Saline County
Retail Trade Analysis:
Sales, Employment, and Income

Presented to the
Saline County Study Steering Committee

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Social Sciences Unit
University of Missouri – Columbia
College of Agriculture, Food and Natural Resources
138 Mumford Hall
Columbia, MO 65211-6200
http://www.cpac.missouri.edu
Saline County
Retail Trade Analysis:
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by
Anna E. Kovalyova
Anna M. Cox
Thomas G. Johnson

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Acknowledgements

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Saline County Study Steering Committee

Mark Belwood          LeAnn Haling
Kathy Borgman         Marc Harris
Vince Buck            Roy Hunter
Richard Clemens      Becky Plattner
Ruthie Cramer        Wayne McReynolds

Saline County Study Scenarios Committee

Mark Belwood
Kathy Borgman
Vincent Burke
Anna Cox
Cynthia Crawford
Roy Hunter
Tom Johnson
John Stouffer
Executive Summary

Many localities use the expansion of their retail trade sector as an economic development tool. There are many benefits of having a strong retail sector, including growth in employment, sales, local government sales tax revenues, as well as improvements in local quality of life. In addition, the existence of a strong retail sector is often considered important to firms that are thinking of locating in a community. On the other hand, retail trade expansion as an economic development tool is limited by two factors. First, retail trade creates little added value because these stores purchase most of the goods they sell from outside the local area. Second, increased sales in one geographic area may be at the expense of lost sales in a nearby area. Still, having a strong retail sector is generally beneficial to the local economy and the local government.

This report first analyzes County retail sales using several tools to quantify the current level of retail sales and to identify areas of potential expansion. The economic importance of the retail sector to the County is then presented. The third section compares the retail sales of counties adjacent to Saline County and that may be competing for the broader region's retail dollars. The appendices in this report provide definitions for and the interpretation of several terms and tools used in this report. Charts of Saline County's disaggregated retail sector are included in the final appendix.

Key Findings

- After adjusting for inflation, Saline County’s retail sales increased from $146 million in 1990 to $150 million in 1998 -- a growth of 2.7 percent. This is compared to a growth of 22.4 percent in retail sales for the state over the same time period.

- County retail sales have declined in real terms between 1996 and 1998 -- from $158 million to $150 million (1998 dollars).

- The number of retail firms in Saline County increased from 674 in 1990 to 715 in 1998.

- In 1996, almost 1,600 people were employed in retail businesses in Saline County -- over 16 percent of total county employment.
• Payroll from the retail sectors totaled more than $16.3 million -- 7.8 percent of the wage, salary and other labor earnings of Saline County residents.

• Saline County residents’ demands for goods and services are not being fully filled by the local businesses. Saline County’s overall pull factor declined from 0.79 in 1990 to 0.61 in 1998.

• Several retail categories in Saline County show promise for expansion. These are the categories with pull factors of less than one and high growth rates: General Merchandise, Auto Repair Services, Eating and Drinking Places, Miscellaneous Retail and Building Materials.

Issues for the Future

Retail trade analysis provides local decision-makers with information about their current retail situation and prospects for expansion. The analyses presented in this report are for large retail categories and should not be used to predict the profitability of individual businesses. Moreover, these statistics indicate what has happened to a particular retail category, but not why. Local people familiar with the community should attempt to identify reasons for the changes in the local economy. By knowing the relative strengths and weaknesses of a locality's retail sector, merchants and community leaders should be able to capitalize on areas of opportunity.

In general, County retail sales can be increased when:

1. existing firms capture more retail dollars from local residents;
2. existing firms increase sales to incommuters or tourists;
3. new retail firms fill a gap in the local retail sector; and
4. local demand for retail goods increases.

The first two strategies tend to shift retail sales within a larger region. The latter two strategies create or increase demand for retail goods, and make the retail development more than a 'zero-sum game' within the larger region.
There are many methods that a community can use to achieve the goal of increasing local retail sales. The tools that are successful in increasing retail sales will depend on why people choose to shop or not shop in Saline County. A marketing survey is one tool that can help determine which issues need to be addressed to induce people to shop within the County. For example, if people perceive that stores are not open at convenient times, then the retail stores may want to adjust their business hours. Similarly, if people do not shop locally because it is hard to find parking, then parking accessibility is an issue that should be addressed.

Understanding the local retail sector becomes even more crucial given the changes occurring in the retail industry nationwide. First, there has been an increased concentration of sales in large, multi-purpose ‘supercenters.’ In many cases, these large retailers have had a detrimental effect on smaller, locally owned retail firms, sometimes decreasing the variety of store types available to customers. On the other hand, these large centers draw many customers to the area. Not having such a store to act as an anchor in a shopping center may contribute to declining retail sales. No matter the case, determining the preferences and shopping patterns of customers will allow local officials and businesses to make strategic plans to improve the Saline County retail sector.

The second major change occurring in the retail industry is the increased use of catalog, mail order, and Internet shopping. These forms of non-local shopping often replace local shopping. In fact, Internet retail purchases alone are estimated to reach $36 billion by the end of the year, growing by 145 percent in 1999, according to a study by Shop.org and The Boston Consulting Group. The recent publication, “The Impacts of a Proposed Saline County Use Tax: 1999-2007” presents evidence indicating that Missourians are also participating in this shift in shopping behavior. If internet retail purchases grow as much as projected, there will be substantial impacts on local retailers and all levels of government that depend on retail sales for revenue. These and other issues that may exist in Saline County must be addressed in order to expand the local retail trade sector.
The performance of the local retail sector is a key economic indicator that has important economic implications. Because the retail sector is mostly patronized by local residents and businesses, it provides an initial indication about the vitality of the local economy. The retail sector also helps describe the fiscal capability of local government, as sales tax is one of the most important sources of revenue for state and local governments.

Smaller towns find it difficult to compete successfully with retail stores in nearby larger communities. Moreover, if a community experiences loss of employment and residents, the tax base is reduced and is frequently no longer sufficient to provide the services necessary to attract new residents, which may cause further loss of employment. Unemployment also has a negative relationship to sales, since unemployed people have fewer available resources to spend. Uncertainty about the future also reduces average family purchases. Interestingly, many researches have found that aged residents exhibit a positive correlation with retail sales. Since it is not unusual for retirees to have reduced incomes, a positive correlation might mean that they spend a greater proportion of their limited incomes inside the community than do other residents.

Previous research suggests that among the most important factors influencing retail trade are current personal income, family income, population, employment, labor force, number of retirees in the region and the adequacy of the transportation system. Increases in relative per capita income are an impetus to local spending, whereas relative population changes influence spending patterns within and outside the county. Many of the factors influencing retail trade have already been analyzed and can be found in the report titled the *Saline County Baseline: 1997 - 2007*. 
Saline County has a 1 percent sales tax. Half of this one-percent tax is dedicated to law-enforcement purposes, and half to other county-provided services. In 1998, retail sales tax revenue in Saline County was $1,626,230 and comprised 31.3 percent of the total county revenues\(^1\). This constituted the largest County revenue category. The importance of sustained growth in the retail sector for Saline County should not be underestimated.

\(^1\) Note that the retail sales level reported by the Tax Administration Bureau is different from what one would calculate using the County sales tax revenue as a base. The difference is due to reporting and processing lags. According to the Tax Administration Bureau, the time between when a consumer pays a retail sales tax and when the County actually records receiving the sales tax money could be two to three months.
Retail sales, as defined in the 1992 Census of Retail Trade, includes “merchandise sold for cash or credit at retail and wholesale by establishments primarily engaged in retail trade; amounts received from customers for layaway purchases; receipts from rental or leasing of vehicles, equipment, instruments, tools, etc.; receipts for delivery, installation, maintenance, repair, alteration, storage, and other services; the total value of service contracts; and gasoline, liquor, tobacco, and other excise taxes, which are paid by the manufacturer or wholesaler and passed on to the retailer.” Under this definition, firms not considered a retail store might also have taxable retail sales. An example of such a non-retail firm, would be a hair salon, that also sells shampoo or other hair products. In this analysis, total retail sales include all taxable retail sales, either made through a firm classified as retail or not. In later sections, this report further analyzes only those firms that the government has classified as retail, as well as two service sectors that have high levels of retail sales.

According to Missouri statute Chapter 144, RSMo 1986 and 1993 Supplement, sales taxes in Missouri must be paid on the gross receipts of tangible personal property, admission to entertainment and athletic events, utilities, restaurant meals, hotel accommodations, and rental of tangible personal property. There are three major categories exempt from paying or charging sales taxes. First, non-profit or governmental organizations do not pay any sales tax on items that are otherwise considered taxable. Second, businesses that purchase retail items for further resale are also exempt from paying sales tax. Finally, sales tax may not be charged on selected services and commodities, such as medical services, vehicle repair, and household maintenance and repair.
Figure 1 illustrates the level of total taxable retail sales for the State of Missouri and Saline County over the last 9 years. The figure reveals that the retail sales in Saline County have been following a pattern similar to that of the State, even though Missouri’s retail sales have been growing much faster than Saline County’s (the scale on the chart makes it appear otherwise). During the economic slowdown between 1990 and 1992, retail sales declined -- the trend present not only in Missouri but in U.S. as a whole. Thus, the total taxable retail sales in Saline County declined by 8.2 percent from 1990 to 1992, but increased by 6.3 percent between 1993 and 1998. The County had its highest retail sales in 1996, declining in the last two years.

Source: Missouri Department of Revenue, Tax Administration Bureau
Analysis by CPAC
The graph of per capita retail sales (Figure 2) for Saline County and the state of Missouri is very similar to that of the total retail sales. Per capita retail sales declined between 1990 and 1992. This 5.6 percent decline reflects the nationwide economic downturn. The County per capita sales increased once again by 6.7 percent between 1993 and 1998.

The most notable feature in Figure 2 is the lower level of per capita spending in Saline County compared to the State. The gap has remained relatively constant over the years. There are several factors that contribute to this gap. First, Saline County has a lower average total personal income than the State. However, equally important are the shopping habits of Saline County businesses and residents. Shopping that occurs outside of the county often replaces local shopping. The purchases residents make outside of the county do not show up as county retail sales. This is the case whether the person travels to Kansas City to shop or buys products through mail order firms.

**Figure 2.**

*Saline County Per Capita Retail Sales*


Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Analysis by CPAC
Next, the overall performance of Saline County with regard to generating taxable retail sales was compared to that of adjacent counties. The comparison was made for the years 1990 and 1998. Pettis County dominates in the amount of both the total and per capita taxable retail sales it generates in the area (Figures 3 and 4). On the other hand, Howard County has the smallest total and per capita taxable retail sales in the region for both 1990 and 1998.

Figure 3.
Saline County and Adjacent Counties
Total Retail Sales 1990, 1998 (1998 dollars)

Source: Missouri Department of Revenue, Tax Administration Bureau
Analysis by CPAC
In order to analyze regional retail sales, one needs to establish the boundaries of the retail trade area to be examined. The most straightforward way to identify a trade area is to use political boundaries such as counties. If trade area is defined based on county borders it is often easier to perform socio-economic analysis for the area due to readily available data. Socio-economic analysis, in turn, serves as a basis for studying the purchasing patterns of the county population. Therefore, trade area capture and the pull factor for the years 1990, 1998 were calculated.

Retail sales change, not only over time, but also in the way they are concentrated both in the localities and throughout the state. There are several ways to measure the spatial concentration of retail sales. The most frequently used measures are the trade area capture (TAC) and the pull factor (PF). TAC is used to determine the number of customer equivalents, based on per capita state retail sales levels, that are being served by the local retail sector. Ideally, the TAC should meet or exceed the population of the county. If Saline County retailers were meeting all the needs of Saline County residents and businesses, the
TAC would be 1.0. The PF calculates the portion of customers' needs that are being met locally².

Numeric comparison of per capita taxable sales, TAC, PF and sales per establishment for Saline and adjacent counties for the years 1990 and 1998 are reported in Table 1. Pettis County had the highest numbers for all 4 economic indicators both in 1990 and 1998, with the exception of sales per establishment for 1998. Saline had the highest sales per establishment among all adjacent counties in 1998, but otherwise performed slightly above the average set by the counties in the area for both years.

Table 1.

Comparison of Saline with Adjacent Counties
1990 and 1998

<table>
<thead>
<tr>
<th></th>
<th>Per Capita Sales</th>
<th>Trade Area Pull Factor</th>
<th>Sales per Establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carroll</td>
<td>4,107</td>
<td>5,718</td>
<td>0.53</td>
</tr>
<tr>
<td>Chariton</td>
<td>3,843</td>
<td>4,665</td>
<td>0.51</td>
</tr>
<tr>
<td>Cooper</td>
<td>5,625</td>
<td>11,753</td>
<td>0.79</td>
</tr>
<tr>
<td>Howard</td>
<td>3,600</td>
<td>4,777</td>
<td>0.50</td>
</tr>
<tr>
<td>Johnson</td>
<td>4,989</td>
<td>31,990</td>
<td>0.75</td>
</tr>
<tr>
<td>Lafayette</td>
<td>4,585</td>
<td>17,270</td>
<td>0.56</td>
</tr>
<tr>
<td>Pettis</td>
<td>8,632</td>
<td>38,496</td>
<td>1.09</td>
</tr>
<tr>
<td>Saline</td>
<td>6,214</td>
<td>18,527</td>
<td>0.79</td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carroll</td>
<td>4,053</td>
<td>4,271</td>
<td>0.42</td>
</tr>
<tr>
<td>Chariton</td>
<td>4,402</td>
<td>4,099</td>
<td>0.48</td>
</tr>
<tr>
<td>Cooper</td>
<td>5,991</td>
<td>11,275</td>
<td>0.70</td>
</tr>
<tr>
<td>Howard</td>
<td>3,573</td>
<td>3,951</td>
<td>0.41</td>
</tr>
<tr>
<td>Johnson</td>
<td>5,776</td>
<td>36,880</td>
<td>0.77</td>
</tr>
<tr>
<td>Lafayette</td>
<td>5,981</td>
<td>20,241</td>
<td>0.62</td>
</tr>
<tr>
<td>Pettis</td>
<td>11,189</td>
<td>45,475</td>
<td>1.23</td>
</tr>
<tr>
<td>Saline</td>
<td>6,612</td>
<td>13,944</td>
<td>0.61</td>
</tr>
</tbody>
</table>

* Constant 1998 Dollars

Source: Missouri Department of Revenue, Tax Administration Bureau, U.S. Bureau of the Census, Analysis by CPAC

² See Appendix B for a detailed description of TAC and PF.
Pettis and Johnson Counties had the highest trade area capture estimates in the area for both years of interest with Chariton and Cooper Counties having the smallest (Figure 5). Pettis County experienced 18.1 percent growth and Johnson experienced 15.3 percent growth in TAC between 1990 and 1998. Trade area capture estimate for Saline County actually decreased by 24.7 percent between 1990 and 1998, the largest percent decline among the counties included in this analysis.

**Figure 5.**
Saline County and Adjacent Counties
Trade Area Capture Estimate 1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Pettis is the only county in the region being studied that had a pull factor greater than one for both years of interest (Figure 6). Therefore, the county is drawing customers from outside its borders or Pettis residents are spending more on retail sales than the state average. Saline County’s pull factor was 0.79 in 1990 and 0.61 in 1998. This suggests that the demands of Saline residents for goods and services are not being fully met by the local businesses. Importing retail goods from nearby counties or from mail order or Internet sales is filling this gap in local demand.

**Figure 6.**

Saline County and Adjacent Counties
Pull Factor 1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Economic Impact of Retail Trade

The retail trade sector contributes more than just sales tax revenue to the county. As do all businesses, retail firms add to the employment and income in the local economy. Using input-output modeling\(^3\), the employment and income impacts of the retail sector on the County were measured (Table 2). In 1996, almost 1,600 people were employed in retail businesses in Saline County. The combined retail sectors directly make up over 16 percent of the total county employment. Income from the retail sectors totaled more than $16.3 million, excluding proprietor's income, which is 7.8 percent of the wage, salary and other labor earnings of Saline County residents.

Retail businesses add even more jobs and income to the community through the linkages they have with other sectors in the economy. Multipliers measure linkages by including indirect and induced employment and income effects. *Indirect effects* refer to the purchases of goods and services that retail businesses make from other local businesses in order to produce the goods and services they provide. *Induced effects* occur when those employed in the retail sector spend part of their earnings in local retail stores. For example, the income multiplier of 1.28 for the Building Materials sector means that for every dollar earned by employees in a local Building Materials retail business, 28 cents of income is generated in other county businesses. Including the multiplier effect, the proportion of total employment due to retail trade increases to 20 percent. Income generated from the retail sector is 10.6 percent of total labor earnings in the County.

\(^3\) Refer to the "Input-Output Modeling" section for an explanation of input-output.
<table>
<thead>
<tr>
<th>Retail Sector</th>
<th>County Employment</th>
<th>Employment Multiplier</th>
<th>Total Employment Impact</th>
<th>Earnings (1,000)</th>
<th>Income Multiplier</th>
<th>Income Impact (1,000)</th>
<th>Average Wage per Employee</th>
</tr>
</thead>
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<tr>
<td>Building Materials</td>
<td>31</td>
<td>1.33</td>
<td>41</td>
<td>$584</td>
<td>1.28</td>
<td>$746</td>
<td>$18,828</td>
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<tr>
<td>General Merchandise</td>
<td>165</td>
<td>1.19</td>
<td>197</td>
<td>$2,072</td>
<td>1.30</td>
<td>$2,685</td>
<td>$12,558</td>
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<td>Food Store</td>
<td>275</td>
<td>1.20</td>
<td>331</td>
<td>$2,950</td>
<td>1.27</td>
<td>$3,746</td>
<td>$10,727</td>
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<td>Automotive</td>
<td>112</td>
<td>1.29</td>
<td>144</td>
<td>$1,951</td>
<td>1.32</td>
<td>$2,580</td>
<td>$17,420</td>
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<td>Gas</td>
<td>142</td>
<td>1.29</td>
<td>183</td>
<td>$1,321</td>
<td>1.32</td>
<td>$1,747</td>
<td>$9,303</td>
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<tr>
<td>Apparel</td>
<td>57</td>
<td>1.22</td>
<td>70</td>
<td>$448</td>
<td>1.36</td>
<td>$611</td>
<td>$7,860</td>
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<tr>
<td>Furniture</td>
<td>75</td>
<td>1.28</td>
<td>96</td>
<td>$887</td>
<td>1.30</td>
<td>$1,152</td>
<td>$11,827</td>
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<tr>
<td>Eating</td>
<td>439</td>
<td>1.22</td>
<td>536</td>
<td>$3,134</td>
<td>1.48</td>
<td>$4,652</td>
<td>$7,139</td>
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<tr>
<td>Misc.</td>
<td>95</td>
<td>1.15</td>
<td>109</td>
<td>$490</td>
<td>1.29</td>
<td>$630</td>
<td>$5,158</td>
</tr>
<tr>
<td>Drug</td>
<td>65</td>
<td>1.15</td>
<td>74</td>
<td>$1,001</td>
<td>1.29</td>
<td>$1,288</td>
<td>$15,400</td>
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<tr>
<td>Hotels and Motels</td>
<td>78</td>
<td>1.26</td>
<td>98</td>
<td>$735</td>
<td>1.45</td>
<td>$1,069</td>
<td>$9,423</td>
</tr>
<tr>
<td>Auto Repair</td>
<td>50</td>
<td>1.50</td>
<td>75</td>
<td>$761</td>
<td>1.61</td>
<td>$1,226</td>
<td>$15,220</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,584</strong></td>
<td><strong>1.23</strong></td>
<td><strong>1,954</strong></td>
<td><strong>$16,334</strong></td>
<td><strong>1.36</strong></td>
<td><strong>$22,133</strong></td>
<td><strong>$10,312</strong></td>
</tr>
</tbody>
</table>

| Health Care Sector Total | 934 | 1.45 | 1,350 | $18,022 | 1.28 | $23,138 | $19,296 |

Source: Minnesota IMPLAN Group
1996 County Business Patterns, U.S. Bureau of the Census
Analysis by CPAC
The distribution of the indirect and induced effects shows that every major sector in the local economy receives some benefit from having a healthy retail sector (Table 3). These linkages supported 370 additional jobs and $5.8 million in earnings in the local economy in 1996.

### Table 3.

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Direct</th>
<th>Indirect</th>
<th>Induced</th>
<th>TOTAL</th>
<th>Direct</th>
<th>Indirect</th>
<th>Induced</th>
<th>TOTAL*</th>
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<td>Farming, Agricultural Services, Mining</td>
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<td>21</td>
<td>-</td>
<td>20</td>
<td>0</td>
<td>211</td>
<td>91</td>
<td>302</td>
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<tr>
<td>Construction</td>
<td>-</td>
<td>11</td>
<td>5</td>
<td>16</td>
<td>0</td>
<td>211</td>
<td>91</td>
<td>302</td>
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<tr>
<td>Manufacturing</td>
<td>-</td>
<td>8</td>
<td>6</td>
<td>14</td>
<td>0</td>
<td>144</td>
<td>105</td>
<td>249</td>
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<td>Transportation and Public Utilities</td>
<td>-</td>
<td>12</td>
<td>7</td>
<td>19</td>
<td>0</td>
<td>287</td>
<td>158</td>
<td>446</td>
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<td>Trade</td>
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<td>24</td>
<td>113</td>
<td>1,593</td>
<td>$14,838</td>
<td>$383</td>
<td>$1,230</td>
<td>$16,450</td>
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<tr>
<td>Finance, Insurance, &amp; Real Estate</td>
<td>-</td>
<td>13</td>
<td>12</td>
<td>25</td>
<td>0</td>
<td>157</td>
<td>182</td>
<td>339</td>
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<td>Services</td>
<td>128</td>
<td>29</td>
<td>108</td>
<td>265</td>
<td>$1,497</td>
<td>$544</td>
<td>$1,906</td>
<td>$3,947</td>
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<tr>
<td>State and Local Government</td>
<td>-</td>
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<td>5</td>
<td>10</td>
<td>0</td>
<td>169</td>
<td>171</td>
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<td>Other</td>
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<td>Total</td>
<td>1,584</td>
<td>106</td>
<td>264</td>
<td>1,954</td>
<td>$16,334</td>
<td>$1,916</td>
<td>$3,885</td>
<td>$22,135</td>
</tr>
</tbody>
</table>

* May not sum to Table 2 total income due to rounding error

Source: Minnesota IMPLAN Group
1996 County Business Patterns, U.S. Bureau of the Census
Analysis by CPAC

The results in Tables 2 and 3 can be directly compared with the health sector impact results in *The Economic Importance of Health Care in Saline County* report. For example, the health sector directly employs over 900 people and has a payroll of $18 million. The income and employment multipliers for the health sector are 1.28 and 1.45, respectively. Note that the employment multiplier for health services is higher than that for the retail sector. On the other hand, the income multiplier for health services is lower than that for the retail sector. However, the health care sector still generates more direct income than the retail sector. Therefore, the retail sector in Saline County directly generates more jobs, but they are lower paying jobs than those in the health sector. Comparing the relative impacts of different sectors can help the County assess the benefits of focusing development efforts on one sector versus the other.
Retail Trade Analysis by Retail Category

Next, the behavior of selected retail categories in Saline County will be examined in a temporal context. Note that sometimes no analysis is displayed in some years for a particular sector. This is due to data not being reported because of the Missouri Department of Revenue’s data disclosure law. If a sector had less than seven firms represented in the reporting year, the retail sales of that sector were not disclosed. In the charts, this nondisclosed data is denoted with a (D) where the data would have appeared.

The retail categories being analyzed deserve some explanation. First, note that Gasoline Service Stations are reported as part of the Automotive Dealers category based on the 2-digit Standard Industrial Classification (SIC) code. However, Gasoline Stations generate 43.1 percent of total Auto Dealers’ sales (1998 data). Therefore, it is considered important enough to examine the behavior of this retail category by itself. Similarly, Drug and Proprietary Stores are part of the Miscellaneous category when classified at the 2-digit SIC code level. However, the Drug and Proprietary Stores retail category was analyzed separately because it is often considered an important type of retail establishment for a community to have. The Miscellaneous category includes such stores as liquor stores, used merchandise stores, and gun dealers. Finally, two other categories were included in the analysis of retail sales in Saline County: Hotels and Auto Repair Services. Neither of these categories are classified as retail based on their SIC codes. However, both Hotels and Auto Repair Services have a sizable part of their revenues generated by retail sales. Therefore, they were included in the analysis and are referred to as part of the retail trade sector in this report, even though this is not accurate with respect to government data classification.

Table 4 describes the actual and potential sales in Saline County. Potential sales is the level of sales the county could achieve if 100 percent of local demand for retail goods were captured locally. Several types of retail establishments in the County show potential for further growth. In 1998, all retail categories with disclosed data had lower sales than could be expected from the local population (also, see Table 5). The Miscellaneous category lost over $17 million in sales, representing the largest retail leakage for the county. Annual expenditures on Miscellaneous Retail are the highest, compared to other categories. Therefore, if more customers are attracted to or retained by local sellers categorized as Miscellaneous, local sales would experience a noticeable growth. The public sector would

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See Appendix B for detailed description of potential sales.
also benefit through an increase in sales tax revenues that would result from capturing a larger portion of potential sales in the Miscellaneous Retail category.

Table 4.

<table>
<thead>
<tr>
<th>Category* (by SIC code)</th>
<th>1990** Actual Sales ($1,000)</th>
<th>Potential Sales ($1,000)</th>
<th>Leakage/ Surplus</th>
<th>1998 Actual Sales ($1,000)</th>
<th>Potential Sales ($1,000)</th>
<th>Leakage/ Surplus</th>
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</thead>
<tbody>
<tr>
<td>Building</td>
<td>6,135</td>
<td>9,615</td>
<td>-3,480</td>
<td>7,628</td>
<td>10,367</td>
<td>-2,739</td>
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<td>General Merchandise</td>
<td>570</td>
<td>24,195</td>
<td>-23,625</td>
<td>2,462</td>
<td>15,241</td>
<td>-12,778</td>
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<tr>
<td>Food Store</td>
<td>32,522</td>
<td>28,147</td>
<td>4,375</td>
<td>22,223</td>
<td>27,233</td>
<td>-5,010</td>
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<td>Automotive</td>
<td>2,821</td>
<td>4,210</td>
<td>-1,389</td>
<td>2,722</td>
<td>5,802</td>
<td>-3,080</td>
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<tr>
<td>Gas</td>
<td>3,035</td>
<td>2,203</td>
<td>832</td>
<td>2,060</td>
<td>2,409</td>
<td>-349</td>
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<tr>
<td>Apparel</td>
<td>199</td>
<td>5,864</td>
<td>-5,664</td>
<td>(D)</td>
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<tr>
<td>Furniture</td>
<td>4,632</td>
<td>7,555</td>
<td>-2,923</td>
<td>4,626</td>
<td>10,669</td>
<td>-6,043</td>
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<tr>
<td>Eating</td>
<td>11,314</td>
<td>17,487</td>
<td>-6,173</td>
<td>12,968</td>
<td>22,243</td>
<td>-9,275</td>
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<tr>
<td>Drug</td>
<td>(D)**</td>
<td>N/A***</td>
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<td>983</td>
<td>2,303</td>
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<td>Miscellaneous</td>
<td>6,709</td>
<td>18,475</td>
<td>-11,766</td>
<td>35,651</td>
<td>53,134</td>
<td>-17,483</td>
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<tr>
<td>Hotels &amp; Motels</td>
<td>1,914</td>
<td>4,154</td>
<td>-2,240</td>
<td>1,320</td>
<td>5,048</td>
<td>-3,728</td>
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<td>Auto Repairs</td>
<td>1,651</td>
<td>2,634</td>
<td>-983</td>
<td>1,968</td>
<td>3,972</td>
<td>-2,004</td>
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<tr>
<td><strong>Total</strong></td>
<td>71,503</td>
<td>124,539</td>
<td>-53,035</td>
<td>94,611</td>
<td>158,420</td>
<td>-63,809</td>
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</table>

* See appendix A for categories' definitions  ** Data not disclosed  *** Not Applicable

Source: Missouri Department of Revenue, Tax Administration Bureau  
U.S. Bureau of the Census  
Bureau of Economic Analysis  
Analysis by CPAC

Table 5 summarizes trade area capture estimates and pull factors along with the retail sales growth rates for Saline County's retail categories for 1990 and 1998. General Merchandise appears to be the fastest growing category with respect to maintaining or capturing customers within its trade area. The trade area capture for this category in 1998 was nearly 6.6 times bigger than its 1990 level and its pull factor increased 8 times over the 1990 level. The actual percent growth in TAC and PF for this sector should not be over-emphasized, because it is a result of the small 1990 base numbers.

The majority of retail categories in Saline County have experienced a decline in both trade area capture and pull factor over the last 9 years. Hotels and Motels had the biggest decrease in both trade area capture and pull factor among other categories -- more than 40 percent compared to the 1990 level of performance. Two other retail categories -- Building Materials and Miscellaneous retail -- experienced growth in trade area capture and pull.
factor between 1990 and 1998. Hotels and Motels experienced a 31 percent decline in sales between the two years of the analysis.

Table 5.

<table>
<thead>
<tr>
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<tr>
<td>Building</td>
<td>24.3</td>
<td>15,009</td>
<td>16,704</td>
<td>11.3</td>
<td>0.64</td>
<td>0.74</td>
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<td>General Merchandise</td>
<td>331.6</td>
<td>555</td>
<td>3,668</td>
<td>561.3</td>
<td>0.02</td>
<td>0.16</td>
</tr>
<tr>
<td>Food Store</td>
<td>-31.7</td>
<td>27,180</td>
<td>18,526</td>
<td>-31.8</td>
<td>1.16</td>
<td>0.82</td>
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<tr>
<td>Automotive</td>
<td>-3.5</td>
<td>15,764</td>
<td>10,652</td>
<td>-32.4</td>
<td>0.67</td>
<td>0.47</td>
</tr>
<tr>
<td>Gas</td>
<td>-32.1</td>
<td>32,407</td>
<td>19,413</td>
<td>-40.1</td>
<td>1.38</td>
<td>0.86</td>
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<tr>
<td>Apparel</td>
<td>-100.0</td>
<td>799</td>
<td>(D)</td>
<td>N/A</td>
<td>0.03</td>
<td>(D)</td>
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<tr>
<td>Furniture</td>
<td>-0.1</td>
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<td>9,844</td>
<td>-31.7</td>
<td>0.61</td>
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<td>Eating</td>
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<td>13,236</td>
<td>-13.0</td>
<td>0.65</td>
<td>0.58</td>
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<tr>
<td>Drug</td>
<td>N/A**</td>
<td>(D)***</td>
<td>9,696</td>
<td>N/A</td>
<td>(D)</td>
<td>0.43</td>
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<tr>
<td>Miscellaneous</td>
<td>431.4</td>
<td>8,542</td>
<td>15,233</td>
<td>78.3</td>
<td>0.36</td>
<td>0.67</td>
</tr>
<tr>
<td>Hotels &amp; Motels</td>
<td>-31.0</td>
<td>10,840</td>
<td>5,938</td>
<td>-45.2</td>
<td>0.46</td>
<td>0.26</td>
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<tr>
<td>Auto Repairs</td>
<td>19.2</td>
<td>14,748</td>
<td>11,247</td>
<td>-23.7</td>
<td>0.63</td>
<td>0.50</td>
</tr>
</tbody>
</table>

* See Appendix A for category definitions  ** Not Applicable  *** Data not disclosed  **** Calculation based on PF not rounded to 2 digits

Source: Missouri Department of Revenue, Tax Administration Bureau'  
U.S. Bureau of the Census  
Bureau of Economic Analysis  
Analysis by CPAC

The change in the pull factor (PF) measures the success or failure of drawing customers to local retail establishments. It is also used to measure the growth or decline of a particular retail category. Using pull factors, retail categories that show promise for expansion can be easily identified. Previous research indicates that in general, there are three groups of categories that indicate potential future expansion based on their pull factors and the growth rates of their sales. The first group are the categories with pull factors less than one and high growth rates. Second are the categories with very large pull factors and high growth rates. Therefore, even though these categories exceed local demand for their goods, their steady growth can potentially increase these categories’ contribution to the county economy. Finally, retail categories with pull factors just above or below one and moderate growth rates can also be expanded. These categories can make a large potential contribution to the local economy via expansion of direct sales and tax revenues.

As evident from Table 5, Saline County does not have any retail categories with a PF greater than one for 1998. Moreover, only 5 out of 12 categories actually experienced growth in sales between 1990 and 1998. Therefore, the only retail categories that show
promises of expansion in Saline County are those in the first group. These include General Merchandise, Auto Repair Services, Eating and Drinking Places, Miscellaneous Retail and Building Materials. It is worth noting that the expansion of the categories would have greater positive impacts if the expanding categories do not compete for existing customers. An expansion of a retail category should correspond to an increase in demand for retail items. An increase in demand can be caused by attracting customers from outside the trade area and/or inducing local residents to shop more locally.
Figures 7 and 8 are graphical representations of the information contained in Table 5. In analyzing trade area capture for Saline’s retail categories, we observe that not all categories do equally well in providing local customers with their goods and services. Gasoline Service Stations and Food Stores had the highest TACs for 1990 and 1998. They were also among the categories that experienced the biggest decline between 1990 and 1998. General Merchandise had the lowest TAC among disclosed categories.

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Food Stores and Gasoline Service Stations were the only categories with a pull factor larger than one in 1990 (Figure 8). None of the Saline retail categories had a pull factor equal to or larger than one in 1998. Again, Food Stores and Gasoline Service Stations had the highest pull factors in 1998 (0.82 and 0.86, respectively). General Merchandise had the lowest PF among disclosed categories for both years of interest.

**Figure 8.**
Saline County Pull Factor
1990, 1998

![Graph showing pull factors for various retail categories in Saline County for the years 1990 and 1998.](image)

(D): Data not disclosed.

Source: Missouri Department of Revenue, Tax Administration Bureau' U.S. Bureau of the Census Bureau of Economic Analysis Analysis by CPAC
Comparative Analysis by Retail Category

This section examines the changes in both trade area capture and pull factors for Saline County's major retail categories regionally, by comparing each category's results to those of nearby counties.\(^5\) Columbia and Kansas City were not included in this comparative analysis for several reasons. First, both cities attract people from all over the state for shopping. It would be impossible to separate out Saline County residents' contribution to each city's TAC and PF. Also, people tend to travel to these cities to do more than shop. Shopping locally would generally not be a substitute for the shopping done in Kansas City or Columbia. For example, many residents may travel to Columbia to attend a football game or play, and shop as a "by-product" of attending such an event. The counties included in this analysis are those that are adjacent to Saline County.

Pettis and Johnson Counties had the highest TACs for Building Materials among the counties in the area for both 1990 and 1998 (Figure 9). Howard and Lafayette were the only counties whose TACs for Building Materials declined between 1990 and 1998. Saline County’s TAC for this category increased by 11.3 percent from 1990 to 1998.

\(^5\) The pull factor charts for retail categories for Saline County can be found in Appendix C.
Figure 9.
Building Materials, Hardware and Garden Supply
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau'
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Johnson, Lafayette and Pettis Counties had the largest trade area captures for General Merchandise Stores in the area in 1998 (Figure 10). TAC in Johnson County had the fastest growth among the other counties in the area from 1990 to 1998: it increased almost 14 fold. The 1998 TAC for Saline County increased 6.6 times over its 1990 value.

Figure 10.

General Merchandise Stores
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Only two out of eight counties in the area (Cooper and Lafayette) experienced a growth of TAC for the Food Stores category between 1990 and 1998 (Figure 11). Johnson and Pettis had the largest trade area capture estimates in both years of interest. The Food Stores’ TAC for Saline County declined by 32 percent between 1990 and 1998.

Figure 11.

**Food Stores**  
**Trade Area Capture Estimate**  
**1990, 1998**

Source: Missouri Department of Revenue, Tax Administration Bureau'  
U.S. Bureau of the Census  
Bureau of Economic Analysis  
Analysis by CPAC
Johnson and Pettis had the largest TACs for the Auto Dealers category for both 1990 and 1998, with Johnson’s TAC growing by 13.2 percent and Pettis’ by 69.4 percent between the two years (Figure 12). Saline’s TAC for the Auto Dealers declined by 32.4 percent between 1990 and 1998.

**Figure 12.**

Auto Dealers (Excludes Gas Services)
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau’
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
TACs for Gasoline Service Stations for all counties in the area exhibit an interesting pattern: they all experienced a decline between 1990 and 1998 (Figure 13). Lafayette had the largest TAC for the Gasoline Stations category among other counties in both years of interest. The TAC for Saline declined by 40 percent from 1990 to 1998.

**Figure 13.**
Gasoline Service Stations
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau'
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Johnson and Pettis had the largest TACs for the Furniture category (Figure 14). Both of these counties experienced a growth of TAC between 1990 and 1998 (by 10.5 percent and 2.2 percent). The TAC for Saline declined by 31.7 percent between the same years.

Figure 14.
Furniture, Home Furnishings and Equipment
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC

Note that we did not make charts for TAC and PF for Apparel and Drug Stores since very few counties in the area had their data disclosed for these categories.
Again, Johnson and Pettis had the highest TACs for the Eating and Drinking Place category for both 1990 and 1998 (Figure 15). However, while Johnson experienced a 15.3 percent increase in TAC, Pettis’ TAC actually declined by 1.8 percent between 1990 and 1998. Chariton and Howard had the smallest TACs in the area for both years of interest. Saline County experienced a decline of 13 percent in TAC between the same years.

Figure 15.

Eating and Drinking Places
Trade Area Capture Estimate
1990, 1998

Saline County and Adjacent Counties

Source: Missouri Department of Revenue, Tax Administration Bureau'
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Johnson and Pettis had the highest TACs for the Miscellaneous Retail category for both 1990 and 1998 (Figure 16). Both of these counties had large increases in TAC for this category from 1990 to 1998. Johnson’s TAC went up by 180 percent and Pettis’ went up by 140 percent. Carroll, Chariton and Cooper had the smallest TACs compared to the other counties for both 1990 and 1998. Further, these counties experienced a decline in TAC for the Miscellaneous category between 1990 and 1998. Saline County’s TAC for this category increased by about 78 percent between the 2 years of interest.

Figure 16.
Miscellaneous Retail (Excludes Drug and Proprietary Stores)
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau'
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Johnson and Pettis had the largest TACs in this area for both 1990 and 1998 (Figure 17). Moreover, both counties experienced an increase in TAC between the 2 years of the study (by approximately 7 percent and 23 percent). Saline had the smallest TAC for Hotels in 1998. Furthermore, the County experienced a 45 percent decrease in TAC from 1990 to 1998.

Figure 17.
Hotels, Rooming Houses, Camps and Other
Trade Area Capture Estimate
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau' U.S. Bureau of the Census Bureau of Economic Analysis Analysis by CPAC

Note that the chart for the Hotels category includes only the counties whose data were disclosed.
Johnson and Pettis had the highest TACs for the Auto Repair Services category for both 1990 and 1998 (Figure 18). Both of these counties had a significant increase in TAC for this category from 1990 to 1998. Specifically, Johnson County's TAC went up by approximately 35 percent and Pettis' by approximately 17 percent. Carroll, Chariton and Howard had the smallest TACs compared to the other counties for both 1990 and 1998. Moreover, these counties experienced a decline in TAC for the Auto Repair Services category between 1990 and 1998. Saline County's TAC for this category decreased by about 24 percent between the 2 years of interest.

Figure 18.
Auto Repair Services and Gas
Trade Area Capture Estimate
1990, 1998

Pettis County had PFs greater than 1.0 for the majority of retail categories for both 1990 and 1998. For most of the retail categories, Saline County's customer base declined. Other counties near to Saline also had flat or declining TACs for most of the retail categories. This indicates the success of Pettis County's retail sector in drawing customers from nearby areas. The challenge for Saline County will be to try to induce residents to shop locally versus travelling to Pettis County.

Source: Missouri Department of Revenue, Tax Administration Bureau'  
U.S. Bureau of the Census  
Bureau of Economic Analysis  
Analysis by CPAC
Conclusions

Retail Trade Analysis provides local decision-makers with valuable information regarding the current conditions of retail trade in the locality, and compares those conditions with the potential of a community, given the purchasing habits of average Missourians. It also examines the potential that exists for expanding all or some of the retail categories. All retail categories in Saline County had pull factors less than one in 1998. This implies that the county does not capture sales dollars from outside its boundaries and loses its own customers to surrounding counties, nearby trade centers, or mail order for the majority of the retail categories. Moreover, some retail categories experienced a decline in sales between 1990 and 1998, while sales were increasing in nearby counties. Therefore, if the county retail sector can capture more local dollars and attract more customers from outside the county boundaries, the resulting benefit to the retailers, the local economy, and county revenues could be increased.

To induce people to spend more money in Saline County, well-known economic strategies can be implemented. Some of the strategies that can be applied are: capturing more of an existing market, increasing export sales of an existing market, attracting new businesses and industries, and attracting more consumers who earn their income outside the county. Understanding the changes occurring nationally, such as an increase in shopping in large 'supercenters' and over the Internet, will also help Saline County position itself to compete for retail sales dollars. These retail trade analysis results will provide Saline County with information that can be used to identify opportunities that will help satisfy the tastes and needs of those who shop in the County.
Appendix A: Definitions of SIC Categories Used in the Report

The Standard Industrial Classification (SIC) system is used to group retail establishments according to the principal lines of commodities sold (e.g., groceries, hardware, etc.), or the usual trade designation (e.g., drug store, cigar store, etc.). Based on this classification, major subcategories of retail establishments are 52 through 59, with 554 and 591 based on a 3-digit level, and the rest on a 2-digit SIC level. Two sectors designated as service sectors (Hotel and Motels and Auto Repairs) are included in the analysis of retail trade because of the level of retail sales that come from these sectors. To find the full definitions of the Standard Industrial Classification categories please visit <http://www.osha.gov/oshstats/sicser.html>.

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<th>SIC code</th>
<th>Category</th>
<th>Description</th>
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<td>Building Materials, Hardware and Garden Supply</td>
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<td>53</td>
<td>General Merchandise</td>
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<td>Automotive</td>
<td>Auto Dealers (Excluding Gas Services)</td>
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<td>Gas</td>
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<td>Furniture, Home Furnishings and Equipment</td>
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<td>Miscellaneous*</td>
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<td>75</td>
<td>Auto Repairs</td>
<td>Automotive Repair Services and Gas</td>
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* Miscellaneous retail includes liquor stores, used merchandise stores, gun dealers, nonstore retailers, non-auto fuel (propane, coal, etc.), ice dealers, and others.
Appendix B: Definition, Calculation and Interpretation of Retail Trade Analysis Tools

Sales data for the Trade Area Capture, Pull Factors, and Potential Sales were taken from the retail sales reports obtained from the Missouri Department of Revenue’s Tax Administration Bureau. The data are public data, although not commonly published. Population data were obtained from the U.S. Bureau of the Census, Population Estimates Program. Personal income data were obtained from the Bureau of Economic Analysis through their Regional Economic Information System (REIS). Employment and payroll were obtained from 1995 and 1996 County Business Patterns CD-ROM, data published by the U.S Bureau of the Census. Impact analysis was completed using IMPLAN, an input-output analysis program. All dollar amounts have been adjusted for inflation using the Consumer Pricing Index, published by the Bureau of Labor Statistics, U.S. Department of Labor.

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</table>
Trade Area Capture (TAC)

Definition: Trade area capture refers to “the number of customers drawn to a particular community or county to purchase a product or service”\(^8\) based on state average expenditures (retail sales) of that product or service, after adjusting for differences in per capita income between the state and the local area.

Calculation:

\[
\text{County TAC for Subsector } i = \left( \frac{\text{County Retail Sales for Subsector } i}{\text{State Per Capita Retail Sales for Subsector } i} \right) \times \left( \frac{\text{State Per Capita Income}}{\text{County Per Capita Income}} \right)
\]

Interpretation: This measure uses state retail sales levels, adjusted for income differences, to determine the customer base of the local area. If the trade area capture is larger than the population of the county, then the county is assumed to be attracting customers from outside its borders. It could also be assumed that local residents spend more money on retail than the state average. If the trade area capture is less than the county’s population, then the community is either not capturing the commercial purchases of its own residents or local residents are spending relatively less on retail sales than the state average.

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\(^8\) Harris, Thomas. 1996. "Trade Area Analysis." Presented at Missouri Cooperative Extension Educators Workshop.
Pull Factor (PF)

*Definition:* Pull factor estimates “the portion of customers that a community draws from outside its boundaries”\(^9\). This measure helps identify export and import sectors.\(^{10}\)

*Calculation:*

\[
\text{County PF for Subsector } i = \left( \frac{\text{County TAC for Subsector } i}{\text{County Population}} \right)
\]

*Interpretation:* Virtually the same as that for trade area capture. Namely, if the PF is greater than 1.0, the community is attracting consumers from outside its borders or local people are spending more on retail sales than the state average. In either case, the retail category would be considered an exporter. If the PF is less than one, then the retail category would be identified as an importer. The PF, when calculated over time, gives decision-makers an understanding of the community’s market capture efficiency.

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\(^{10}\) A category is referred to as an “exporting” category if it not only satisfies the demands of the local community for a particular good in question, but administers sales of this good to non-local residents: tourists, transients, in-commuters and others (Cox and Alwang, 1996).
Potential Sales (PS)

Definition: The PS measure is used to estimate the retail sales levels that could be achieved if each retail category captured 100 percent of the local market, assuming average state expenditure levels.

Calculation:

\[
\text{County PS for Subsector } i = \left( \frac{\text{County Retail Sales for Subsector } i}{\text{County PF for Subsector } i} \right) \]

Interpretation: Potential sales give the dollar amount that each retail category would have achieved in sales if this category reached the statewide per capita level of sales (adjusted for the income differences between the state and the locality). Comparison of potential sales with actual sales yields the surplus or leakage in sales for this particular category. If potential sales fall behind the actual sales, there is a surplus in this retail category and the category is considered an exporter. On the other hand, leakage occurs when potential sales exceed the actual sales. In this case, the category is losing money because people are going outside of the locality to purchase some of the goods and services provided by the retail category.
**Example**

This example is for the Food category for Saline County. The data are for 1990. Dollar values have been adjusted for inflation (1998 dollars).

**Data for Saline County**

- Population: 23,523
- Per Capita Income: $18,602
- Total Retail Sales: $146,165,004
- Food Stores' Sales: $32,522,025

**Data for Missouri**

- Population: 5,116,901
- Per Capita Income: $22,023.00
- Total Retail Sales: $47,792,150,206.00
- Food Stores' Sales: $7,248,600,236.00
- State Per Capita Food Sales: $1,416.60

**Trade Area Capture (TAC) calculation:**

\[
\text{County TAC for Food Subsector} = \left( \frac{32,522,025}{1,416.60} \right) \times \left( \frac{22,023}{18,602} \right)
\]

TAC = 27,180 (persons)

**Pull Factor (PF) calculation**

\[
\text{County PF for Food Subsector} = \left( \frac{27,180}{23,523} \right)
\]

PF = 1.16

**Potential Sales (PS) calculation:**

\[
\text{County PS for Food Subsector} = \left( \frac{32,522,025}{1.16} \right)
\]

PS = $28,146,611
Appendix C: Input-Output Modeling

Input-output (I/O) modeling was first developed in the late 1930s and has become widely used in regional economics since that time. I/O provides a framework for measuring the linkages among sectors (a term used interchangeably with 'industries') in a region's economy. The model is based on observed economic data for a specific geographical area (e.g. a county, state, or nation). The transactions table, the basis of the input-output system, keeps track of the flow of goods from each sector to other sectors and the final consumers. The flow of one sector's output to other industries reflects the inter-sectoral linkages in an economy. Goods sold to households, to the government or as exports are considered final demand.

There are several assumptions that are important to know in order to understand the strengths and limitations of I/O. The first assumption is that there is a fixed proportion of inputs for each unit of output. Fixed proportions imply that there are no substitutions between inputs, regardless of price changes or new technology. In addition, all of the firms in a sector are assumed to need the same average mix of inputs. For example, if a sector called "vehicle construction" included firms that produce full-sized trucks and firms that produce golf-carts, I/O assumes the same proportion of inputs, capital, and labor are used in both types of firms. Fixed proportions also signify that small and large producers have the same input mix and efficiency in production. Another assumption is constant returns to scale. That is, in order for output to double, all of the inputs used in production must double. Also, because there are no resource constraints, there is no assumed production capacity.

IMpact analysis for PLANning: IMPLAN

In the past, to use I/O in a study, a lot of time and money was needed in order to collect necessary primary and secondary data and to set up the I/O model. Today, there are several pre-packaged I/O models available to researchers that can run on personal computers. One of the more popular models is called IMpact analysis for PLANning (IMPLAN). IMPLAN contains comprehensive national data that is used to estimate regional data on a county-by-county basis. This model allows the researcher to specify the geographic region of interest. In addition, the model is relatively easy to modify to include primary or more recent data. It is this flexibility that makes IMPLAN very effective in meeting the needs of various researchers.
IMPLAN is used in the creation of scenarios in conjunction with the Show Me Model. This model is frequently used to generate estimates of total employment and income when a community is interested in knowing the impacts of an economic development event. A change in employment or income has a multiplier effect because of the inter-industry linkages in the local economy. IMPLAN measures these linkages. The Show Me Model is then used to allocate the estimated changes in employment and income over several years. The fiscal, economic, and demographic projections that are made in a scenario now incorporate the new circumstances. The scenario results, when compared to the baseline, provide valuable information that can be used in local decision making.
Appendix D: Pull Factor Figures of Retail Categories for Saline and Nearby Counties

This appendix contains the pull factor figures that match the trade area capture figures used in the main body of this report. For example, Figure C9 is the pull factor figure that goes with Figure 9, the trade area capture figure for the Building Materials category. Interpretation of the pull factor figures has been done for the first category. The remaining PF charts can be interpreted in a similar fashion.

Pettis County had the highest pull factor for the Building Materials category for both 1990 and 1998 (Figure C9). Pettis was also the only county in the area that had a PF greater than one in both 1990 and 1998. Thus, the Building Materials category in Pettis County not only satisfies the local demand for these materials, but also “exports” its surplus – that is, it either sells to people who reside outside the community or the average Pettis County resident purchases more from this retail category than do average Missourians.

Building Materials in all other counties is an importing category meaning that residents of these counties purchase some of the demanded building materials outside their counties’ borders. With the exception of Howard and Lafayette, the PF for the counties in the area experienced growth between 1990 and 1998. Howard County also had the smallest PF for Building Materials in the area (0.03 -- in 1990 and 0.02 -- in 1998). Therefore, Howard’s Building Materials category fails to draw customers to local retail firms. In other words, local demands for Building Materials in Howard are not being met. Saline’s PF for this category increased by 15.3 percent between the two years of the study.
Figure C9.
Building Materials, Hardware and Garden Supplies
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC

Figure C10.
General Merchandise Stores
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Figure C11.
Food Stores
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC

Figure C12.
Auto Dealers (Excludes Gas Services)
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Figure C13.
Gas Service Stations
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC

Figure C14.
Furniture, Home Furnishings and Equipment
Pull Factor
1990, 1998

(D): Data not disclosed.

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Figure C15.
Eating and Drinking Places
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC

Figure C16.
Miscellaneous Retail (Excludes Drug and Proprietary Stores)
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC
Figure C17.
Hotels, Rooming Houses, Camps and Other
Pull Factor
1990, 1998

(D): Data not disclosed.

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC

Figure C18.
Auto Repair Services and Gas
Pull Factor
1990, 1998

Source: Missouri Department of Revenue, Tax Administration Bureau
U.S. Bureau of the Census
Bureau of Economic Analysis
Analysis by CPAC