

# QWI and Shift-Share Analysis: Tapping a Powerful Resource

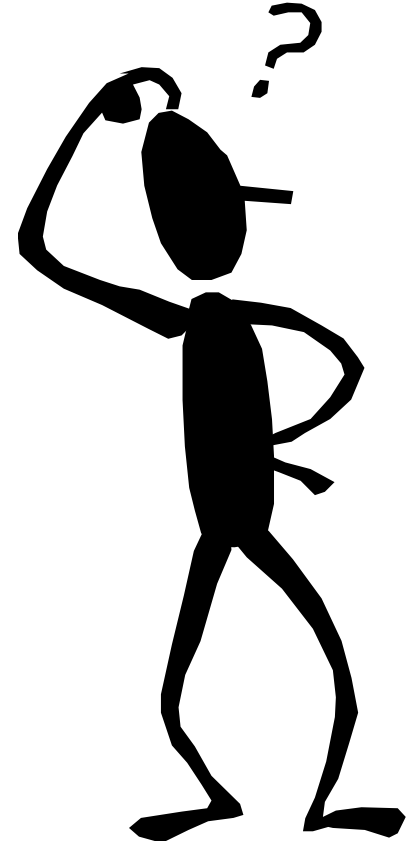
\*originally presented at the  
2013 LED Partnership Workshop  
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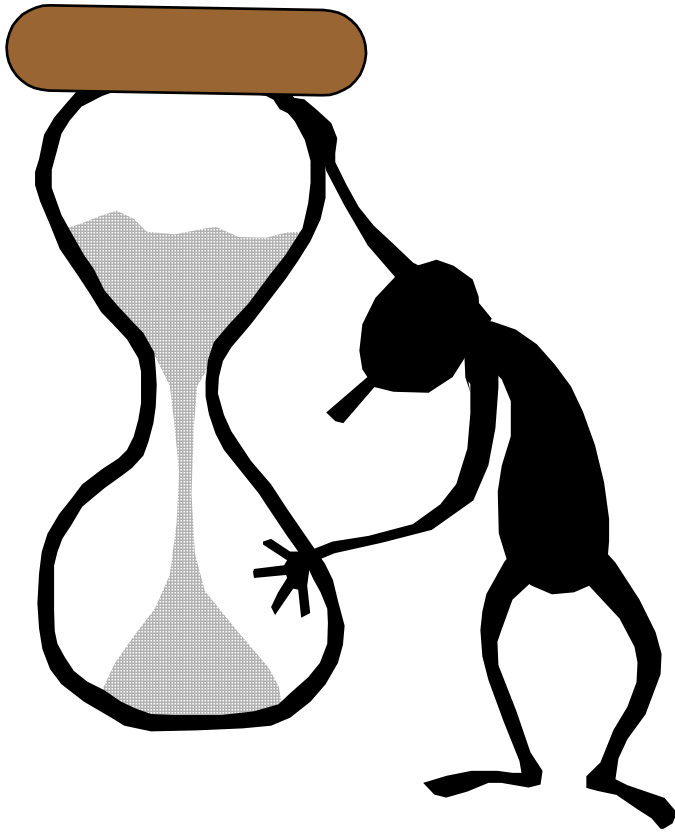
# Shift-What??

## Shift – Share Analysis

- Looks at the growth or decline over time for a specific industry or industrial group and determines if that change is coming from.
  - The study area's share of national (or regional) growth (The Larger Economy – the change due to the patterns that impact the larger geography economy).
  - The mix change in activities - Local Specific Effect – This is the change due to the local mix of the economy on the measure.
  - And the shift change of activities toward the study area - the Local Industrial Change.
- Note: These changes add to the total change.



# Over Time?



- Shift-Share requires two point in time
- Same quarter - different year
  - Enables point-to-point comparisons
- As an alternative, you can use moving average
  - Eliminates possible seasonal variation
  - Limits the potential of outliers

# What Can I Look at?

## The Eight Quarterly Workforce Indicators

- Beginning of Quarter Employment Total number of workers who were employed by the same employer in both the current and previous quarter
- The difference between current and previous employment at each business
- The number of new jobs that are created by either new area businesses or the expansion of employment by existing firms.
- Total number of accessions that were also not employed by that employer during the previous four quarters.
- Total number of workers who were employed by a business in the current quarter, but not in the subsequent quarter.
- Turnover Rate =  $(1/2) * (\text{full-quarter accessions} + \text{full-quarter separations}) / \text{employment stable jobs}$
- Total quarterly earnings of all full-quarter employees divided by the number of full-quarter employees, divided by 3.
- Total quarterly earnings of all full-quarter new hires divided by the number of full-quarter new hires, divided by 3.

# What do I need to start?

You need to identify the following

- The QWI of interest
- The industry
- Specific demographic of interest

***In addition,***

- The time periods to compare
  - Note: Data is not seasonally adjusted
- Select the geographic areas (county level and higher)

# Tremendous Flexibility

- You could select multiple counties to create a new area
  - Not bound by physical proximity
- Add or delete counties to a predefined area (workforce board or MSA's)

# What can I do with this?

Determine if changes in

Employment, Turnover, Separations, Wages  
are due to

- The state
- Local economy
- The local industry

For different age groups, education and  
race/ethnicity by sex

# Answering What Questions?

- Who is filling what jobs?
- What industries are biggest employers?
- What industries employ the largest numbers of particular types of worker?
- Which industries are expanding/contracting employment?
- What industries are creating the most jobs?
- What industries are hiring the most workers?
- Which industries are hiring older workers?

***By sex, age, race and education***



# Anything Else?

- Which industries are hiring young workers?
- What geographic areas are doing the most hiring?
- What workers are leaving jobs?
- What industries are workers leaving?
  - 1. What is the turnover rate in the workforce?
  - 2. What proportion of workers are new?
- What are the average earnings of core employees?
- What are new hires earning?

***By age groups, by sex, by industry, education and race***

**All of this without being concerned with confidentiality!**

# Industrial Sectors/Clusters

- You could select a group of industries or other interested subgroups
- It is possible to report both the industries and the aggregate
- Can share the data and the analysis
  - **does not** contain confidential information



# Implications



- Moves us from being a vendor to a partner

**By**

- giving our partners tools to understand their economic trends.

**And,**

- enabling those who want to combine or compare various categories captured with QWIs.

# In our Partners Hands

- Empowers local users to combine subsets of data to fit their needs.
- Creates the point of starting analysis that businesses and policy makers can use
- Allows LMI producers to assist our partners as they review policies and prepare plans they can use.
- Customize reports and prepare data for additional analysis
- Moves the discussion from what data is available to what can you me tell about...



# Advantages

- Employment data is readily available
  - No issues with confidentiality
  - Detailed information
    - Eight measures
      - New Hires, Employment, Average Wage, Separations, Turnover, Average Wages for New Hires, Job Created and Net Job Change
        - » By Age, Sex, Race, Education and Industry by County
- Quarterly data from 1990 to most recent available
  - (2013 1st quarter now available)


# An Example

## Questions:

- How has the rate of separations for those aged 25 to 34 changed in Milwaukee County from 2007 to 2012. **How** does that compare to the working population **and** how does this compare to the state?

- 1. Geography
- 2. Firm Characteristics
- 3. Worker Characteristics
- 4. Indicators
- 5. Quarters
- 6. Summary and Export

- State**
- Search:
- Alabama
  - Alaska
  - Arizona
  - Arkansas
  - California
  - Colorado
  - Connecticut
  - Delaware
  - District of Columbia
  - Florida
  - Georgia
  - Hawaii
  - Idaho
  - Illinois
  - Indiana
  - Iowa
  - Kansas
  - Kentucky
  - Louisiana

 **Wisconsin**  
Counties: 72, Metro/Micropolitan Areas: 29, Workforce Investment Areas: 11

- Geography Type**
- States
  - Counties
  - Micro/Metropolitan Areas
  - Workforce Investment Areas**

- Areas**
- Search:
- [Check All](#) | [Check None](#) | [Invert Selection](#)
- 55 Wisconsin
  - 55550015 015 Milwaukee WDA
  - 55550030 030 Southeast WDA
  - 55550040 040 Northwest WDA
  - 55550045 045 Washington-Ozaukee-Waukesha WDA
  - 55550065 065 West Central WDA
  - 55550085 085 Western WDA
  - 55550090 090 Fox Valley WDA
  - 55550095 095 Bay Area WDA
  - 55550100 100 North Central WDA
  - 55550105 105 South Central WDA
  - 55550110 110 Southwest WDA

# LED Extraction Tool - Quarterly Workforce Indicators (QWI)

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- 1. Geography
- 2. Firm Characteristics
- 3. Worker Characteristics
- 4. Indicators
- 5. Quarters
- 6. Summary and Export

<b>Industry Detail Level</b> ⓘ <input checked="" type="radio"/> NAICS Sectors <input type="radio"/> NAICS 3-digit Subsectors <input type="radio"/> NAICS 4-digit Industries	<b>Firm Ownership</b> ⓘ <input type="radio"/> All <input checked="" type="radio"/> All Private	<b>Firm Age</b> ⓘ <input checked="" type="checkbox"/> All Firm Ages <input type="checkbox"/> 0-1 Years <input type="checkbox"/> 2-3 Years <input type="checkbox"/> 4-5 Years <input type="checkbox"/> 6-10 Years <input type="checkbox"/> 11+ Years	<b>Firm Size</b> ⓘ <input checked="" type="checkbox"/> All Firm Sizes <input type="checkbox"/> 0-19 Employees <input type="checkbox"/> 20-49 Employees <input type="checkbox"/> 50-249 Employees <input type="checkbox"/> 250-499 Employees <input type="checkbox"/> 500+ Employees
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## Industries ⓘ

Search:  🔍

[Check All](#) | [Check None](#) | [Invert Selection](#)

- 00 All NAICS Sectors
- 11 Agriculture, Forestry, Fishing and Hunting
- 21 Mining, Quarrying, and Oil and Gas Extraction
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)
- 92 Public Administration

[Click to select 53 Real Estate and Rental and Leasing](#)



All Firm Ages and Sizes Private Employment - by Firm Age Private Employment - by Firm Size

AgeGroup/Sex Education/Sex Race/Ethnicity

**LEHD State of Wisconsin County Reports - Quarterly Workforce Indicators**

Select Criteria below. A new report will be created below as selections change.

Year **2012** Geographic Grouping **County** or **Information by Detailed Industry**  
 Quarter **Q1** County **079 Milwaukee**  
 Sex **Male and Female** Industry **All NAICS Sectors**  
 AgeGroup **14-99** Ownership **All (1-5)**

[Download Dataset](#) [Print Table](#)

QWI Quick Facts	Milwaukee (Q1)	Milwaukee (Avg:Selected + 3 Prior qtrs)	Wisconsin (Q1)	Wisconsin (Avg:Selected + 3 Prior qtrs)
Total Employment	475,569	485,409	2,593,704	2,639,406
Net Job Flows	-9,095	-1,556	-3,933	12,878
Job Creation	17,032	20,395	96,273	125,290
New Hires	52,660	63,662	250,907	313,993
Separations	73,913	77,916	314,952	383,987
Turnover	8.9%	8.4%	7.3%	7.9%
Avg Monthly Earnings	\$4,332.00	\$4,164.00	\$3,651.00	\$3,591.00
Avg New Hire Earnings	\$2,219.00	\$2,308.25	\$1,970.00	\$2,098.75

[View Detailed Comparison Reports](#)  
[For more information](#)

# The data 2011(2)-2012(1)

Age Group	Industry	Milwaukee	Wisconsin
14-99	All Industries	77,916	383,987
14-99	Manufacturing	4,407	33,542
25-34	All Industries	19,720	87,347
25-34	Manufacturing	1,134	7,557

- For 2011(2) to 2012 (1) 20 percent of the separations in state were in Milwaukee
- Separations in Manufacturing accounted for 5 percent in Milwaukee and 9 percent statewide
- In Manufacturing, 26 percent of the separations in Milwaukee were in the age group 25-34; statewide 23 percent
- 18 percent of manufacturing workforce is 25-34; Milwaukee and statewide

# The data 2006(2)-2007(1)

Age Group	Industry	Milwaukee	Wisconsin
14-99	All Industries	92,008	451,665
14-99	Manufacturing	22,476	97,461
25-34	All Industries	5,128	43,503
25-34	Manufacturing	1,152	9,600

- For 2006(2) to 2007 (1) 20 percent of the separations in state were in Milwaukee
- Separations in Manufacturing accounted for 24 percent in Milwaukee and 22 percent statewide
- In Manufacturing, 27 percent of the separations in Milwaukee were in the age group 25-34; statewide 22 percent
- 18 percent of Milwaukee's workforce is 25-34; statewide 19 percent

# The Math

- **Larger Economy** = Local Base Year Specific Group \*  
(Surrounding Area Comparison Year Total / Surrounding Base Year Total)-1
- **Local Specific Effect** = Local Base Year Specific Group  
\*((Surrounding Area Comparison Year Specific Group / Surrounding Base Year Specific Group)-1) -((Surrounding Area Comparison Year Total / Surrounding Base Year Total)-1)
- **Local Industrial Change** = Local Base Year Specific Group \*  
((Local Comparison Year Specific Group/ Local Base Year Specific Group) -1) – (Surrounding Area Comparison Year Specific Group / Surrounding Area Base Year)

Note when added together these = change in specific group from base year to comparison year

# Findings

Milwaukee's separations in manufacturing for 25-34 year olds did not match the expected change in the state.

- If Milwaukee had matched the state overall, it would have experienced a decline of 428 separations.
- If Milwaukee had experienced the same rate of separations for this age group, as the state in Manufacturing, separations would have increased by 183.
- If the 25-34 year olds in Manufacturing in Milwaukee had experienced the same separation as Milwaukee the separations would have increased by 227.
- Actual change was a decrease of 18 ( $-428+183+227$ )

# Implication

- Milwaukee's separations for those 25 to 34 who worked in Manufacturing is different from the state and the industry at large

Now we can start to evaluate why

# Thank you

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