

# Foundations of Practice

*Community Development  
Core Competencies for  
Extension Professionals in  
the North Central region*

Community Economics



# Bill Pinkovitz



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Bill has worked for University of Wisconsin Extension (UWEX) for over twenty years. He has held positions in both Cooperative Extension and Continuing Education Extension. Bill is a professor at the UWEX Center for Community Economic Development (CCED). Previously, he served as the associate dean for the UWEX Division of Continuing Education Extension and as state director UWEX Small Business Development Center. Bill began his Extension career in 1977 as a County resource agent in Crawford County, Wisconsin. The focus of Bill's work is business and community economic development. Current projects include:

- **Community Indicators:** A series of online templates that provide easy access to online data in an easy-to-use, educational format.
- **Building Communities Educational Series:** Now in its third year, this web-based educational series serves a national audience of community and economic development professionals.
- **Economic Snapshots:** A weekly series in the *Wisconsin State Journal* that includes a variety of localized economic and business data.
- **Big Boxes and other Carnivores:** An educational initiative that provides new insights into big box retailers and teaches people how to conduct their own corporate intelligence.
- **Entrepreneurship:** A long standing program emphasis that has again risen to the top through involvement in the Wisconsin Agricultural Innovation Center and the CNRED Entrepreneurship Team.

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# Learning Objectives

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- Define **local economy**
- Learn how money and resources
  - flow into and out of a community
  - circulates within a community.
- Learn the meaning, and importance of a community's **basic** industries
- Learn how to use **traditional** economic analysis tools to gain insights into local economies.
- Learn how to access and use new powerful **web based tool** to analyze local economies

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# Learning Objectives

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- Awareness
- Understanding
- Confidence
- Readiness

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# Things to Remember

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- There is NO SINGLE NUMBER
- Compare Communities
- Trend Analysis
- Reality Check
  - For the community
  - From the community
- Seldom Provides Answers

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# Community Economics

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- **Defining a Community's Economy**
- How money and resources flow into and out of the local economy
- How money circulates in the local economy
- Basic industries and economic growth
- Traditional Community Economic Analysis
- Cool NEW Tools

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# A Few Definitions

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**com·mu·ni·ty** a group of people in a physical setting with geographic, political, social, and economic boundaries, and with discernable communication linkages.

*Shaffer, et al*

**e·con·o·my** a system of human activity directed toward meeting human needs and wants by the deliberate allocation of scarce resources (land, labor, raw materials, and capital).

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# A Few Definitions

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**e·con·o·mic growth** more jobs, more income, more sales, more customers.

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**e·con·o·mic de·vel·op·ment** social, environmental, and economic change to enhance quality of life

*Shaffer, et al*



# Community Economics

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- Defining a Community's Economy
- **How money and resources flow into and out of the local economy**
- **How money circulates in the local economy**
- Basic industries and economic growth
- Traditional Community Economic Analysis
- Cool NEW Tools

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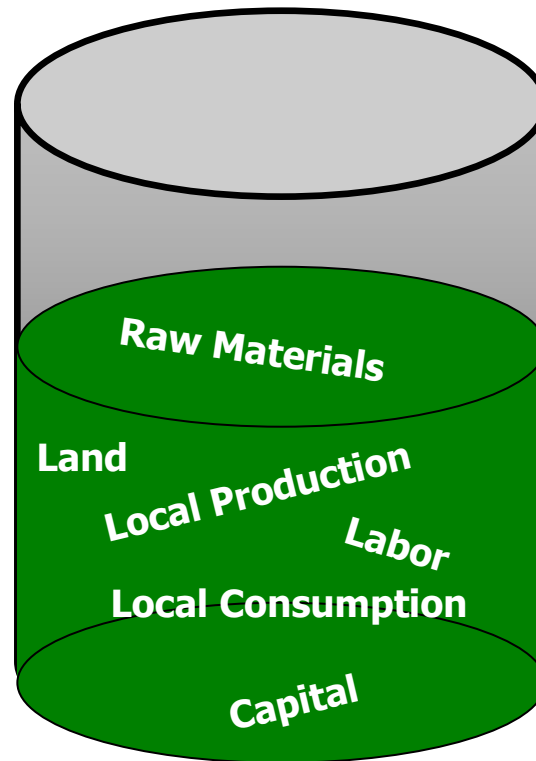
# The Local Economy

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# Dollars flow into the local economy in several ways:

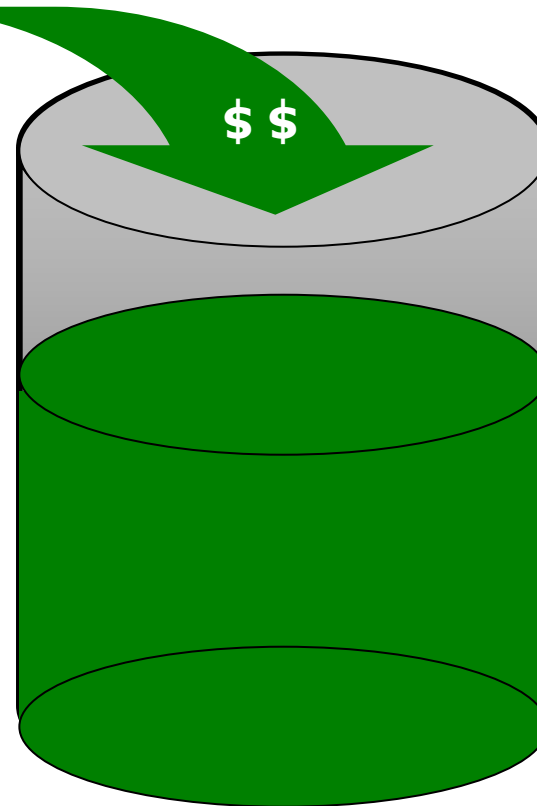
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Local goods and services  
sold outside community



Raw Materials  
Manufactured Goods  
Labor  
Insurance  
Transportation  
Financial Services  
Capital



# Dollars flow into the local economy in several ways:

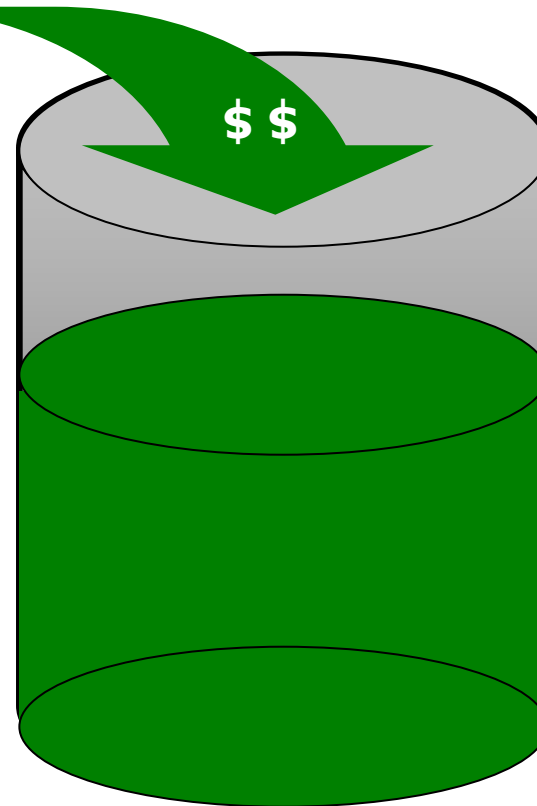
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Visitors purchasing Local  
goods and services



Tourists  
Regional Mall  
University  
Health Care  
Second Homes



# Dollars flow into the local economy in several ways:

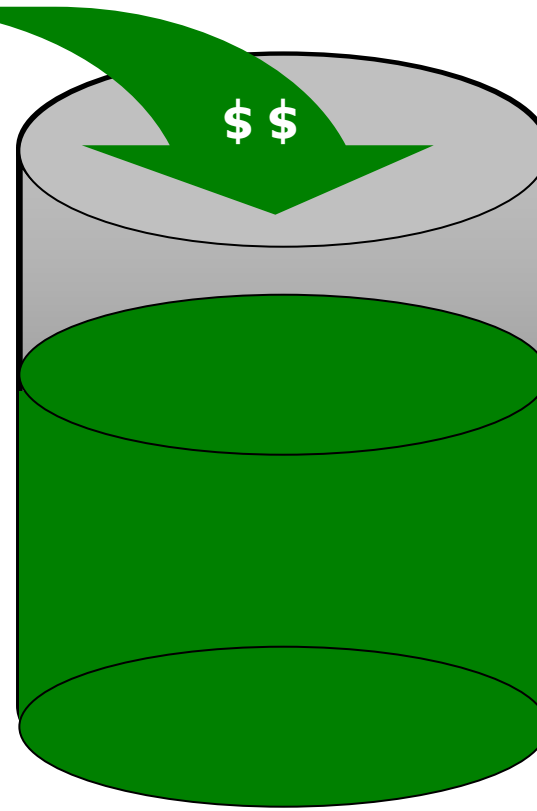
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Public dollars flowing into to  
community AND other "non-  
earned income"



Social Security  
Gov. Purchases  
Federal Grants  
Government Offices  
Military Bases  
Dividends  
Interest  
Capital gains  
Rent



# Dollars leak out of the local economy in several ways:

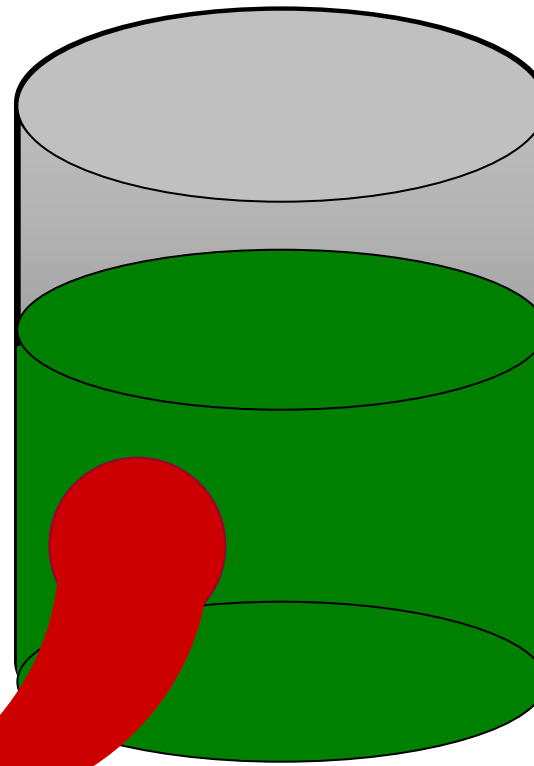
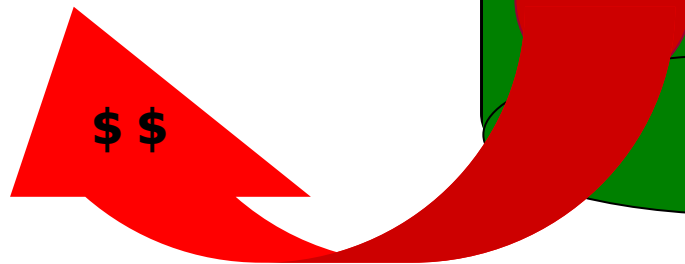
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Local businesses  
purchasing goods and  
services outside the  
community



Raw Materials  
Inventory  
Equipment  
Labor  
Capital  
Professional Services  
Financing  
Investments



# Dollars leak out of the local economy in several ways:

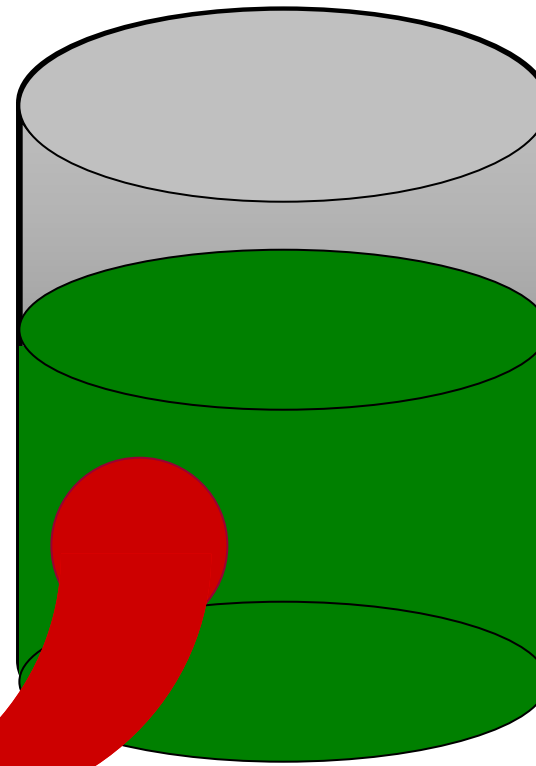
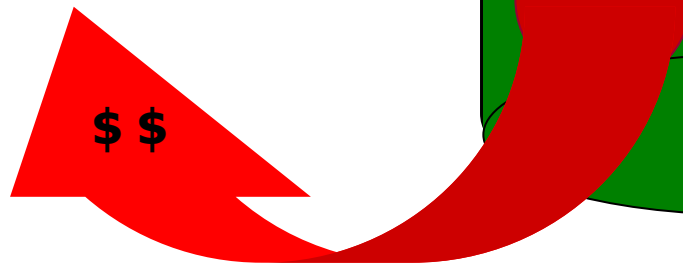
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Local consumers  
purchasing goods and  
services outside the  
community



Regional Malls  
Internet Sales  
Travel  
Transportation  
Financial Services  
Investments/Savings



# Dollars leak out of the local economy in several ways:

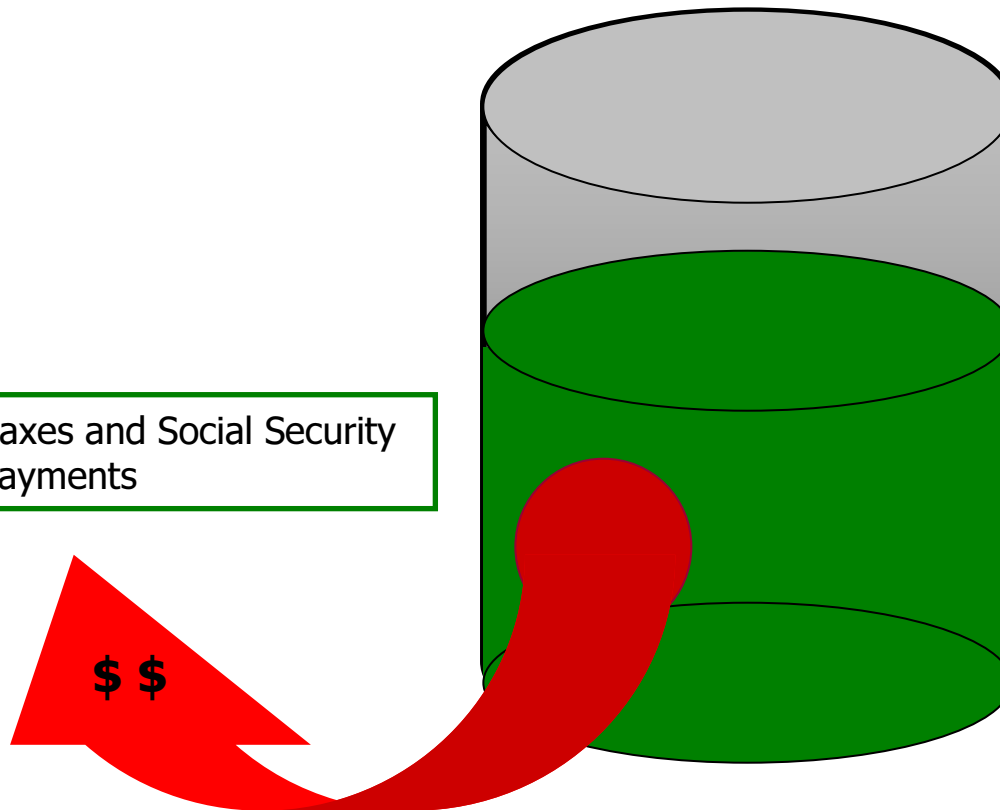
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Taxes and Social Security  
Payments



Federal/State Taxes  
Social Security Taxes



# Dollars leak out of the local economy in several ways:

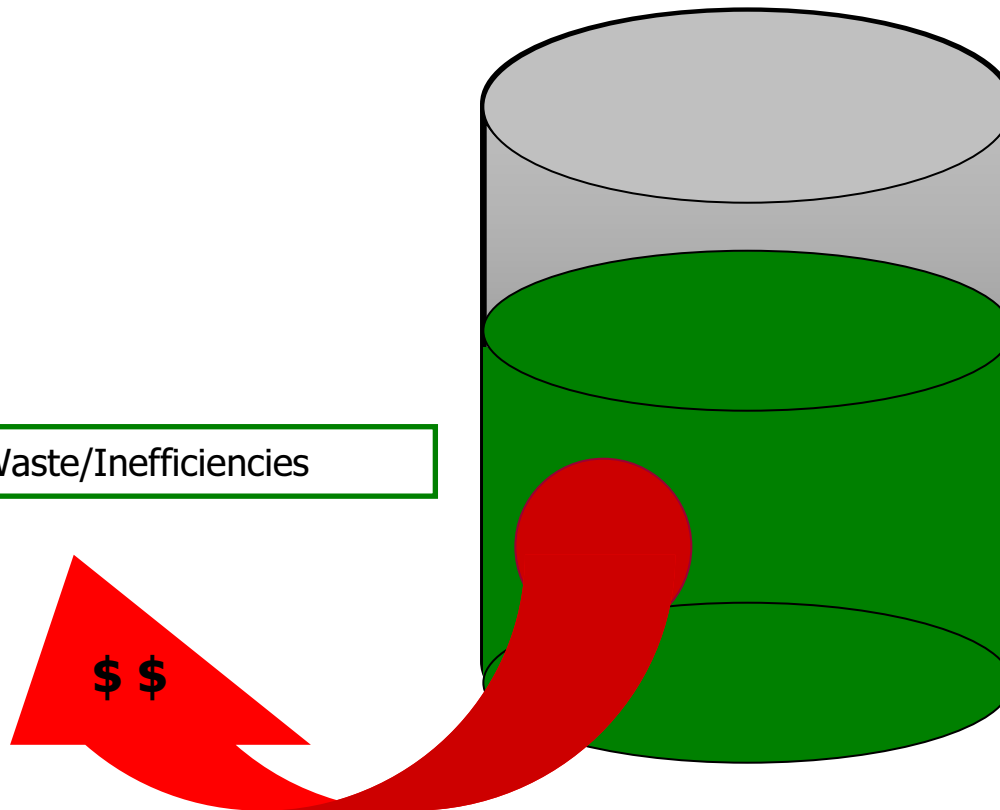
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Waste/Inefficiencies



Natural Resources  
Inefficiencies  
Opportunity Costs



# Dollars/Goods/Services Flows

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## BUSINESS

- Dairy Farm
- Local Window Manufacturer
- Regional non-Profit Hospital
- Wal-Mart
- Local Flower Shop
- Local Grocery Store

## IN/OUT FLOWS

- Raw Materials
- Sales/Customers
- Manufactured Goods
- Labor
- Insurance
- Transportation
- Financial Services
- Capital

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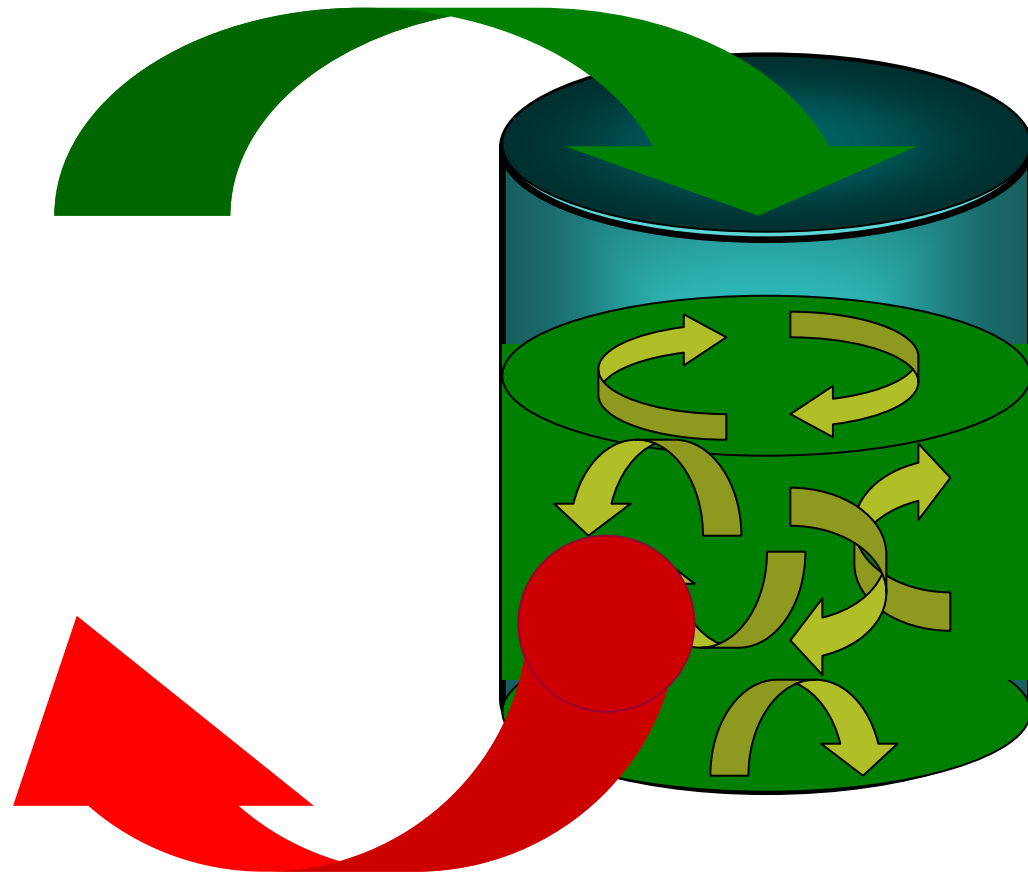
# Dollars also circulate in the local economy:

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# Community Economics

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- Defining a Community's Economy
- How money and resources flow into and out of the local economy
- How money circulates in the local economy
- **Basic industries and economic growth**
- Traditional Community Economic Analysis
- Cool NEW Tools

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# How Does the Local Economy Grow?

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Increase **INFLOWS**

Decrease **OUTFLOWS**

Increase the **TRADE AREA**

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# Strategies to Grow the Economy

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Attract new **basic employers**

Improve the efficiency of **existing firms**

Improve ability to **capture dollars**

Encourage **business formation**

Increase aids from broader **governments**

Building **local capacity**

*Glen Pulver*

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# Growth ≠ Development

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- Growth and Development are not always synonymous
- They are not mutually exclusive
- One can occur without the other
- Both can be positive

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# Equity, not just Equality

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***Development means equity, not just equality***

***Equality*** means that everyone has shoes

***Equity*** means that everyone's shoes FIT

Shaffer, et al

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# Attract New Basic Employers

## a.k.a Export Employers

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A basic employer is a business that brings money into the community. Businesses that sell most of their goods/services to non-local markets. A business where the inflow of dollars into the community exceeds the outflow of dollars from the community. Typically, basic employers include:

Manufacturing

Farming

Mining

Tourism

Universities/Colleges

Hospitals

Insurance Companies

Transportation

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# Non-Export Businesses

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Businesses that primarily serve the needs of the local consumers are called non-export businesses.

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# Why the FOCUS on Export Businesses?

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Basic (Export) businesses provide the best opportunity to create additional jobs and income in a community.

Unless a community is growing rapidly, or its trade area is expanding significantly, increasing the number of non-export businesses simply means that the pie (market) will be cut into smaller slices, or existing businesses will disappear as new ones emerge.

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# Community Economics

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- How money circulates in the local economy
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- **Traditional Community Economic Analysis**
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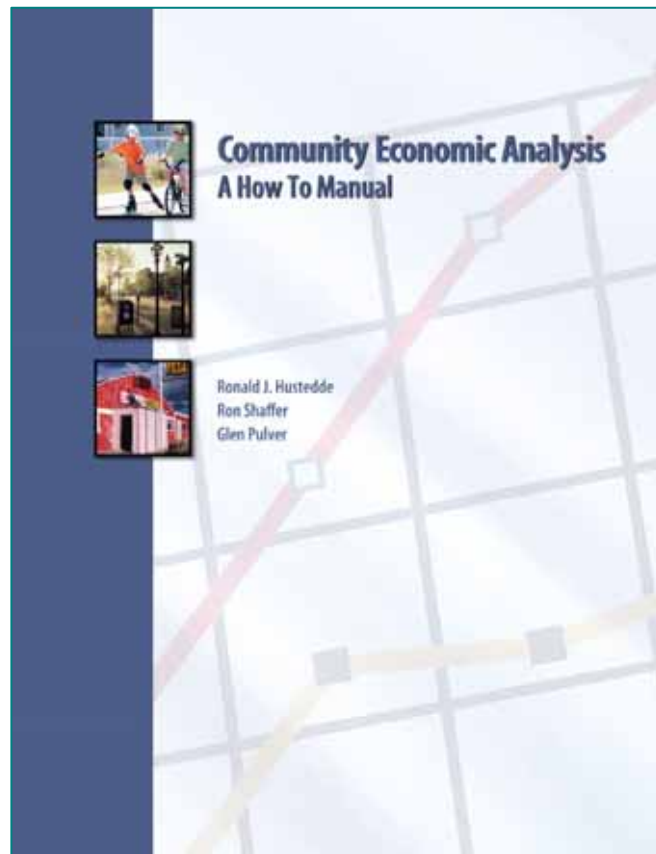
# Community Economic Analysis

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Defining a Community's Trade Areas

Identifying Basic Industries (Export Businesses) in a Community

Identifying the Competitive Sectors in a Community

Estimating the Total Impact of Economic Activities

<http://www.ag.iastate.edu/centers/rdev/pubs/title.htm>



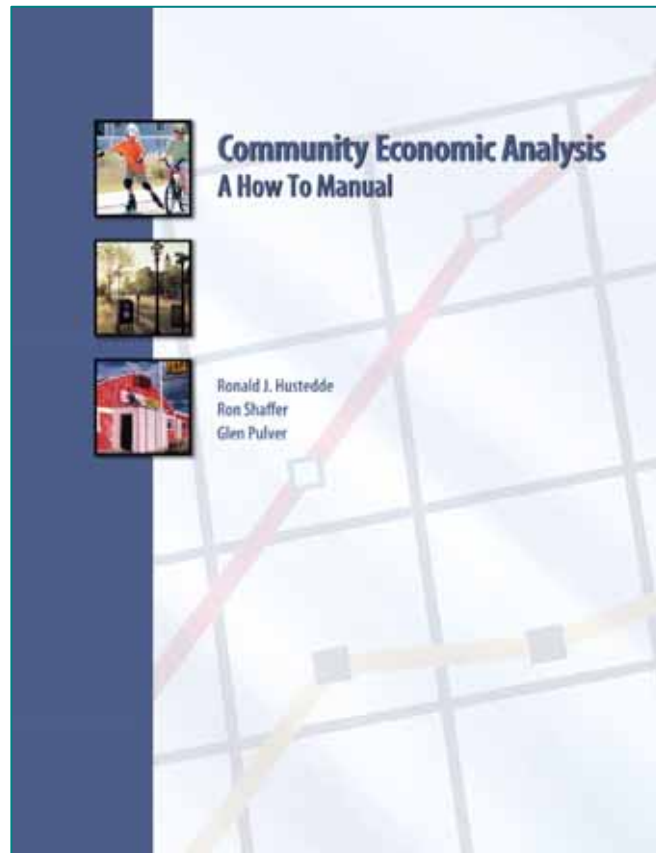
# Community Economic Analysis

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## Defining a Community's Trade Areas

Identifying Basic Industries  
(Export Businesses) in a  
Community

Identifying the Competitive  
Sectors in a Community

Estimating the Total Impact of  
Economic Activities

<http://www.ag.iastate.edu/centers/rdev/pubs/title.htm>



# Defining Trade Areas: Traditional Methods

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Reilly's Law

Pull Factor

Surplus/Leakage

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# Defining Trade Areas:

## Reilly's law

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**Reilly's Law:** Method for determining a community's retail trade area.

Based on the premises that:

- 1) People are attracted to larger communities to shop.
- 2) People's willingness to travel to shop is influenced by time and distance.

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# Defining Trade Areas

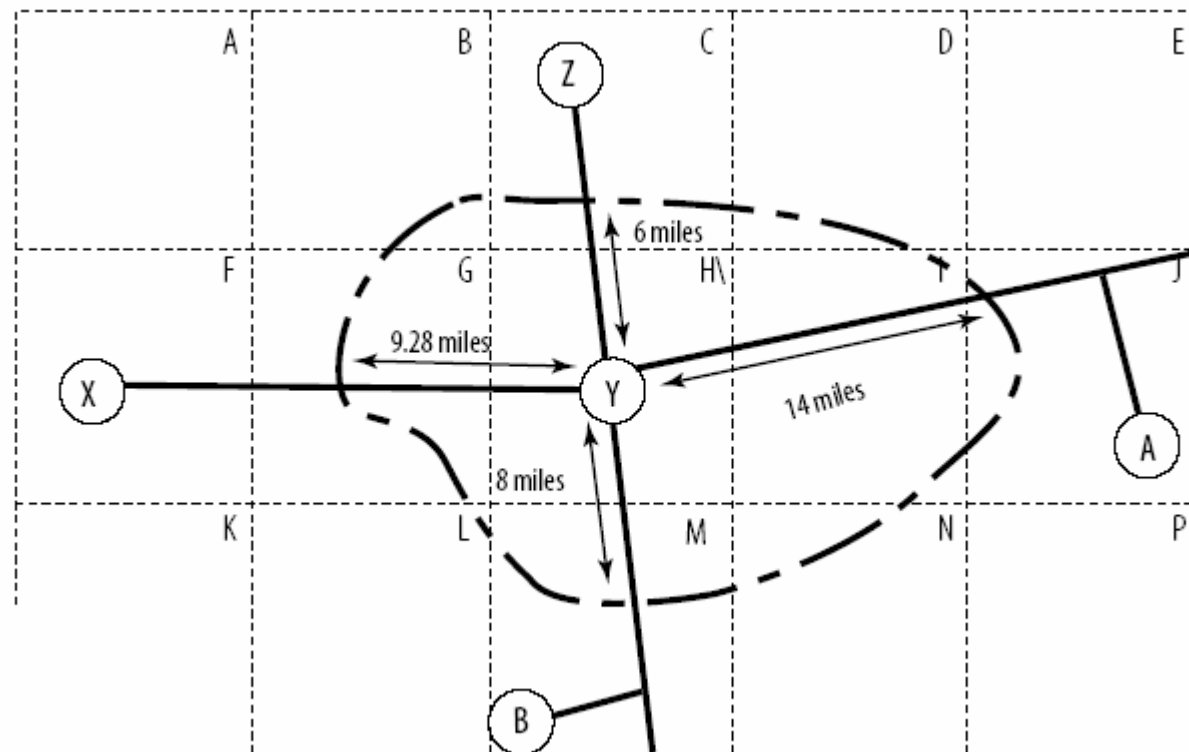
## Reilly's Law

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# Defining Trade Areas: Reilly's law

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$$\text{Breaking Point} = \frac{\text{Distance between City X and City Y}}{1 + \sqrt{\frac{\text{Population of Larger Community}}{\text{Population of Smaller Community}}}}$$

- An adaptation of Gravity Theory
- Based on Newton's Law of Universal Gravitation
- The **Breaking Point** defines the boundary between the two cities

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# Gravity Model

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$$\frac{\text{population}_1 \times \text{population}_2}{\text{distance}^2}$$

- Measures the relative strength of the bond between two places
- Used to predict the movement of people, commodities and information between geographic places
- Based on Newton's Law of Gravitation
- A function of the relative size and distance between two places
- Based solely on observation

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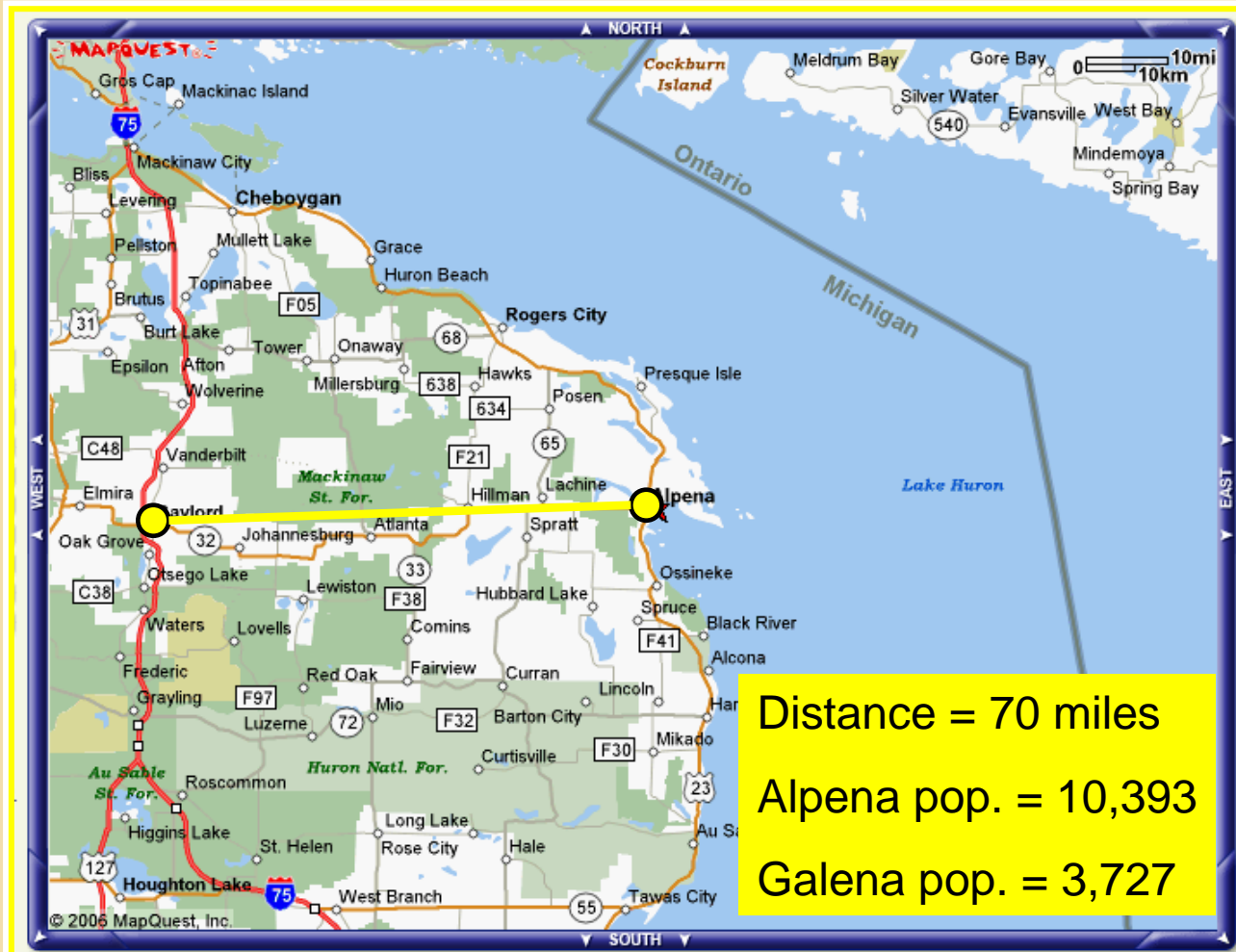
# Alpena, Michigan

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# Reilly's Law

## Alpena, MI and Galena MI

Distance = 70 miles

Alpena pop. = 10,393

Galena pop. = 3,727

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$$\text{Break Point} = \frac{\text{Distance between City X and City Y}}{1 + \sqrt{\frac{\text{Population of Larger Community}}{\text{Population of Smaller Community}}}}$$

$$= \frac{70 \text{ miles}}{1 + \sqrt{\frac{10,939}{3,727}}}$$

$$= \frac{70 \text{ miles}}{1 + 1.67} = 22.2 \text{ miles}$$

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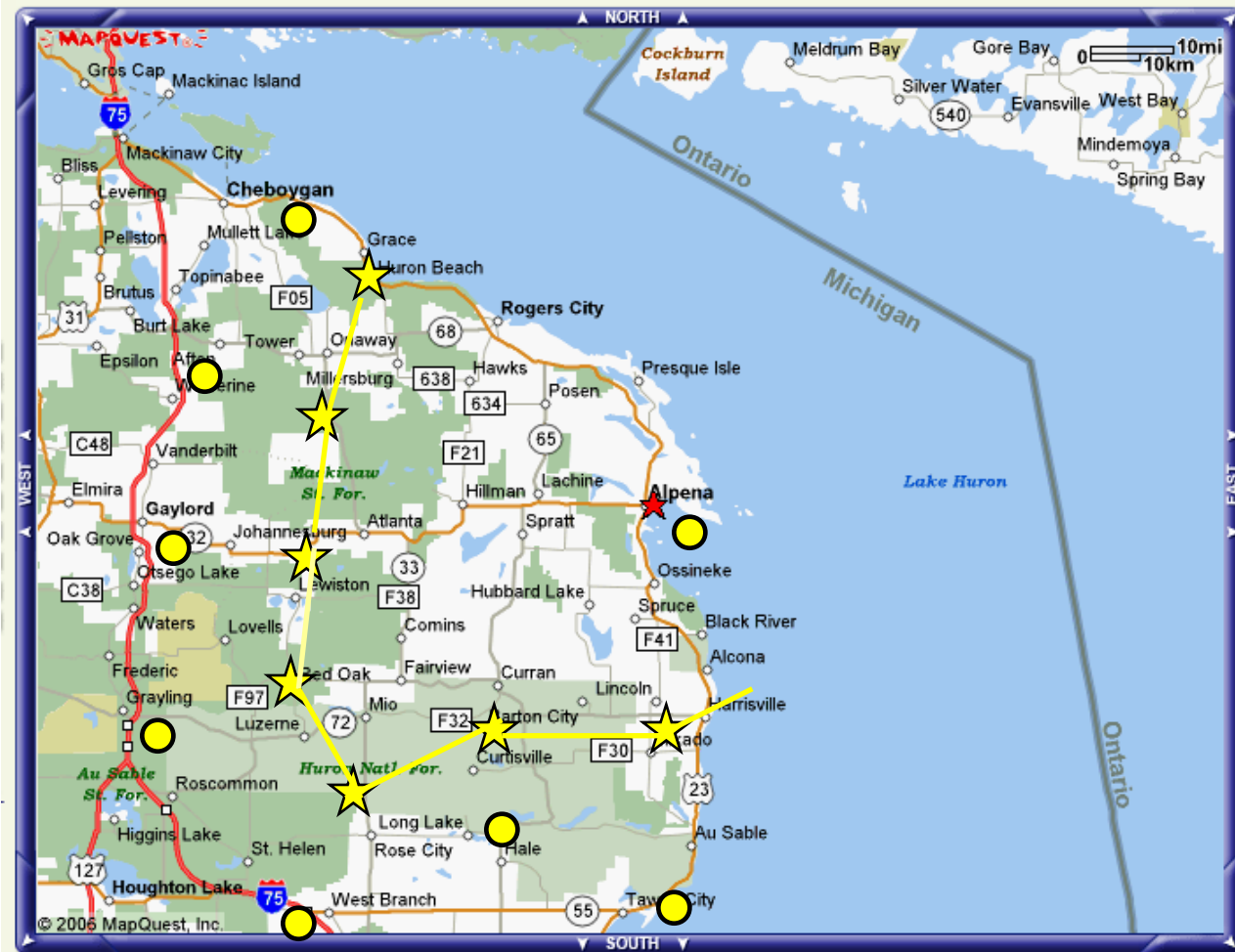
# Alpena, Michigan Trade Area

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# Defining Trade Areas:

## Reilly's law: EXERCISE

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Break Point =

$$\frac{\text{Distance between City A and City B}}{1 + \sqrt{\frac{\text{Population of Larger Community}}{\text{Population of Smaller Community}}}}$$

Distance between City A and City B = 26 miles

| <b>Community</b> | <b>Total Population (2000)</b> |
|------------------|--------------------------------|
| City A           | <b>4,000</b>                   |
| City B           | <b>16,000</b>                  |
|                  |                                |

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# Defining Trade Areas:

## Reilly's law: EXERCISE

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$$\begin{aligned}\text{Break Point} &= \frac{26 \text{ miles}}{1 + \sqrt{\frac{16,000}{4,000}}} \\ &= \frac{26 \text{ miles}}{1 + \sqrt{4}} \\ &= \frac{26}{3} = 8.67 \text{ miles}\end{aligned}$$



# Reilly's Law

## Some CAVEATS

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- Presumes the population in comparative communities is relatively homogeneous
- Does not work well for urban areas. Use only for rural communities
- Best when used with similar sized communities
- Assumes that everyone shops locally for locally available goods
- Some goods and services have larger trade areas

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# Reilly's Law

## Some More CAVEATS

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- Worker Flow
- Interstate highways and highway bypasses
- Regional shopping malls
- Big Boxes
- The internet
- Shopping versus convenience

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# Defining Trade Areas:

## Pull Factors

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**Pull Factors:** Provide a net measure of a communities ability to capture sales from local and non-local consumers for specific products or services.

- Pull Factor = actual sales ÷ potential sales
- Sales tax records and the U.S. Census of Retail Trade are the most common sources of **Actual Sales** data
- **Projected Sales** are a function of per capita sales, population, and per capita income

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# Defining Trade Areas:

## Pull Factors: Actual Sales

[http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)

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The screenshot shows the top navigation bar of the American FactFinder website. It includes the U.S. Census Bureau logo, the 'American FactFinder' search bar, and navigation links for 'Main', 'Search', 'Feedback', 'FAQs', and 'Glossary'. Below the navigation bar, there is a 'Detailed Statistics' section with a breadcrumb trail: 'You are here: Main > Data Sets > Select an Economic Data Set > Results'. A secondary navigation bar contains the text 'Use the menus to change your results' followed by links for 'Options', 'Filter Rows', and 'Print'.

$$\text{Pull Factor} = \text{actual sales} \div \text{potential sales}$$

### 2002 Economic Census

Release Date: 8/18/2005

#### Sector 44: Retail Trade: Geographic Area Series: Summary Statistics: 2002

[NOTE: Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, non-response, and other information, see the [Survey Methodology](#). Data in this table represent those available when this report was created; data may not be available for all geographies. Data in this table may be subject to employment- and/or sales-size minimums that vary by industry.]

| Geographic Area Name | 2002 NAICS code | Meaning of 2002 NAICS code                | Footnote id | Year | Number of establishments | Sales (\$1,000) |
|----------------------|-----------------|---|-------------|------|--------------------------|-----------------|
| Alpena County, MI    | 44711           | Gasoline stations with convenience stores |             | 2002 | 15                       | 26,757          |
| Alpena County, MI    | 447110          | Gasoline stations with convenience stores |             | 2002 | 15                       | 26,757          |
| Alpena County, MI    | 448             | Clothing & clothing accessories stores    |             | 2002 | 21                       | 18,653          |
| Michigan             | 448             | Clothing & clothing accessories stores    |             | 2002 | 4,792                    | 4,917,700       |

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# Defining Trade Areas:

## Pull Factors: Potential Sales

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Pull Factor = actual sales ÷ **potential sales**

$$\text{Potential Sales} = S_k \times P_l \times Y$$

$$S_k = \text{Sales/capita}_{\text{state}} = \text{Actual sales}_{\text{state}} \div \text{Population}_{\text{state}}$$

$$P_l = \text{Population}_{\text{local}}$$

$$Y = \text{Income factor} = \frac{\text{per capita income}_{\text{local}}}{\text{per capita income}_{\text{state}}}$$

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# Defining Trade Areas: Pull Factors: Population and Income

[http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)

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## Detailed Tables

You are here: [Main](#) ▶ [Data Sets](#) ▶ [Data Sets with Detailed Tables](#) ▶ [Geography](#) ▶ [Tables](#) ▶ [Results](#)

Use the links above to change your results

| [Options](#) | [Print / Do](#)

[P1. TOTAL POPULATION \[1\] - Universe: Total population](#)

Data Set: [Census 2000 Summary File 3 \(SF 3\) - Sample Data](#)

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see <http://factfinder.census.gov/home/en/datanotes/expsf3.htm>.

|       | Michigan  | Alpena County, Michigan |
|-------|-----------|-------------------------|
| Total | 9,938,444 | 31,314                  |

U.S. Census Bureau  
Census 2000

Population

[P82. PER CAPITA INCOME IN 1999](#)

Data Set: [Census 2000 Summary File](#)

$\text{per capita income}_{\text{local}} \div \text{per capita income}_{\text{state}}$

NOTE: Data based on a sample except in P3, P4, H3, and H4. For information on confidentiality protection, sampling error, nonsampling error, definitions, and count corrections see <http://factfinder.census.gov/home/en/datanotes/expsf3.htm>.

|                           | Michigan | Alpena County, Michigan |
|---------------------------|----------|-------------------------|
| Per capita income in 1999 | 22,168   | 17,566                  |

U.S. Census Bureau  
Census 2000



# Defining Trade Areas:

## PF: Clothing Stores (Alpena County)

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$$\text{Potential Sales} = S_k \times P_l \times Y$$

$$S_k = \text{Sales/capita}_{\text{state}} = \$4,917,700,000 \div 9,938,444$$

$$= \mathbf{\$494.81}$$

$$P_l = \text{Population}_{\text{local}} = \mathbf{31,314}$$

$$Y = \text{Income factor} = \$17,566 \div \$22,168 = \mathbf{.79}$$

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# Defining Trade Areas:

## PF: Clothing Stores (Alpena Co)

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$$\text{Potential Sales (PS)} = S_k \times P_l \times Y$$

$$= \$494.81 \times 31,314 \times .79$$

$$= \$12,240,639$$

$$\text{Actual Sales (AS)} = \$18,653,000$$

$$\text{Pull Factor} = AS - PS = 1.52$$

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# Defining Trade Areas: Surplus/Leakage

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**Surplus/Leakage = Actual Sales – Potential Sales**

If S/L is positive, then a Surplus and net sales are flowing into the community

If negative, then a net outflow of sales

Alpena County, Michigan

$$S/L_{\text{clothing stores}} = \$18,653,000 - \$12,240,639 = \$6,412,361$$

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# PF and Surplus/Leakage

## Some CAVEATS

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- Should be used mainly for comparison between communities over time
- They reveal that a decline or increase occurred, but not WHY
- No definition of what constitutes a “good” or “bad” Pull Factor.

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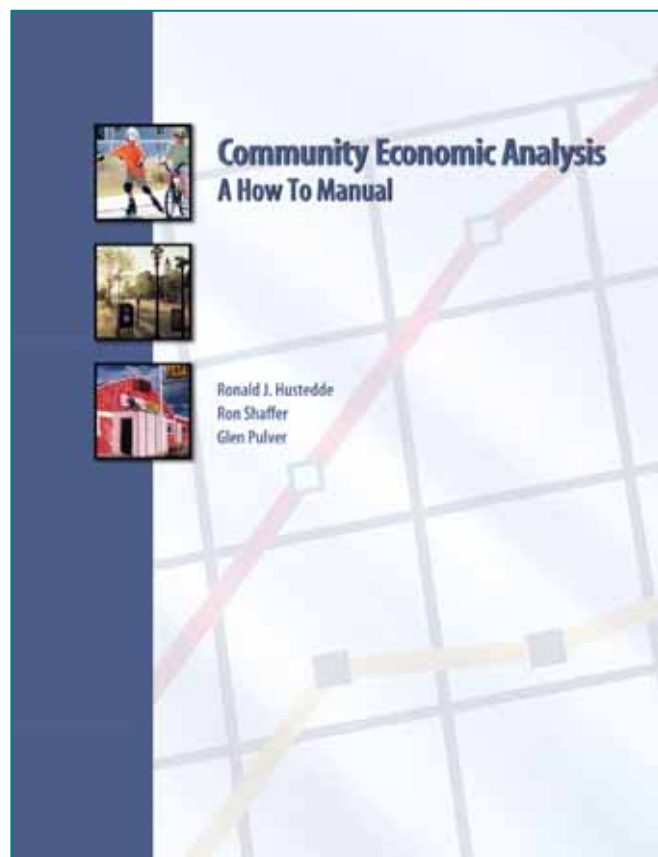
# Community Economic Analysis

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Defining a Community's Trade Areas

Identifying Basic Industries (Export Businesses) in a Community

Identifying the Competitive Sectors in a Community

Estimating the Total Impact of Economic Activities

<http://www.ag.iastate.edu/centers/rdev/pubs/title.htm>



# Identifying Export Businesses

## Location Quotients

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**Location Quotient:** A simple index that helps identify export and import industries by comparing the percentage of local employment in a specific industry to the percentage employed nationally in the same industry

$$LQ = \frac{\% \text{ of local employment in industry A}}{\% \text{ of national employment in industry A}}$$

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Percentage of Employment calculated from Quarterly Census of Employment and Wages Data

| Industry  | U.S. TOTAL | Alpena County, Michigan |
|---|------------|-------------------------|
| Base Industry: Total, all industries                | 100.00%    | 100.00%                 |
| NAICS 11 Agriculture, forestry, fishing and hunting | 1.06%      | 0.52%                   |
| NAICS 21 Mining                                     | 0.48%      | 0.33%                   |
| NAICS 22 Utilities                                  | 0.52%      | 0.72%                   |
| NAICS 23 Construction                               | 6.38%      | 6.00%                   |
| NAICS 31-33 Manufacturing                           | 13.14%     | 19.58%                  |
| NAICS 42 Wholesale trade                            | 5.20%      | 4.81%                   |
| NAICS 44-45 Retail trade                            | 13.88%     | 21.63%                  |
| NAICS 48-49 Transportation and warehousing          | 3.70%      | 3.75%                   |
| NAICS 51 Information                                | 2.86%      | 2.30%                   |
| NAICS 52 Finance and insurance                      | 5.36%      | 4.13%                   |
| NAICS 53 Real estate and rental and leasing         | 1.91%      | 1.46%                   |
| NAICS 54 Professional and technical services        | 6.24%      | 1.88%                   |
| NAICS 55 Management of companies and enterprises    | 1.56%      | 0.27%                   |
| NAICS 56 Administrative and waste services          | 7.22%      | 2.47%                   |
| NAICS 61 Educational services                       | 1.92%      | 0.20%                   |
| NAICS 62 Health care and social assistance          | 12.91%     | 15.11%                  |
| NAICS 71 Arts, entertainment, and recreation        | 1.71%      | 1.23%                   |
| NAICS   |            | 9.33%                   |
| NAICS   |            | 4.28%                   |
| NAICS   |            | NC                      |

13.88%

21.63%

$$\frac{\% \text{ of local employment in industry A}}{\% \text{ of national employment in industry A}}$$

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# Location Quotients

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$$LQ = \frac{\% \text{ of local employment in } \textit{retail trade}}{\% \text{ of national employment in } \textit{retail trade}}$$

$$= \frac{21.6\%}{13.9\%} = \mathbf{1.56}$$

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# Interpreting LQs

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|                     |                  |
|---------------------|------------------|
| LQ > 1.25           | Export Industry  |
| LQ < .75            | Import Industry  |
| LQ > .75 and < 1.25 | Self Sufficiency |

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# Location Quotients

A simple tool to help identify local:

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Export and import industries

Existing and potential industry clusters

Economic strengths

Development prospects

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# Location Quotients

## A few caveats:

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Local productivity  $\neq$  national productivity

Sector-wide LQs may hide some winners

LQ only an indicator, not an answer

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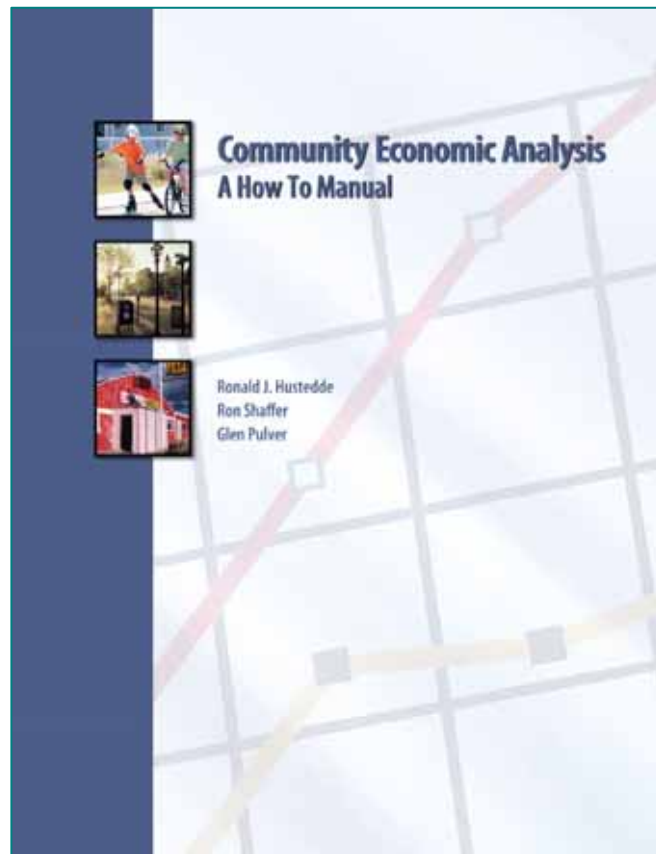
# Community Economic Analysis

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Defining a Community's Trade Areas

Identifying Basic Industries  
(Export Businesses) in a  
Community

**Identifying the Competitive  
Sectors in a Community**

Estimating the Total Impact of  
Economic Activities

<http://www.ag.iastate.edu/centers/rdev/pubs/title.htm>



# Why employment changes

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Growth or decline in the **national** economy

Growth or decline in the **industry** sector

Relative strength of the **local** industry/economy

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# Shift Share Analysis

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**Shift Share Analysis** provides an estimate of the impact of these three factors by separating the increase or decrease in local employment in specific industry sectors into three components:

1. National Growth Share
2. Industrial Mix Share
3. Local Share

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# Shift Share Analysis

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***National Growth Share:*** The increase or decrease in local employment that is attributable to the growth or decline in the **national economy**.

***Industrial Mix Share:*** The increase or decrease in local employment that is attributable to the growth or decline in a specific **industry sector**.

***Local Share:*** The increase or decrease in local employment that is attributable to the relative strength or weakness of the **local industry/economy**.

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# Calculating Growth Shares

## National Growth Rate (Alpena Co)

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local employment in *industry A* year 1  
 x national *total employment* growth rate for period

| Sector               | Employment<br>(1994) | Employment<br>(2004) | Change | % Change<br>Alpena Co. | % Change<br>U.S. |
|----------------------|----------------------|----------------------|--------|------------------------|------------------|
| Education and Health | 1,001                | 3,281                | 2,280  | 227.8                  | 25.2             |
| Manufacturing        | 2,406                | 1,831                | -575   | -23.9                  | -16.1            |
| Construction         | 608                  | 561                  | -47    | -7.7                   | 37.2             |
| Leisure/Hospitality  | 1,215                | 988                  | -227   | -18.7                  | 25.4             |
| Total Employment     | 10,388               | 11,310               | 922    | 8.8                    | 14.9             |

$$\text{NGS} = 1,001 \times .149 = 149 \text{ jobs}$$

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# Calculating Growth Shares

## Industry Mix Share (Alpena Co)

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local employment in *industry A* in year 1  
 x (national *industry* growth rate – national *average* growth rate)

| Sector               | Employment<br>(1994) | Employment<br>(2004) | Change | % Change<br>Alpena Co. | % Change<br>U.S. |
|----------------------|----------------------|----------------------|--------|------------------------|------------------|
| Education and Health | 1,001                | 3,281                | 2,280  | 227.8                  | 25.2             |
| Manufacturing        | 2,406                | 1,831                | -575   | -23.9                  | -16.1            |
| Construction         | 608                  | 561                  | -47    | -7.7                   | 37.2             |
| Leisure/Hospitality  | 1,215                | 988                  | -227   | -18.7                  | 25.4             |
| Total Employment     | 10,388               | 11,310               | 922    | 8.8                    | 14.9             |

$$IMS = 1,001 \times (.252 - .149) = 1,001 \times .103 = 103 \text{ jobs}$$

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# Calculating Growth Shares

## Local Share (Alpena Co)

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local employment in *industry A* in year 1

x (local *industry* growth rate – national *industry* growth rate)

| Sector               | Employment<br>(1994) | Employment<br>(2004) | Change | % Change<br>Alpena Co. | % Change<br>U.S. |
|----------------------|----------------------|----------------------|--------|------------------------|------------------|
| Education and Health | 1,001                | 3,281                | 2,280  | 227.8                  | 25.2             |
| Manufacturing        | 2,406                | 1,831                | -575   | -23.9                  | -16.1            |
| Construction         | 608                  | 561                  | -47    | -7.7                   | 37.2             |
| Leisure/Hospitality  | 1,215                | 988                  | -227   | -18.7                  | 25.4             |
| Total Employment     | 10,388               | 11,310               | 922    | 8.8                    | 14.9             |

$$LS = 1,001 \times (2.278 - .252) = 1,001 \times 2.026 = 2,028 \text{ jobs}$$

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# Calculating Growth Shares

## Shift Share (Alpena Co)

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$SS = \text{National Share} + \text{Industry Share} + \text{Local Share}$

| Sector               | Employment<br>(1994) | Employment<br>(2004) | Change | % Change<br>Alpena Co. | % Change<br>U.S. |
|----------------------|----------------------|----------------------|--------|------------------------|------------------|
| Education and Health | 1,001                | 3,281                | 2,280  | 227.8                  | 25.2             |
| Manufacturing        | 2,406                | 1,831                | -575   | -23.9                  | -16.1            |
| Construction         | 608                  | 561                  | -47    | -7.7                   | 37.2             |
| Leisure/Hospitality  | 1,215                | 988                  | -227   | -18.7                  | 25.4             |
| Total Employment     | 10,388               | 11,310               | 922    | 8.8                    | 14.9             |

$SS = 149 + 103 + 2,028 = 2,280$

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# Shift Share Caveats

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Shift Share is:

- Descriptive, not diagnostic
  - Does not tell you WHY
  - Does not identify comparative advantages
- Minimizes the impact of of business cycles

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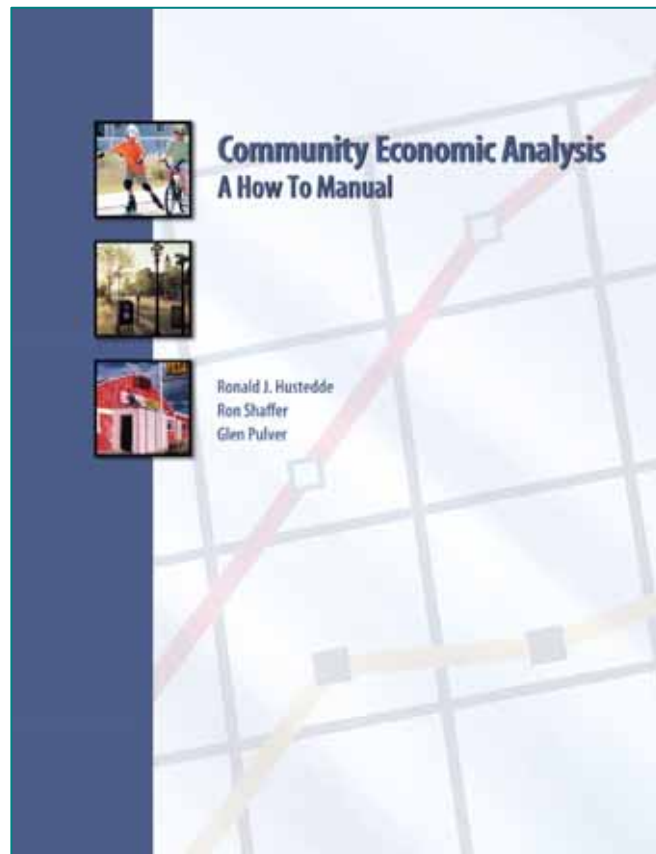
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# Multiplier Effect

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**Q:** Why is the arrival of a new export business or the expansion of an existing export business a welcome event in most communities?

**A:** Jobs and Income

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# Multiplier Effect

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More GOOD NEWS: A new **export** business or business expansion usually creates more jobs and generates more additional spending and income than the jobs, spending, and wages directly attributable to the business.

This is called the ***Multiplier Effect***

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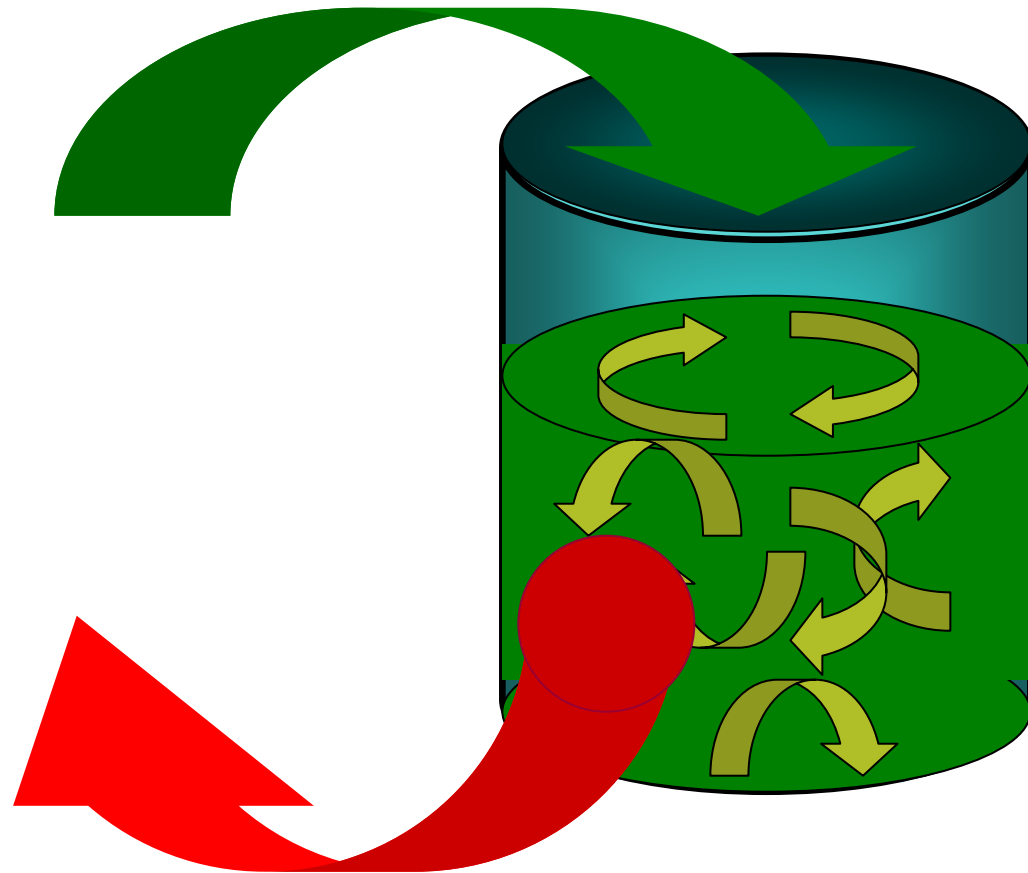
# Dollars also circulate in the local economy:

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# Multiplier Effect

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The Multiplier Effect is comprised of three components:

1. **Direct Effects:** Labor, goods and services purchased by the business
2. **Indirect Effects:** Increase in local spending by firms that supply the business
3. **Induced Effects:** Increase in local spending by employees of the business

**Total Impact = Direct + Indirect + Induced**

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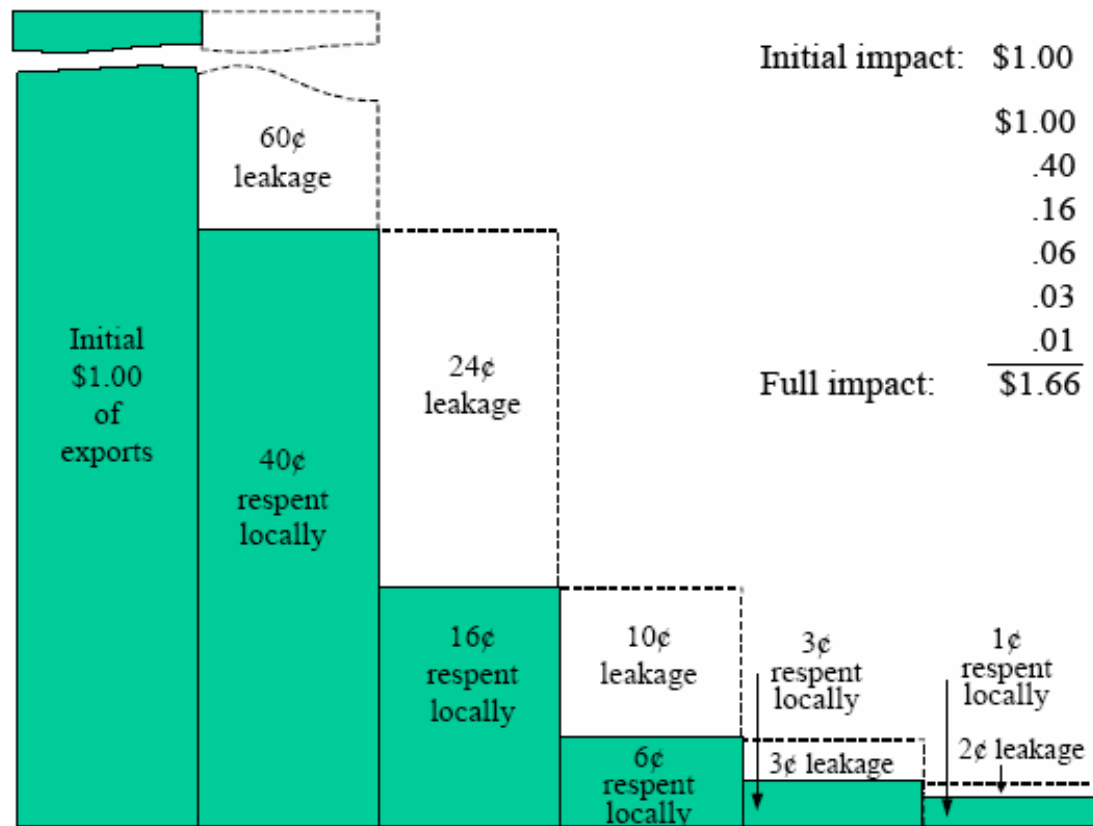
# Multiplier Effect

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Source: Western Rural Development Center



# Multiplier Effect

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In its simplest form,

$$\text{Multiplier} = \frac{\text{Total Change}}{\text{Direct Change}}$$

$$= \frac{\$1.66}{\$1.00}$$

$$= 1.66$$

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# Multiplier Effect

Which has the larger multiplier?

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Wal-Mart Supercenter with annual sales of \$81 million that employs 400 people

A cheese factory that employs 20 people and has annual sales of \$20 million

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# Multiplier Effect

## Wal-Mart or a Cheese Factory

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What does each buy locally?

- Inventory
- Labor
- Transportation
- Supplies
- Utilities
- Accounting services
- Marketing
- Financing
- Repairs
- Maintenance
- Legal Services

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# Multiplier Effect

## Wal-Mart or a Cheese Factory

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What do the **suppliers** to each buy locally?

- Inventory
- Labor
- Transportation
- Supplies
- Utilities
- Accounting services
- Marketing
- Financing
- Repairs
- Maintenance
- Legal Services

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# Community Economics

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- Defining a Community's Economy
- How money and resources flow into and out of the local economy
- How money circulates in the local economy
- Basic industries and economic growth
- Traditional Community Economic Analysis
- **Cool NEW Tools**

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# Defining Trade Areas: Using GIS

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**Trade Area Analyst LT:** An easy-to-use application utilizing Geographic Information Systems (GIS) software that enables users to easily map variety of markets by ZIP Code.

- Customers
- Employees
- Patients
- Visitors

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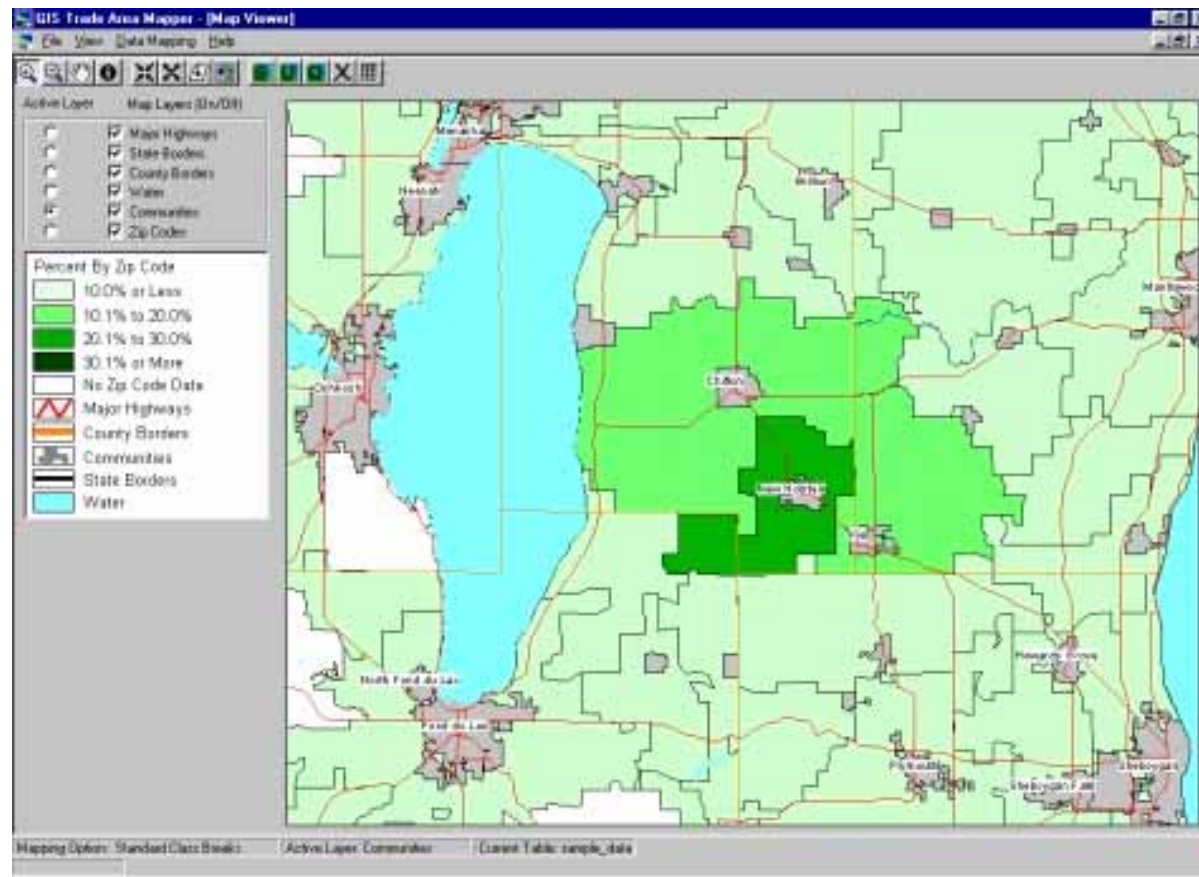
# Trade Area Analyst LT

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# Calculating LQs

## The Good News

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## **U.S Department of Labor**

### **Bureau of Labor Statistics**

*Quarterly Census of Employment and Wages*

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## Location Quotient Calculator

### STEP 1 - YEAR SELECTION AND OTHER DATA CHARACTERISTICS

|                             |                         |
|-----------------------------|-------------------------|
| <b>Year:</b>                | 2004 ▼                  |
| <b>Data Period:</b>         | Annual Average          |
| <b>Data Type:</b>           | All Employees           |
| <b>Ownership:</b>           | Private                 |
| <b>Establishment Sizes:</b> | All establishment sizes |

### STEP 2 - AREA SELECTION (possible choices: U.S. total, States, counties, and metropolitan areas)

|                              |   |
|------------------------------|---|
| <b>Select the Base Area:</b> | <b>Select up to 3 Analysis Areas:</b>         |
| Alpena County, Michigan ▼    | U.S. TOTAL<br>(must select at least one area) |
|                              | Michigan – Statewide<br>(optional)            |
|                              | Select an Analysis Area<br>(optional)         |

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[http://data.bls.gov/LOCATION\\_QUOTIENT/servlet/lqc.ControllerServlet](http://data.bls.gov/LOCATION_QUOTIENT/servlet/lqc.ControllerServlet)





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## Location Quotient Calculator

Employment, Percentage and Location Quotients calculated from Quarterly Census of Employment and Wages Data

Location Quotients calculated from Quarterly Census of Employment and Wages Data

| Industry                             | Alpena County, Michigan |
|--------------------------------------|-------------------------|
| Base Industry: Total, all industries | 1.00                    |
| Natural Resources and Mining         | 0.55                    |
| Construction                         | 0.94                    |
| Manufacturing                        | 1.49                    |
| Trade, Transportation, and Utilities | 1.33                    |
| Information                          | 0.80                    |
| Financial Activities                 | 0.77                    |
| Professional and Business Services   | 0.31                    |
| Education and Health Services        | 1.03                    |
| Leisure and Hospitality              | 0.92                    |
| Other Services                       | 1.08                    |
| Unclassified                         | NC                      |

Footnotes:

(NC) Not Calculable, the data does not exist or it is zero

[http://data.bls.gov/LOCATION\\_QUOTIENT/servlet/lqc.ControllerServlet](http://data.bls.gov/LOCATION_QUOTIENT/servlet/lqc.ControllerServlet)

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Location Quotients calculated from Quarterly Census of Employment and Wages Data

| Industry  | Alpena County, Michigan | Lake County, Michigan | Keweenaw County, Michigan |
|---|-------------------------|-----------------------|---------------------------|
| Base Industry: Total, all industries                  | 1.00                    | 1.00                  | 1.00                      |
| NAICS 11 Agriculture, forestry, fishing and hunting   | 0.49                    | ND                    | ND                        |
| NAICS 21 Mining                                       | 0.69                    | ND                    | ND                        |
| NAICS 22 Utilities                                    | 1.38                    | NC                    | NC                        |
| NAICS 23 Construction                                 | 0.94                    | 0.71                  | ND                        |
| NAICS 31-33 Manufacturing                             | 1.49                    | 0.54                  | .70                       |
| NAICS 42 Wholesale trade                              | 1.56                    | 0.93                  | ND                        |
| NAICS 44-45 Retail trade                              | 1.56                    | 1.03                  | 0.70                      |
| NAICS 48-49 Transportation and warehousing            | 1.02                    | 1.03                  | ND                        |
| NAICS 51 Information                                  | 0.80                    | 0.80                  | ND                        |
| NAICS 52 Finance and insurance                        | 0.77                    | 0.77                  | ND                        |
| NAICS 53 Real estate and rental and leasing           | 0.76                    | 0.59                  | ND                        |
| NAICS 54 Professional and technical services          | 0.30                    | 0.18                  | ND                        |
| NAICS 55 Management of companies and enterprises      | 0.17                    | NC                    | NC                        |
| NAICS 56 Administrative and waste services            | 0.34                    | ND                    | NC                        |
| NAICS 61 Educational services                         | 0.11                    | ND                    | NC                        |
| NAICS 62 Health care and social assistance            | 1.17                    | ND                    | ND                        |
| NAICS 71 Arts, entertainment, and recreation          | 0.72                    | 1.02                  | ND                        |
| NAICS 72 Accommodation and food services              | 0.95                    | 1.83                  | ND                        |
| NAICS 81 Other services, except public administration | 1.08                    | 1.09                  | 1.23                      |
| NAICS 99 Unclassified                                 | NC                      | NC                    | NC                        |

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[Educational Attainment](#)

City/County/State



[Median Household Income](#)

City/County/State/Nation



[Population](#)

City/County/State



[School Enrollment](#)

City/County



#### Employment

[Composition of Total Employment](#)

County/State/Nation



[Location Quotient](#)

County/State



[Nonfarm Employment](#)

County/State



[Farm Employment](#)

County/State/Nation



[Employment Trends](#)

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[Average Wage & Salary Earnings Per Job](#)

County/State/Nation



[Shift Share Analysis](#)

County/State



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# Iowa State University

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## Location Quotient for Alpena County, Michigan

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|  | Percent of nonfarm jobs |          | Location Quotient |          |
|--|-------------------------|----------|-------------------|----------|
|  | Alpena County           | Michigan | Alpena County     | Michigan |
| <b>All nonfarm sectors</b>                                 | 100.0                   | 100.0    |                   |          |
| <b>Forestry, fishing, related activities, and other...</b> | 0.8                     | 0.3      | 1.2               | 0.5      |
| <b>Mining</b>  | 0.3                     | 0.2      | 0.6               | 0.5      |
| <b>Utilities</b>   | 0.4                     | 0.4      | 1.2               | 1.0      |
| <b>Construction</b>  | 6.4                     | 5.5      | 1.1               | 0.9      |
| <b>Manufacturing</b>                                       | 11.2                    | 14.4     | 1.2               | 1.5      |
| <b>Wholesale trade</b>                                     | 3.3                     | 3.5      | 0.9               | 0.9      |
| <b>Retail trade</b>  | 14.7                    | 11.8     | 1.3               | 1.0      |
| <b>Transportation and warehousing</b>                      | 2.4                     | 2.4      | 0.7               | 0.7      |
| <b>Information</b>   | 1.5                     | 1.6      | 0.6               | 0.7      |
| <b>Finance and insurance</b>                               | 3.3                     | 3.9      | 0.7               | 0.8      |
| <b>Real estate and rental and leasing</b>                  | 3.5                     | 3.6      | 0.9               | 0.9      |
| <b>Professional and technical services</b>                 | (D)                     | 6.6      | (D)               | 1.0      |
| <b>Management of companies and enterprises</b>             | (D)                     | 1.3      | (D)               | 1.2      |
| <b>Administrative and waste services</b>                   | 2.8                     | 5.9      | 0.5               | 1.0      |
| <b>Educational services</b>                                | 0.6                     | 1.4      | 0.3               | 0.7      |
| <b>Health care and social assistance</b>                   | 12.9                    | 10.4     | 1.3               | 1.1      |
| <b>Arts, entertainment, and recreation</b>                 | 1.4                     | 1.9      | 0.7               | 0.9      |
| <b>Accommodation and food services</b>                     | 6.1                     | 6.5      | 0.9               | 1.0      |
| <b>Other services, except public administration</b>        | 6.3                     | 5.3      | 1.1               | 1.0      |
| <b>Government and government enterprises</b>               | 19.4                    | 12.9     | 1.4               | 0.9      |
| <b>Undisclosed</b>   | 2.7                     | 0.0      | NA                | NA       |

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# Location Quotients

[http://cecd.aers.psu.edu/pubs/using\\_employment\\_data\\_to\\_better.htm](http://cecd.aers.psu.edu/pubs/using_employment_data_to_better.htm)

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UNDERSTANDING ECONOMIC CHANGE IN YOUR COMMUNITY

# 3

Using Employment Data to  
Better Understand Your  
Local Economy

---

Tool 3. Use Location Quotients  
to Identify Local Strengths,  
Opportunities, and Industry  
Clusters

PENNSYLVANIA STATE UNIVERSITY  
College of Agricultural Sciences  
Agricultural Research and Cooperative Extension



# Calculating Shift Share

## More Good News

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## Take Charge

### Individual Reports

#### Demographics

|  |                          |   |
|--|--------------------------|---|
| <a href="#">Age Distribution of the Population</a> | City/County/State        |   |
| <a href="#">Educational Attainment</a>             | City/County/State        |   |
| <a href="#">Median Household Income</a>            | City/County/State/Nation |   |
| <a href="#">Population</a>                         | City/County/State        |   |
| <a href="#">School Enrollment</a>                  | City/County              |   |

#### Employment

|  |                     |   |
|--|---------------------|---|
| <a href="#">Composition of Total Employment</a>            | County/State/Nation |   |
| <a href="#">Location Quotient</a>                          | County/State        |   |
| <a href="#">Nonfarm Employment</a>                         | County/State        |   |
| <a href="#">Farm Employment</a>                            | County/State/Nation |   |
| <a href="#">Employment Trends</a>                          | County/State/Nation |   |
| <a href="#">Unemployment</a>                               | County/State/Nation |   |
| <a href="#">Average wage &amp; Salary Earnings Per Job</a> | County/State/Nation |   |
| <a href="#">Shift Share Analysis</a>                       | County/State        |   |

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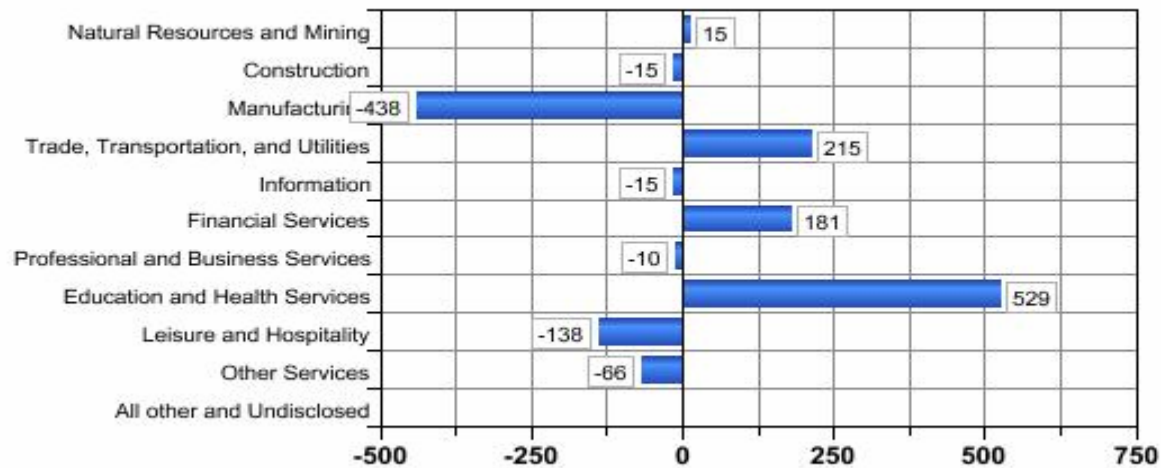
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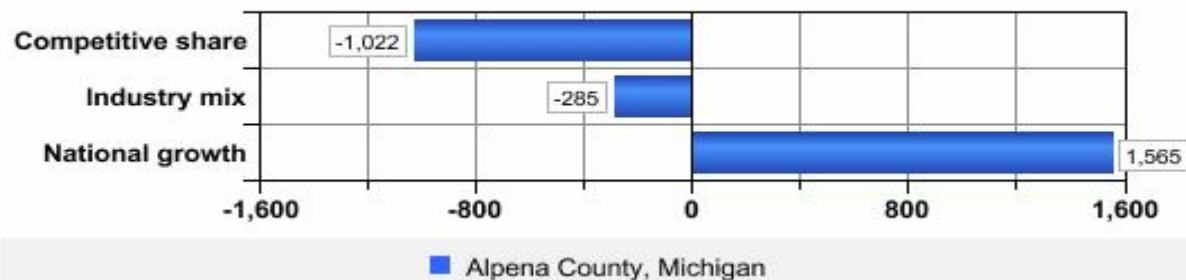
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### Change in Private Sector Employment, 1993-2003



(See data notes for employment data coverage and definitions)

### County Shift-Share Analysis, 1993-2003



# Shift Share Analysis

## University of Georgia

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### Shift Share Analysis of Regional Employment

**Step 1:** Type in the 5-digit FIPS code(s).  
[Click here to look up FIPS codes.](#)  
Separate then with a space (eg., 01075 43051).  
Submit as many codes as you like.

2 6007

**Step 2:** Choose the starting year, eg. 1995

1993  
1994  
1995  
1996  
1997  
1998

**Step 3:** Choose the ending year, eg. 2004

2004  
2003  
2002  
2001  
2000

**Step 4:**

Click on "Reset Form" to start another query.

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[www.rcr.uga.edu/guide/sshare1.html](http://www.rcr.uga.edu/guide/sshare1.html)



# Shift Share Analysis

## University of Georgia

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Table 2: Shift-Share Analysis for Your Area, 1994-2004.

| Sector                               | National Growth Component, Percent | National Growth Component, Jobs | Industrial Mix Component, Percent | Industrial Mix Component, Jobs | Competitive Share Component, Percent | Competitive Share Component, Jobs |
|--------------------------------------|------------------------------------|---------------------------------|-----------------------------------|--------------------------------|--------------------------------------|-----------------------------------|
| Education and Health Services        | 14.9                               | 149                             | 10.3                              | 103                            | 202.6                                | 2,028                             |
| Natural Resources and Mining         | 14.9                               | 11                              | -16.9                             | -12                            | 14.6                                 | 10                                |
| Financial Activities                 | 14.9                               | 67                              | 1.4                               | 6                              | -0.6                                 | -3                                |
| Information                          | 14.9                               | 31                              | -2.8                              | -6                             | -7.2                                 | -15                               |
| Trade, Transportation, and Utilities | 14.9                               | 410                             | -4.1                              | -113                           | -3.2                                 | -87                               |
| Other Services                       | 14.9                               | 70                              | 2.6                               | 12                             | -32.6                                | -154                              |
| Manufacturing                        | 14.9                               | 359                             | -31.0                             | -745                           | -7.9                                 | -189                              |
| Professional and Business Services   | 14.9                               | 73                              | 18.6                              | 91                             | -45.0                                | -220                              |
| Construction                         | 14.9                               | 91                              | 22.9                              | 139                            | -45.5                                | -277                              |
| Leisure and Hospitality              | 14.9                               | 181                             | 9.5                               | 115                            | -43.1                                | -524                              |
| Public Administration                | 14.9                               | 108                             | -6.3                              | -46                            | -103.2                               | -745                              |
|                                      |                                    | 1,550                           |                                   | 456                            |                                      | -176                              |

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# Shift Share

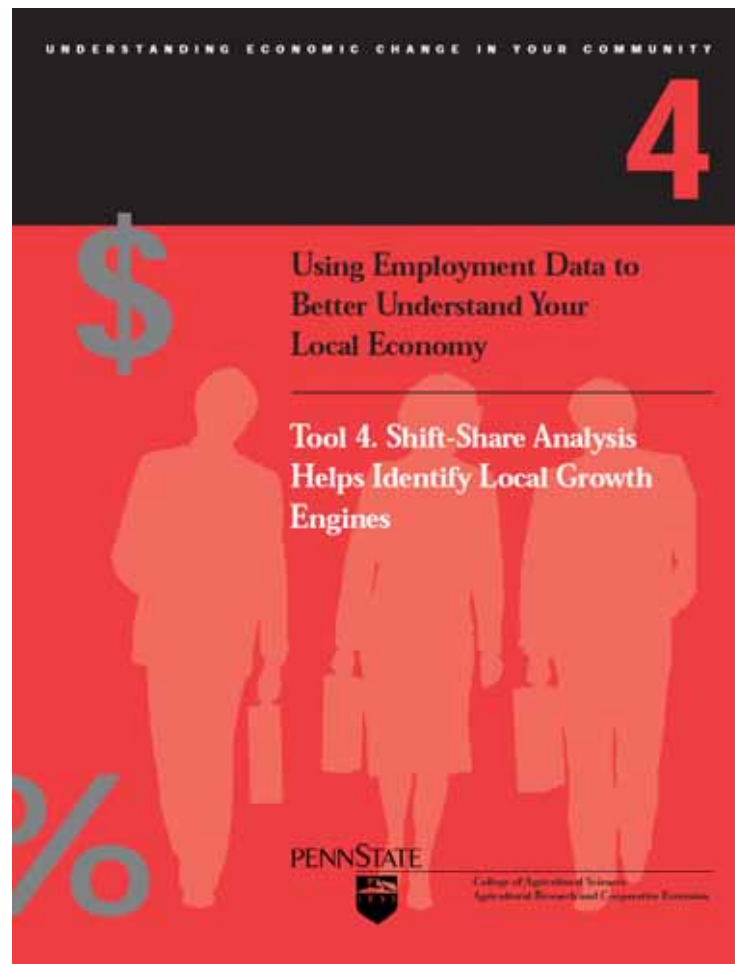
[http://cecd.aers.psu.edu/pubs/using\\_employment\\_data\\_to\\_better.htm](http://cecd.aers.psu.edu/pubs/using_employment_data_to_better.htm)

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# Next Session

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## Community Power Structure

October 9 and 10, 2007

1:30 to 3 p.m. CST



Janet Ayres

The ability to identify who the decision makers are in the community, the resources they affect, and the power structure is crucial in gaining access to a community, gaining trust and credibility, and being effective in educational programs.

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