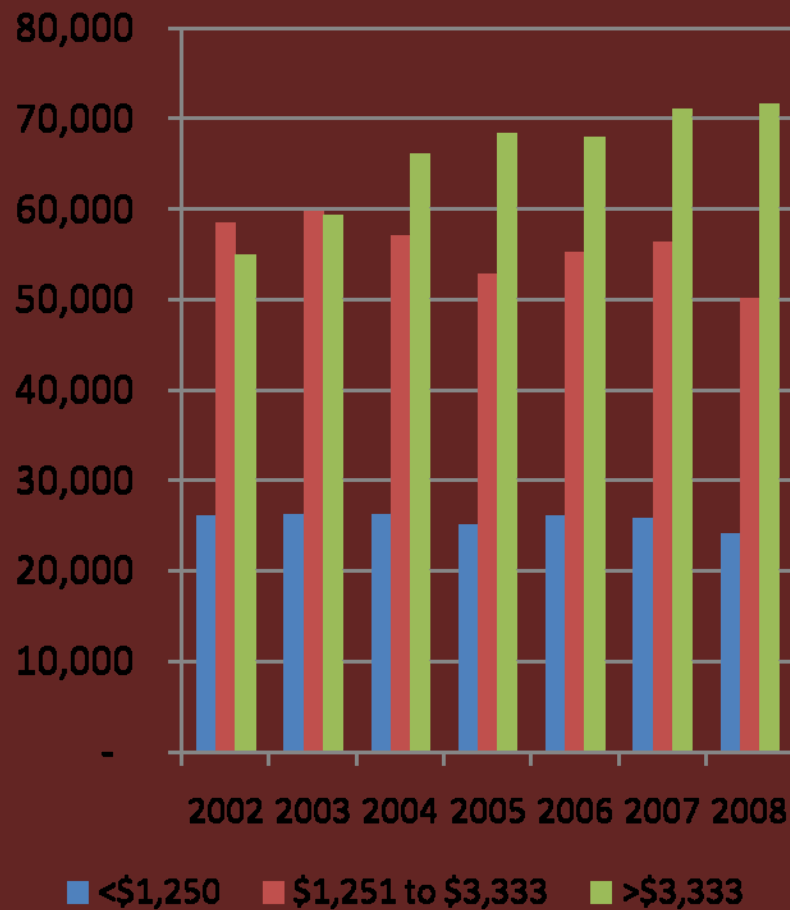
# Work in STL; Live Elsewhere by Job



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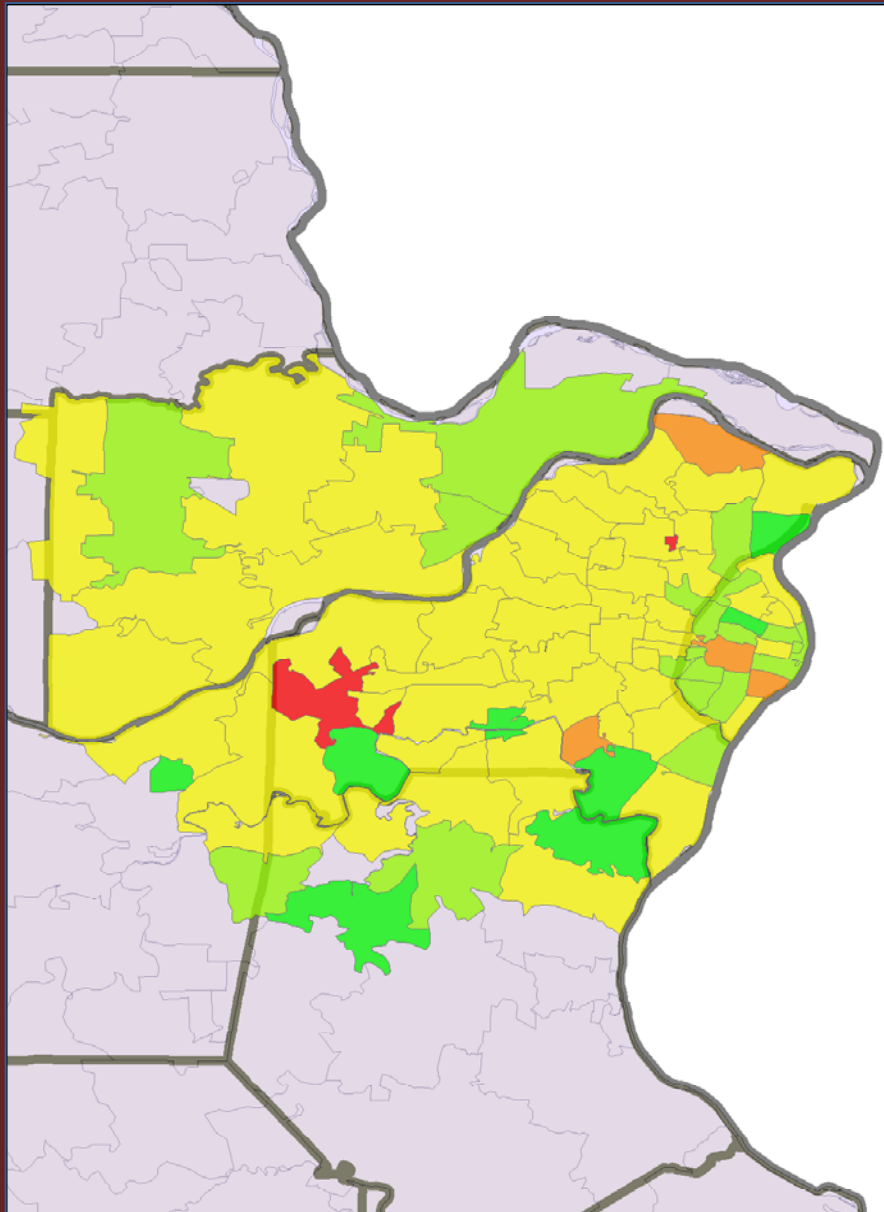
# Work in STL; Live Elsewhere by Income



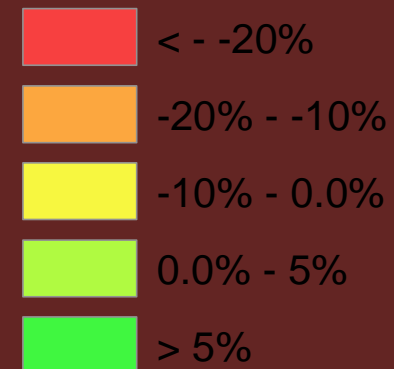
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# Percent Change in Taxable Sales 2007 to 2008 By Zip Code



## Percent Change



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# What does regression analysis say about this?

- Regress the natural logs of the data on STL City and St. Louis County Sales Taxes
- Increase Total Wages by 10% and taxable sales will increase by 0.878%; 10% increase in employment will increase taxable sales by 2.5%

STL Sales Tax	
Constant	15.58773***
STL Total Wages	0.087878*
STL Total Employ	0.255564
R <sup>2</sup>	.229

# St. Louis is not in charge of its own sales tax

- Include St. Louis County wages and employment
- Increase Total Wages by 10% and taxable sales will decrease by 0.6% while a 10% increase in employment will increase sales by 2.6%
- If County Wages and Employment Increase 10%, then sales increase 7.8% and 8.5% respectively

STL Sales Tax	
Constant	10.34278**
STL Total Wages	-0.068564*
STL Total Employ	0.266483**
County Total Wages	0.7897***
County Total Employ	0.856728***
R <sup>2</sup>	.800

# Are some jobs better than other jobs?

- Examine employment by Industry
- Increases in STL Goods and TTU employment has no impact (possibly negative?)
- Note that county employment has a larger impact on STL taxable sales than city employment
- Increases in County TTU actually decreases STL Sales Tax

STL Sales Tax	
Constant	3.057
STL Goods Employ	-0.123
STL TTU Employ	-0.334
STL Service Employ	0.611***
County Goods Employ	0.535*
County TTU Employ	-1.586***
County Service Employ	2.105***
R <sup>2</sup>	0.786

## In Conclusion

- The relationship between Taxable Sales, which obviously influences sales tax revenue for a government body, can be highly dependent upon factors outside the control of tax authority.
- Outside influences include wage and employment competition from other taxing districts.
- One also has to consider the commuting flows of employees when forecasting taxable sales
- Wage and employment growth in your district does not necessarily mean more sales tax revenue!!