How to Analyze Data for Community Economic Development

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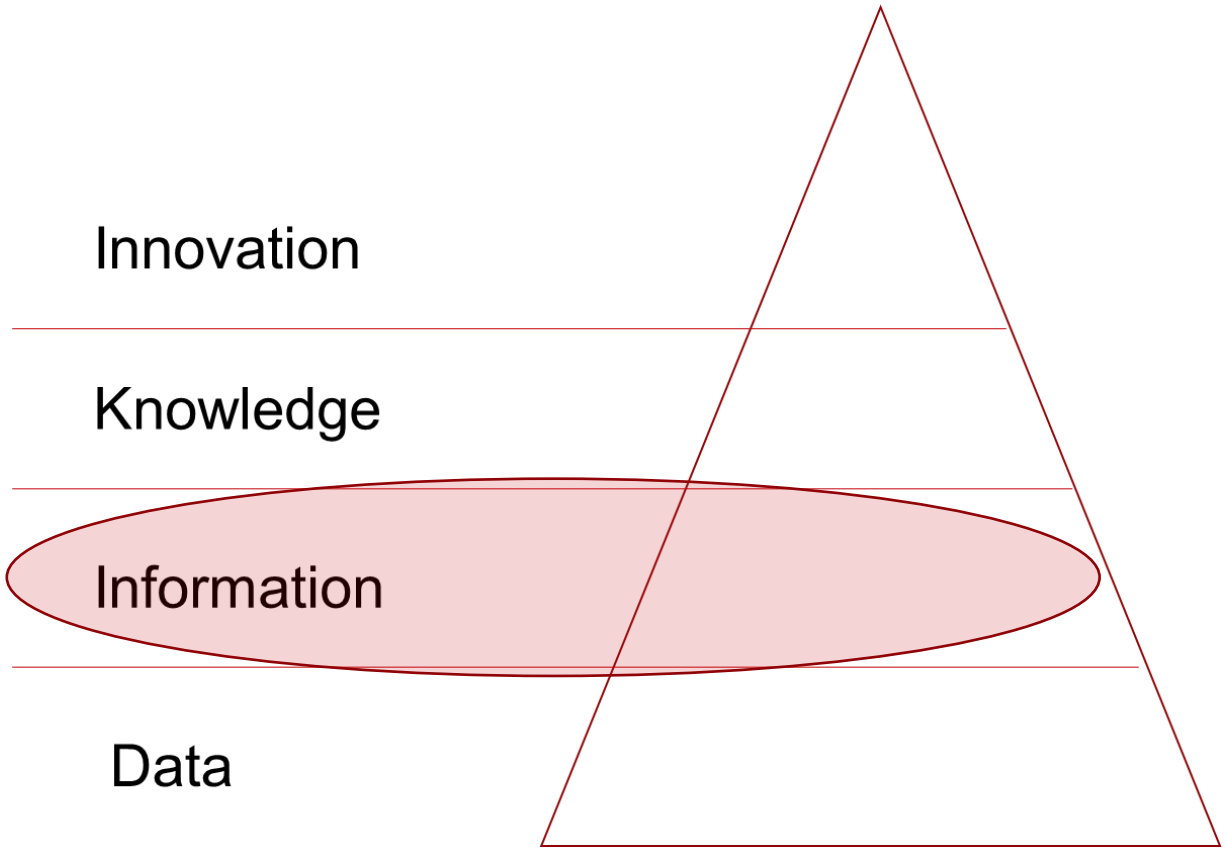
Data Analysis for Community Economic Development



How do we “add value” to the data and move from raw data to information?

- Comparison of Trends/Conditions for Variables of Interest
- Growth Indices
- Location Quotients

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Comparison of Trends/Conditions for Variables of Interest

- Comparing metrics across geographies and/or time periods provides perspectives and helps us ask informed questions (and hopefully avoid drowning in data!);
- Focus more on comparisons instead of rankings:
  - Rankings suggest that a formula for success can be found by looking at higher ranked areas;
  - Rankings are a snapshot that ignores the role of a region's economic history;
  - Ranking can increase inequality as areas may be stigmatized by low rankings and deficiencies beyond their control.
- Comparable areas can be based on proximity, demographic characteristics, urban/rural composition, etc.

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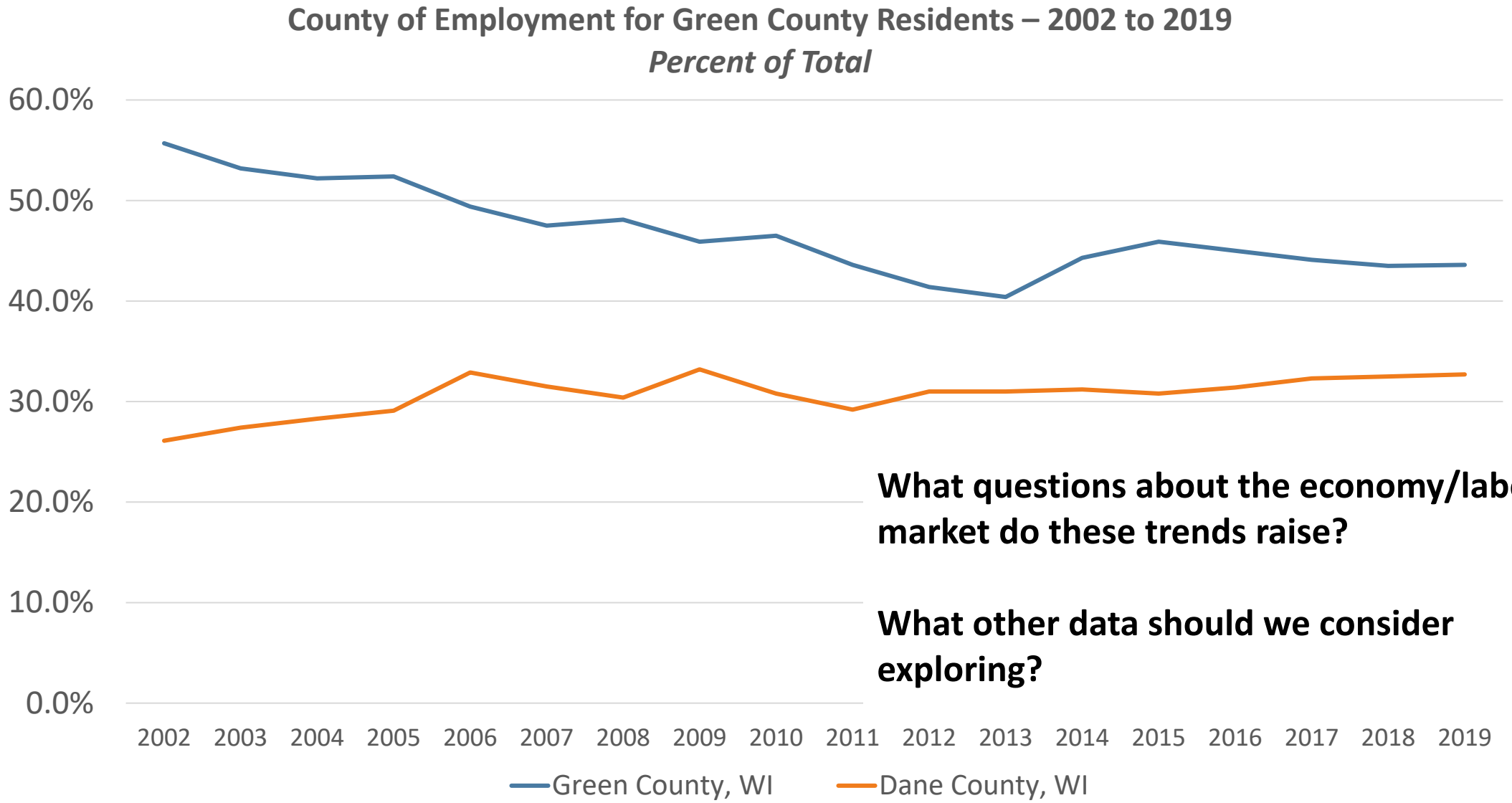
Comparison of Trends/Conditions for Variables of Interest – Example from OnTheMap



What questions about the economy/labor market do these trends raise?

What other data should we consider exploring?

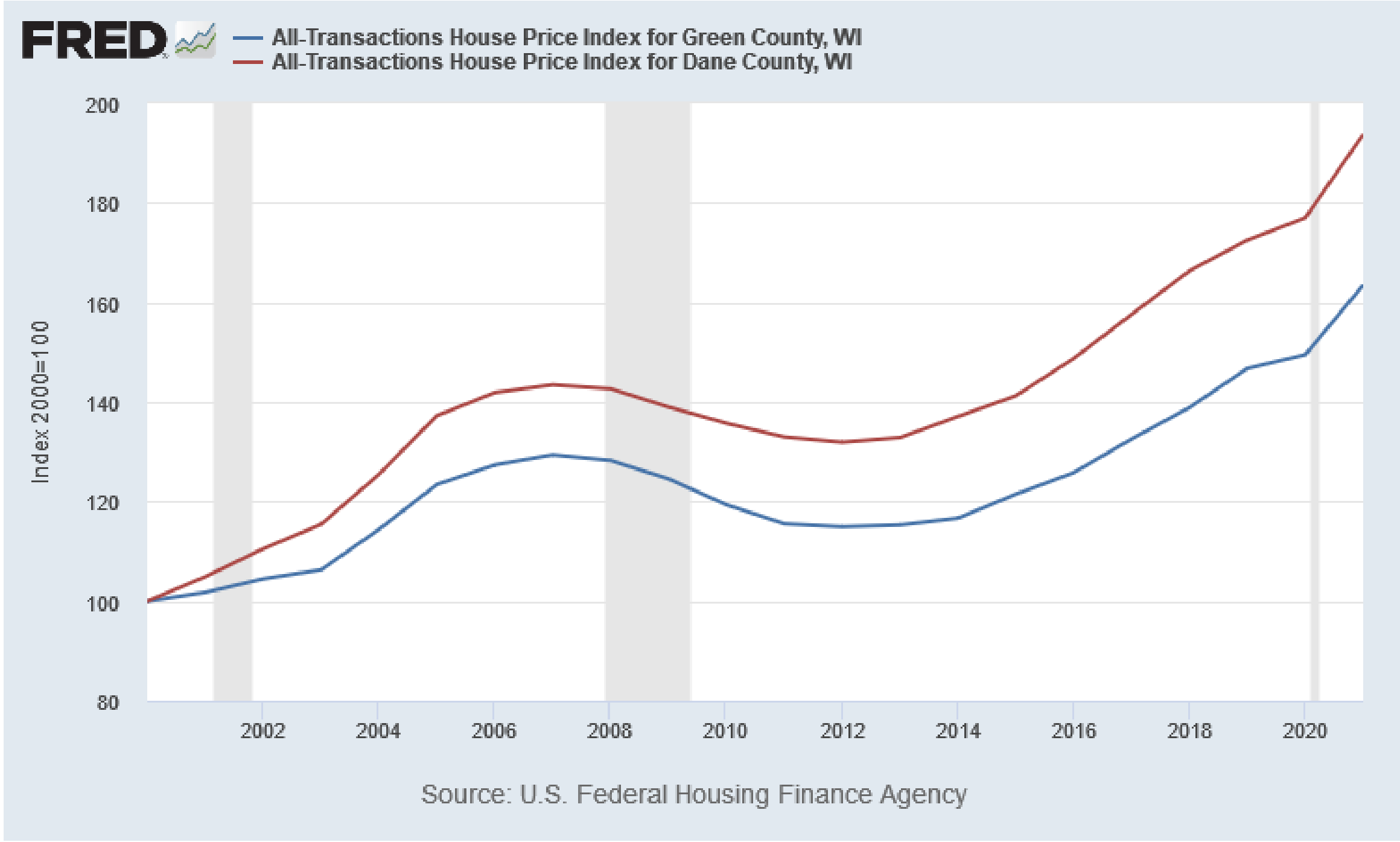
Data Source: U.S. Census Bureau OnTheMap LODES Data

Worker Flow for Green County – 2019

Who Stays in Green County vs. Who Commutes to Dane County?

	Remaining in Green County	Commuting to Dane County
Total	8,497	6,374
Distribution By Monthly Earnings		
Earning $1,250 per month or less	27.6%	17.6%
Earning $1,251 to $3,333 per month	33.5%	25.5%
Earning more than $3,333 per month	38.9%	56.9%
Distribution by Industry		
Goods Producing	28.2%	21.9%
Trade, Transportation and Utilities	19.5%	17.9%
All Other Services	52.3%	60.2%

Data Source: U.S. Census Bureau OnTheMap LODES Data


FRED
All-Transactions House Price Index for Green County, WI
All-Transactions House Price Index for Dane County, WI
Index 2000=100
200
180
160
140
120
100
80
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Source: U.S. Federal Housing Finance Agency

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Growth Indices

$$\text{Growth Index}_{t+1,i} = \frac{\text{Measure}_{t+1,i}}{\text{Measure}_{t=0,i}}$$

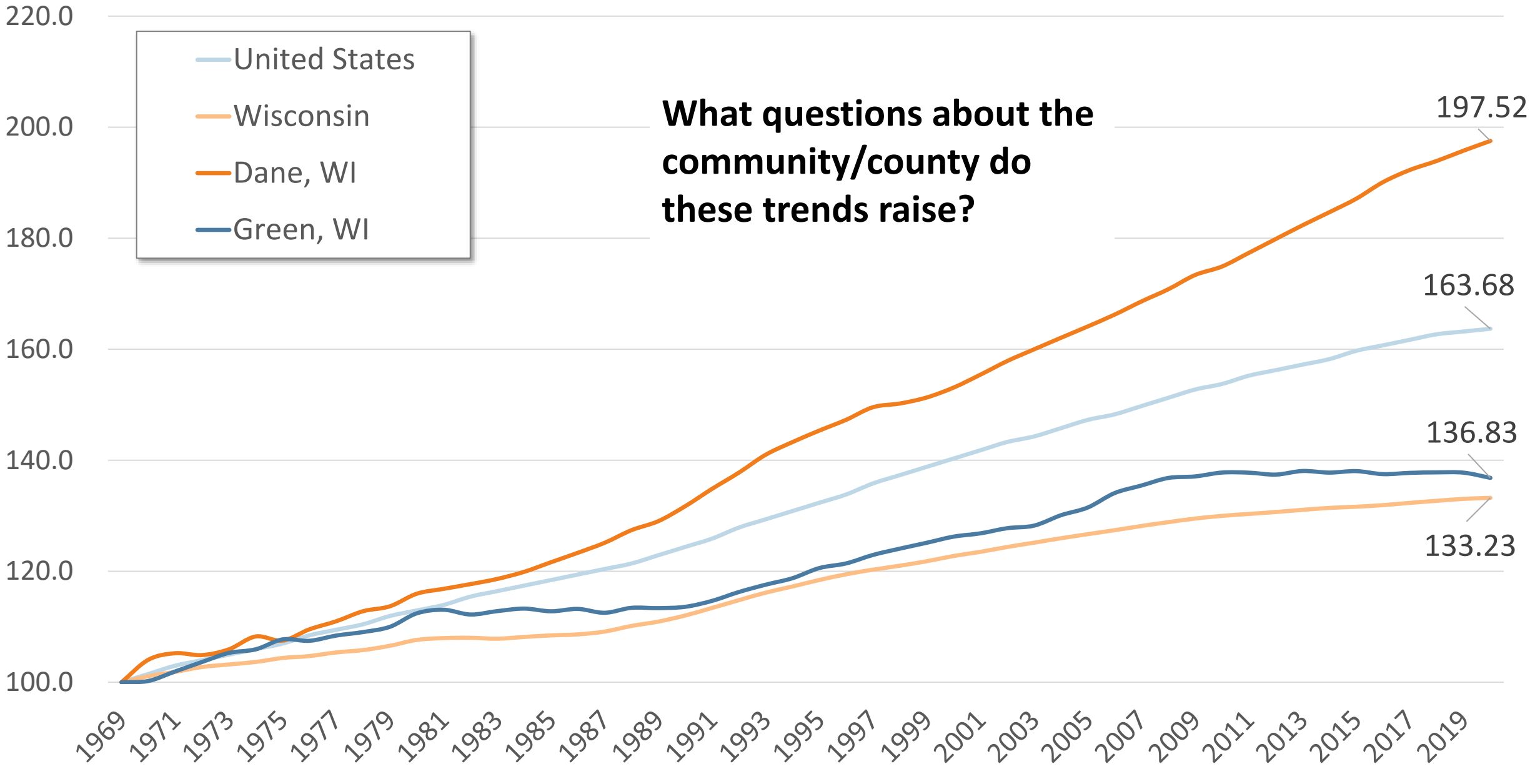
Measure $_i$ = Population, Employment, Income or Other Variable

t refers to the year

i refers to the variable of interest

- The numerical change in the index from one year to the next is the *growth rate*
- Changes over time indicate general growth patterns and levels of stability

Green County Population Change 1969 to 2020
Index of Growth (1969 = 100.0)



What questions about the community/county do these trends raise?

S2504: PHYSICAL HOUSING... -

https://data.census.gov/cedsci/table?q=housing&g=0500000US55025,55045&tid=ACSST5Y2020.S2504

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housing

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Results 1479

American Community Survey

S2504 | PHYSICAL HOUSING CHARACTERISTICS FOR OCCUPIED HOUSING UNITS

2020: ACS 5-Year Estimates Subject Tables

Notes | Geos 2 | Years | Topics 1 | Surveys | Codes | Hide | Transpose | Margin of Error | Restore | Excel | CSV | ZIP | Print | Map

	Green County, Wisconsin					
	Occupied housing units		Percent occupied housing units		Owner-occupied housing units	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of E
Occupied housing units	15,240	±168	15,240	±168	11,392	
UNITS IN STRUCTURE						
1, detached	11,713	±265	76.9%	±1.6	10,572	
1, attached	626	±115	4.1%	±0.7	259	
2 apartments	732	±138	4.8%	±0.9	86	
3 or 4 apartments	377	±112	2.5%	±0.7	11	
5 to 9 apartments	383	±111	2.5%	±0.7	0	
10 or more apartments	783	±196	5.1%	±1.3	10	
Mobile home or other type of housing	626	±128	4.1%	±0.8	454	
YEAR STRUCTURE BUILT						
2014 or later	257	±76	1.7%	±0.5	248	

Columns | Cell/Column Notes

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Location Quotients

$$LQ = \frac{\text{\% of local employment in sector/occupation i}}{\text{\% national employment in sector/occupation i}}$$

Critical Values

LQ < 1 Underspecialized, potential for expansion?

LQ = 1 As expected

LQ > 1 Overspecialized, driver of local economy

Employment by Occupation in the Madison Metro Area (Dane, Green, Iowa and Columbia Counties)

Occupation	Share of Employment - Madison MSA	Share of Employment – United States	Madison MSA Location Quotient
Management	4.9%	6.3%	0.77
Business and Financial Operations	8.0%	6.4%	1.25
Computer and Mathematical	5.6%	3.3%	1.69
Architecture and Engineering	2.2%	1.7%	1.25
Life, Physical, and Social Science	2.0%	0.9%	2.19
Community and Social Service	1.5%	1.6%	0.96
Legal	0.7%	0.8%	0.89
Educational Instruction and Library	6.9%	5.8%	1.19
Arts, Design, Entertainment, Sports, and Media	1.5%	1.3%	1.2
Healthcare Practitioners and Technical	7.2%	6.2%	1.16
Healthcare Support	3.9%	4.7%	0.83
Protective Service	1.5%	2.4%	0.64
Food Preparation and Serving Related	6.6%	8.0%	0.83
Building and Grounds Cleaning and Maintenance	3.1%	2.9%	1.06
Personal Care and Service	1.6%	1.8%	0.87
Sales and Related	8.8%	9.4%	0.94
Office and Administrative Support	13.4%	13.0%	1.03
Construction and Extraction	3.8%	4.2%	0.92
Installation, Maintenance, and Repair	3.4%	4.0%	0.87
Production	6.3%	6.0%	1.06
Transportation and Material Moving	6.8%	9.0%	0.75

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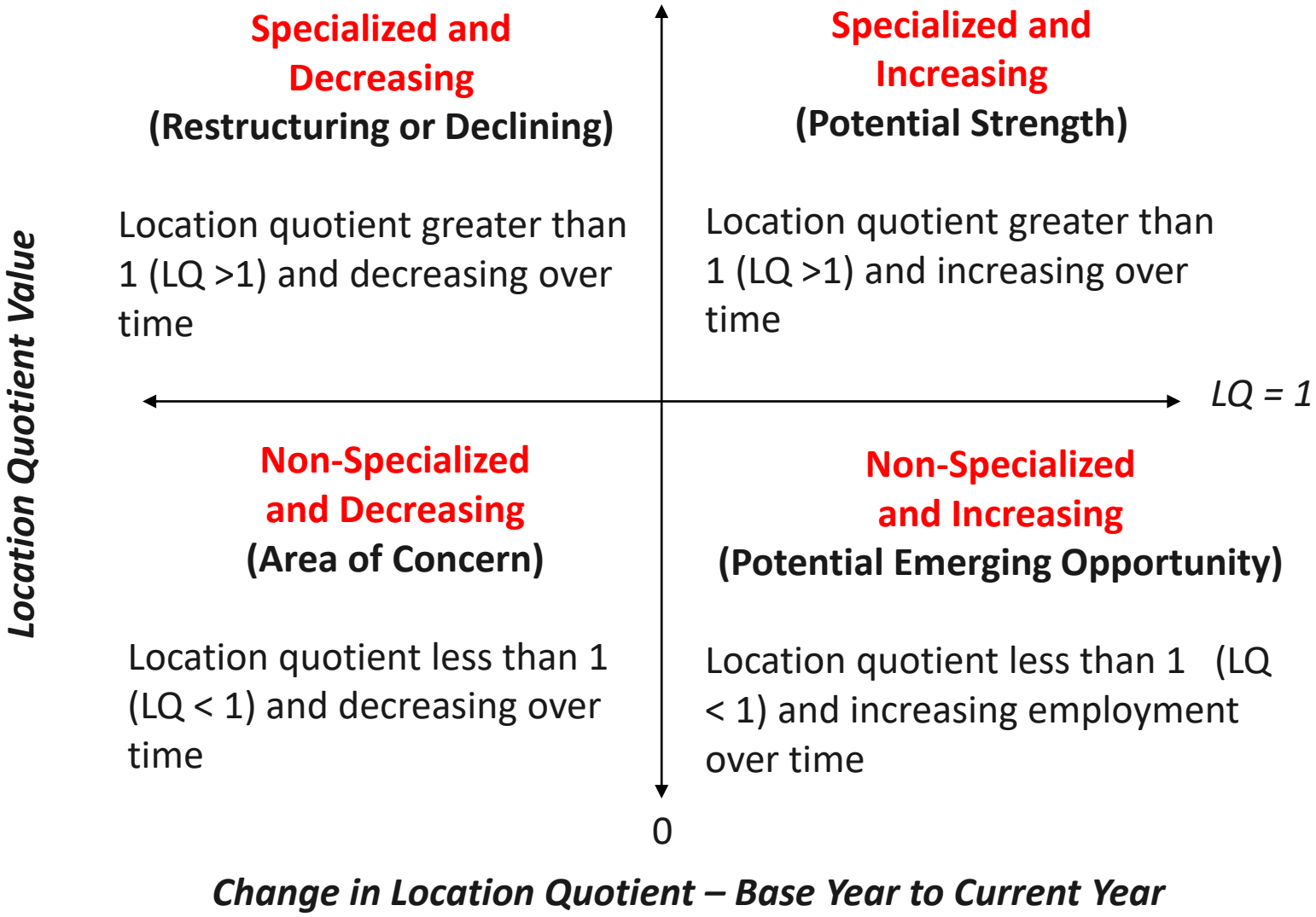
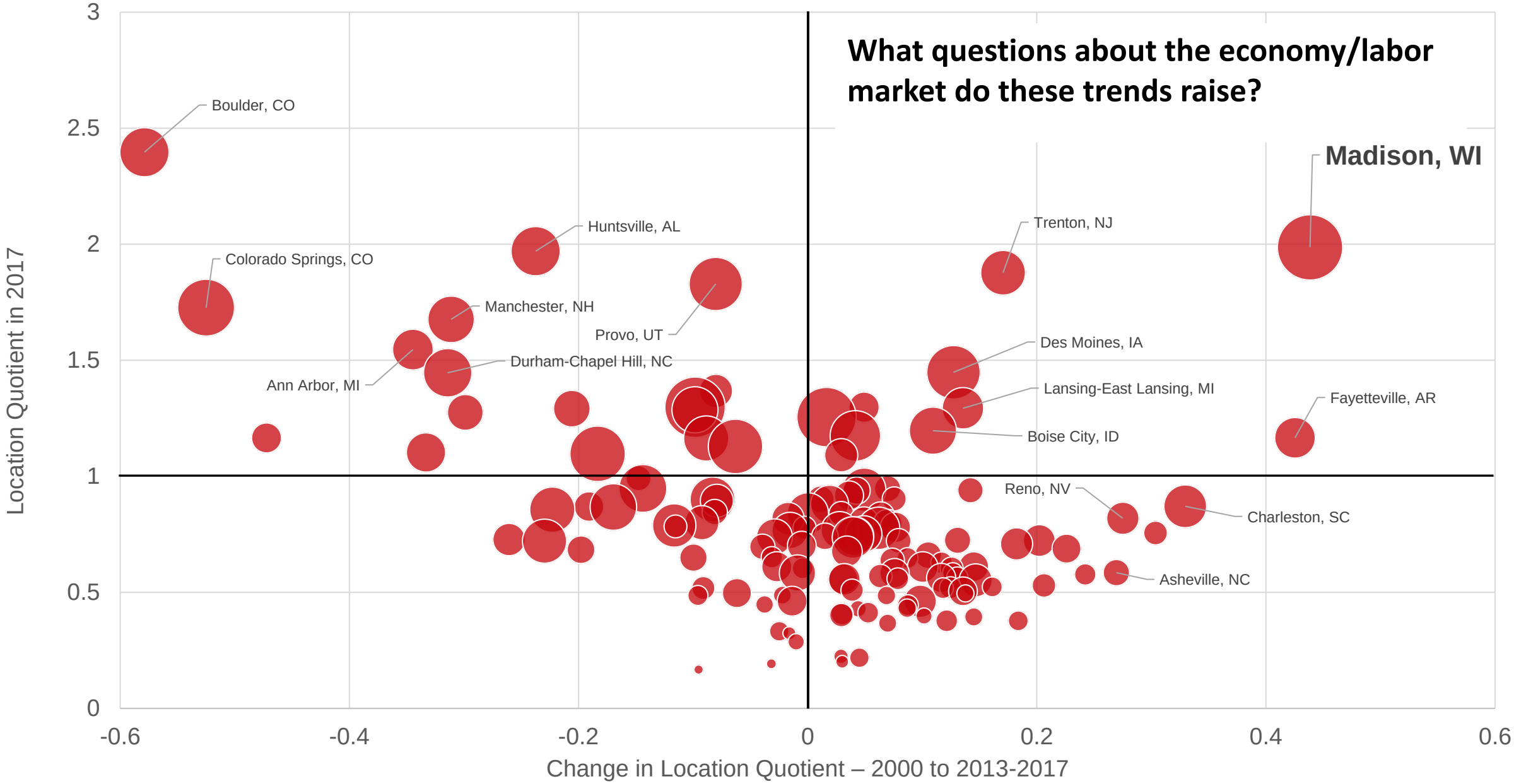
One Method for Identifying Economic Clusters



Examining Clusters - Computer and Mathematical Occupations in Metro Areas with 999,999 to 250,000 Residents



Distribution of Employment by Industry – Sheboygan County

Industry	United States (% of Total)	Sheboygan County (% of Total)	Sheboygan County LQ
Farm	1.4%	1.9%	1.40
Natural Resources (nonfarm)	1.0%	0.4%	0.40
Utilities	0.3%	0.2%	0.57
Construction	5.7%	4.6%	0.82
Manufacturing	6.7%	29.6%	4.41
Wholesale trade	3.2%	2.2%	0.69
Retail trade	9.4%	10.6%	1.13
Transportation and warehousing	4.8%	2.3%	0.47
Information	1.7%	0.4%	0.22
Finance and insurance	5.5%	5.8%	1.05
Real estate and rental and leasing	4.7%	2.2%	0.47
Professional, scientific, and technical services	7.5%	2.9%	0.38
Management of companies and enterprises	1.4%	1.2%	0.89
Administrative and support/waste mgmt.	6.2%	4.0%	0.64
Educational services	2.4%	1.3%	0.52
Health care and social assistance	11.8%	10.6%	0.90
Arts, entertainment, and recreation	1.9%	1.8%	0.95
Accommodation and food services	6.4%	5.8%	0.90
Other services	5.5%	4.2%	0.77
Government and government enterprises	12.6%	8.2%	0.65

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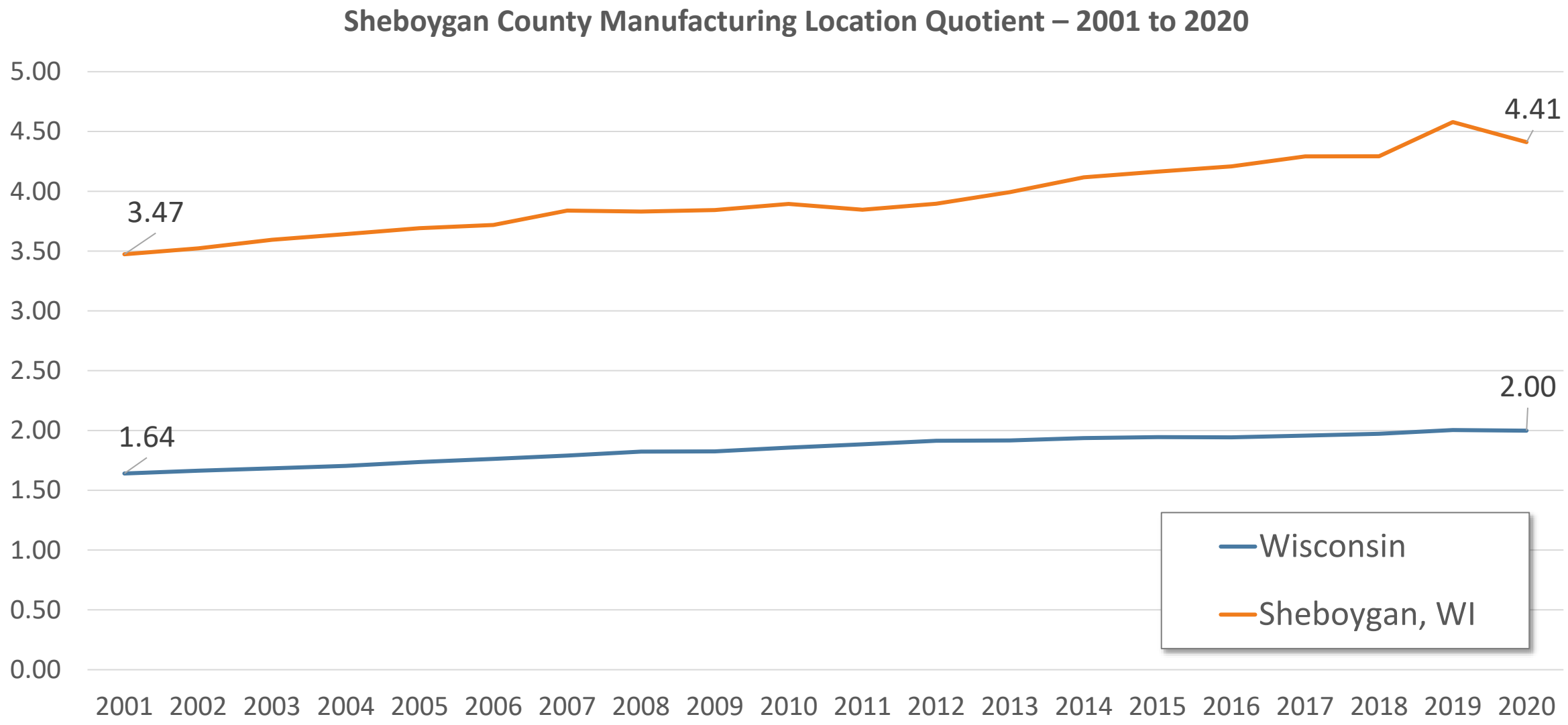
Location Quotient Trends



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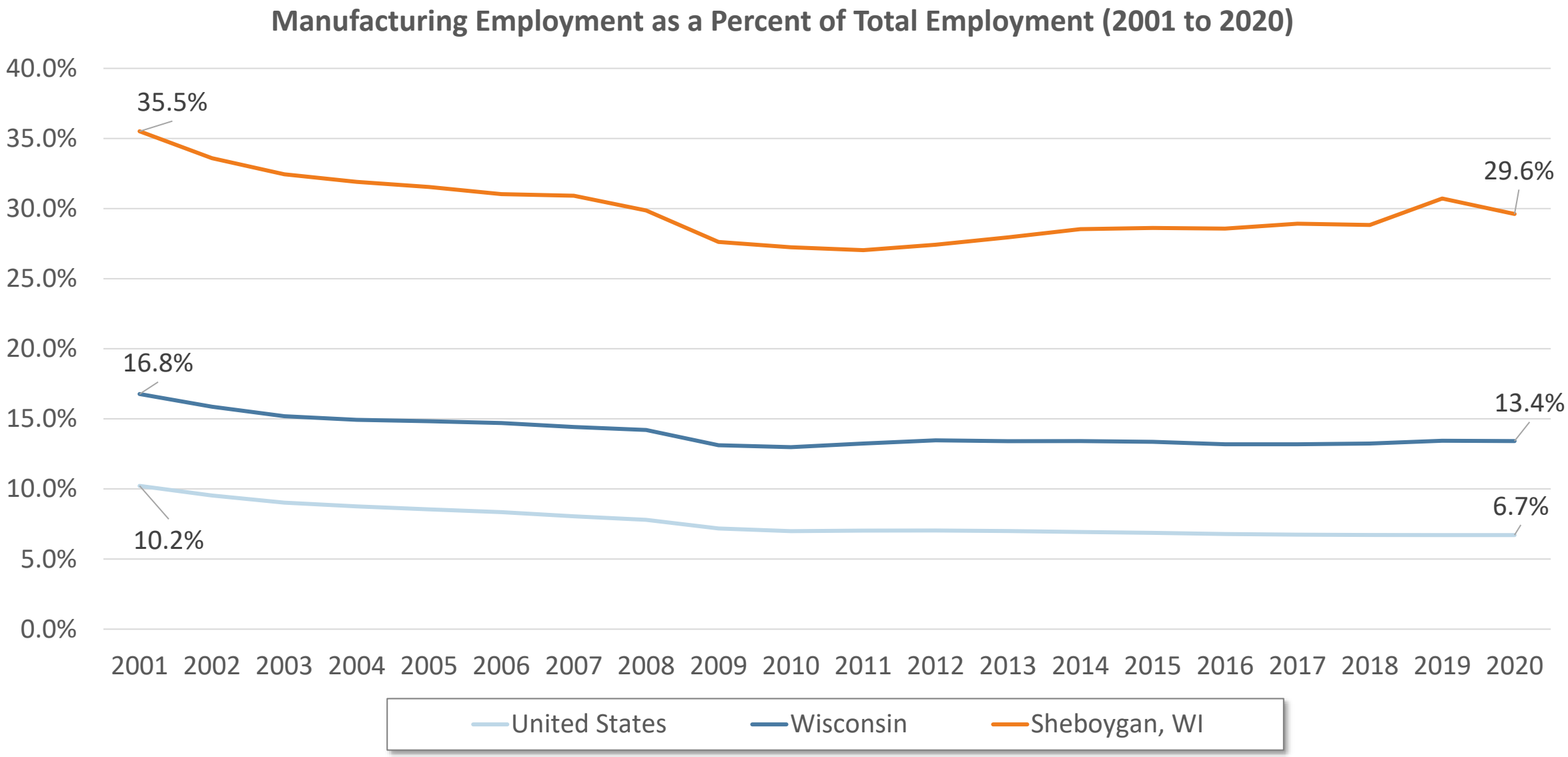
Share of Employment Trends



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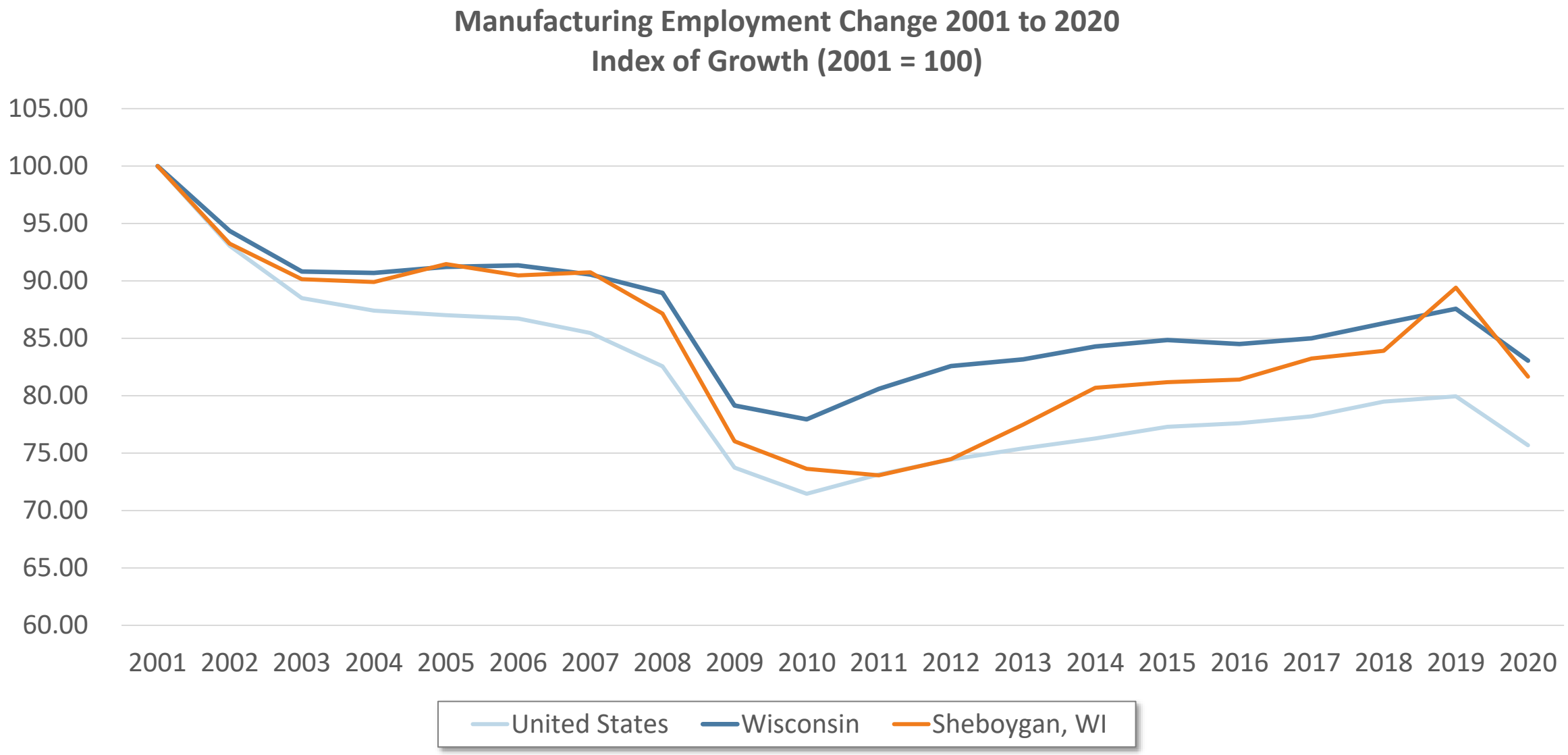
Index of Growth



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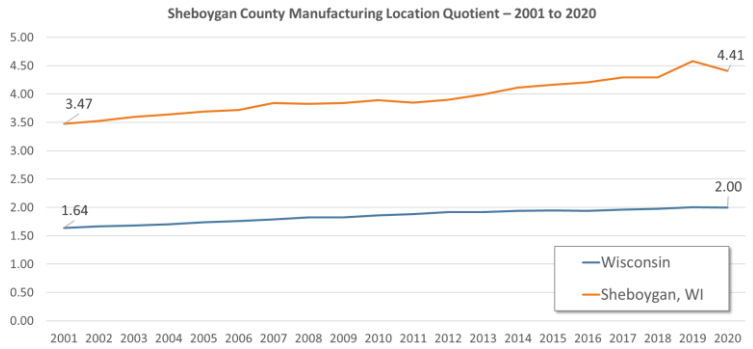

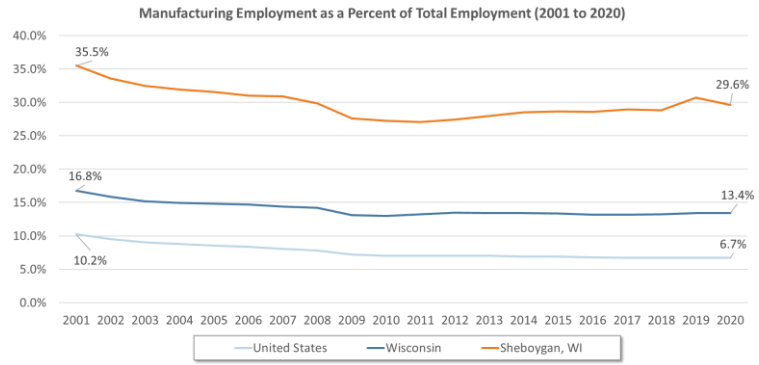

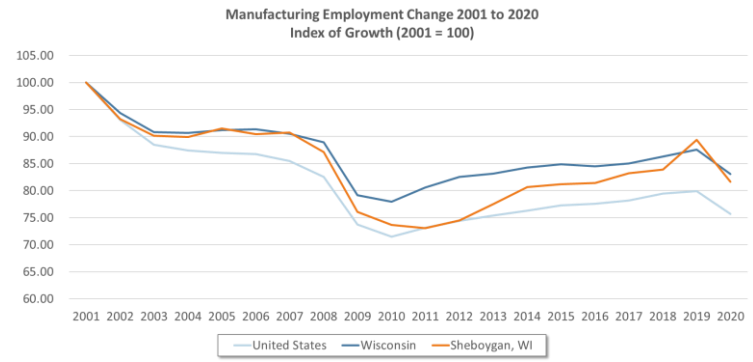

So, for Sheboygan County, Wisconsin, is Manufacturing a:

- Strength?
- Weakness?
- Opportunity?
- Threat?
- Some Combination of the Above?

If manufacturing employment has declined, why is there a large demand for workers?

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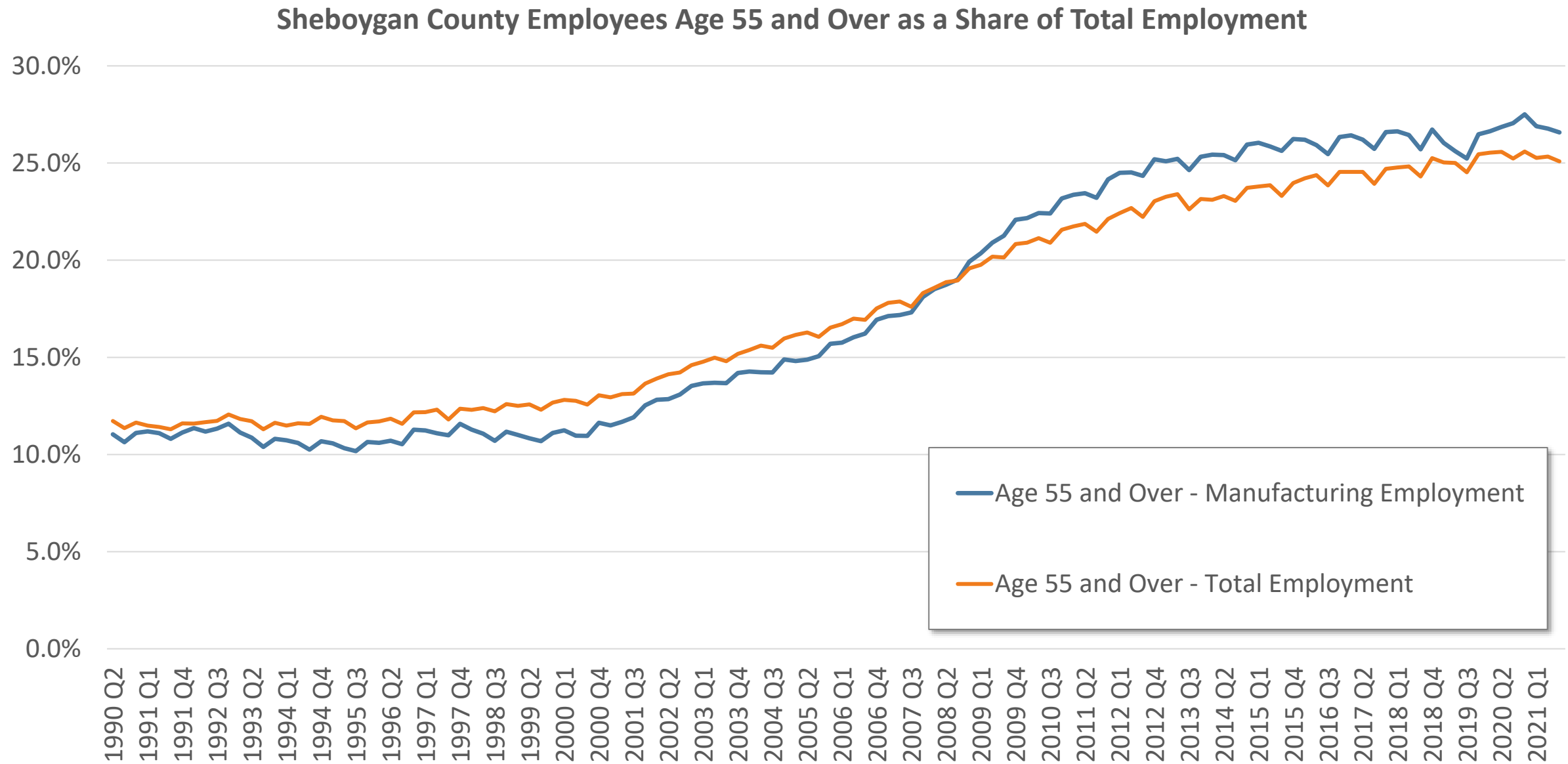

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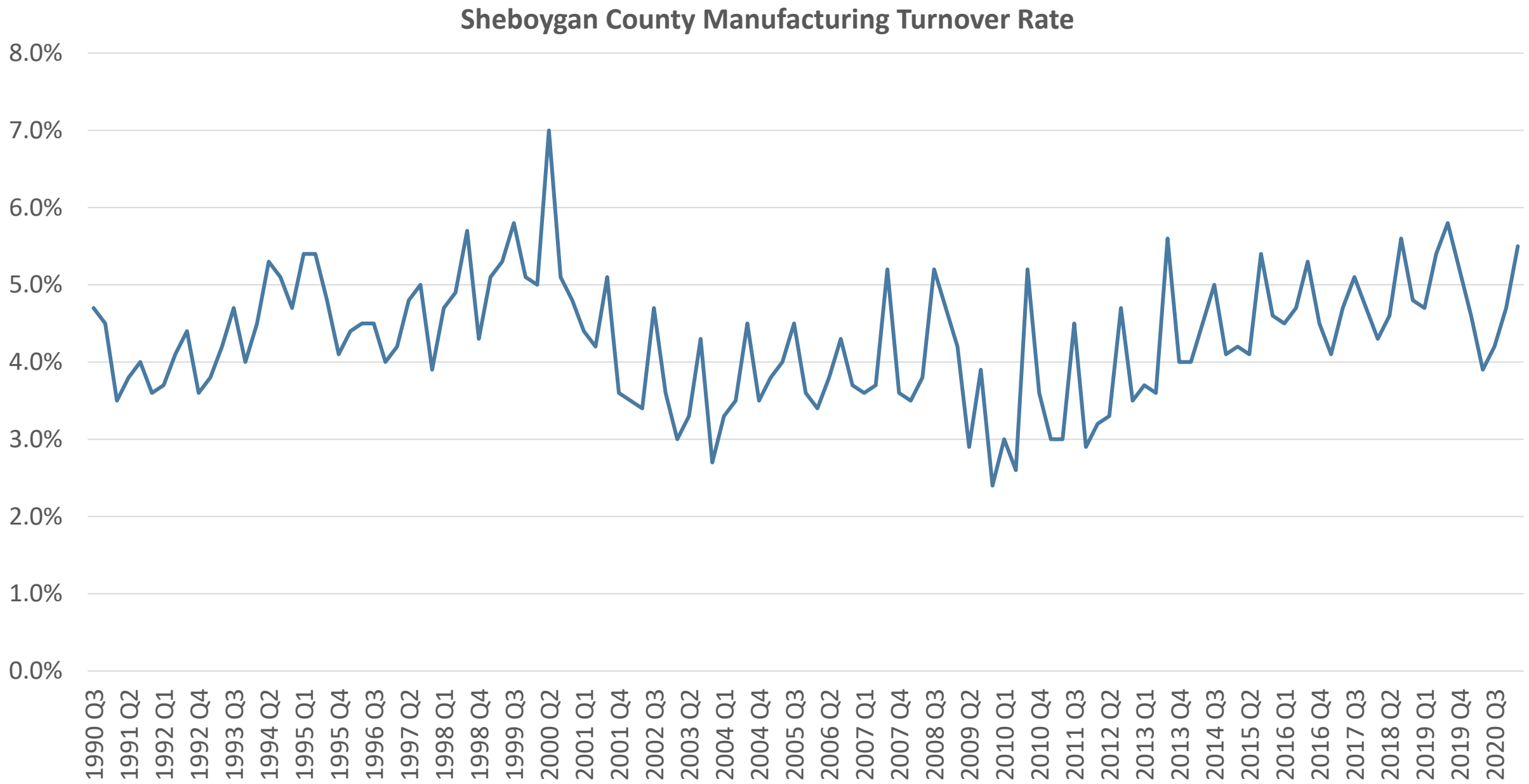

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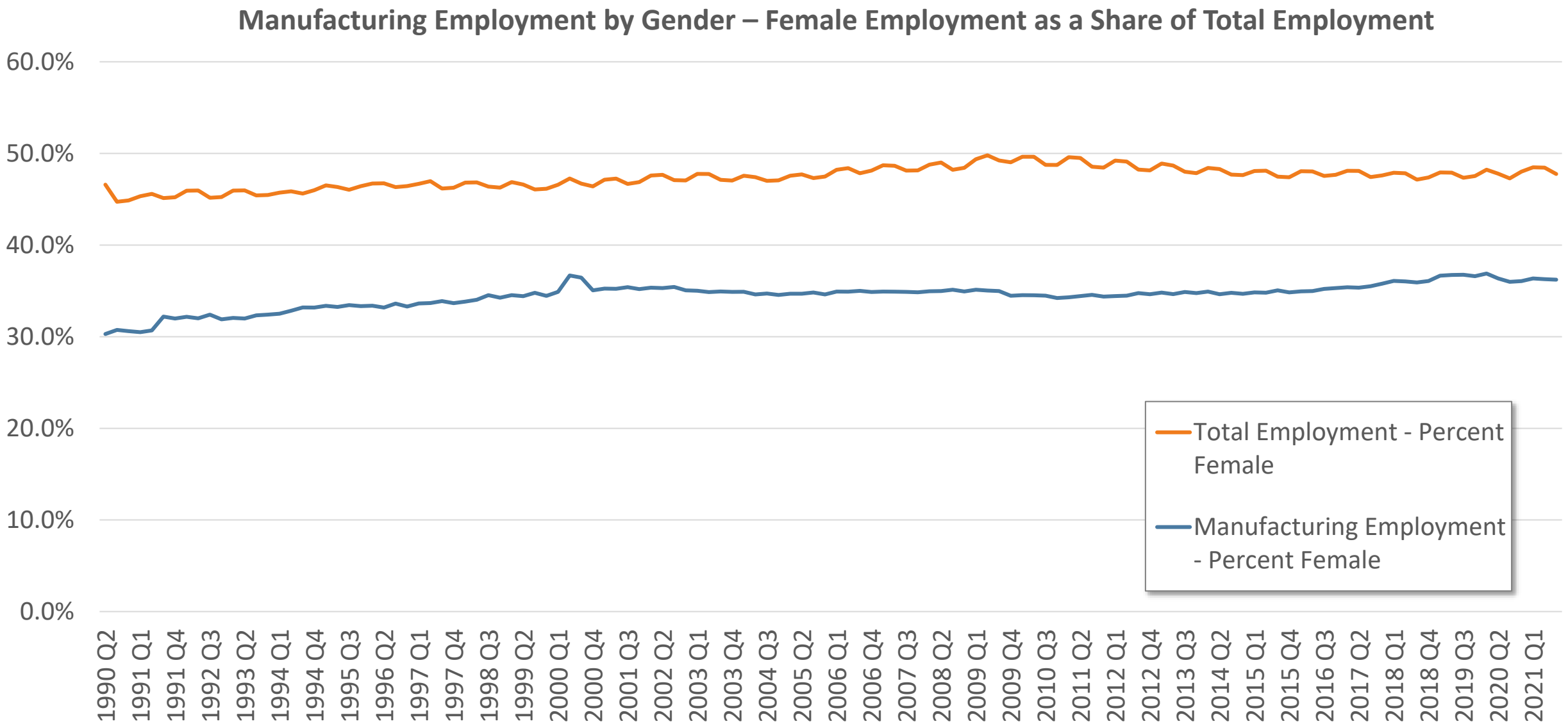

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Looking for Challenges – Surprises

Looking for Insights, Not Precision

What is the "story" the data is trying to tell you?

- *"It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so." - Mark Twain*
- *"There are three kinds of lies: 1) Lies, 2) Damned Lies & 3) Statistics" - Mark Twain*
- *"He uses statistics as a drunken man uses lamp-posts - For support rather than illumination." - Andrew Lang (1844-1912)*

In the end, when you look at secondary data you should ***believe it all and trust none of it. – Dr. Steven Deller***

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