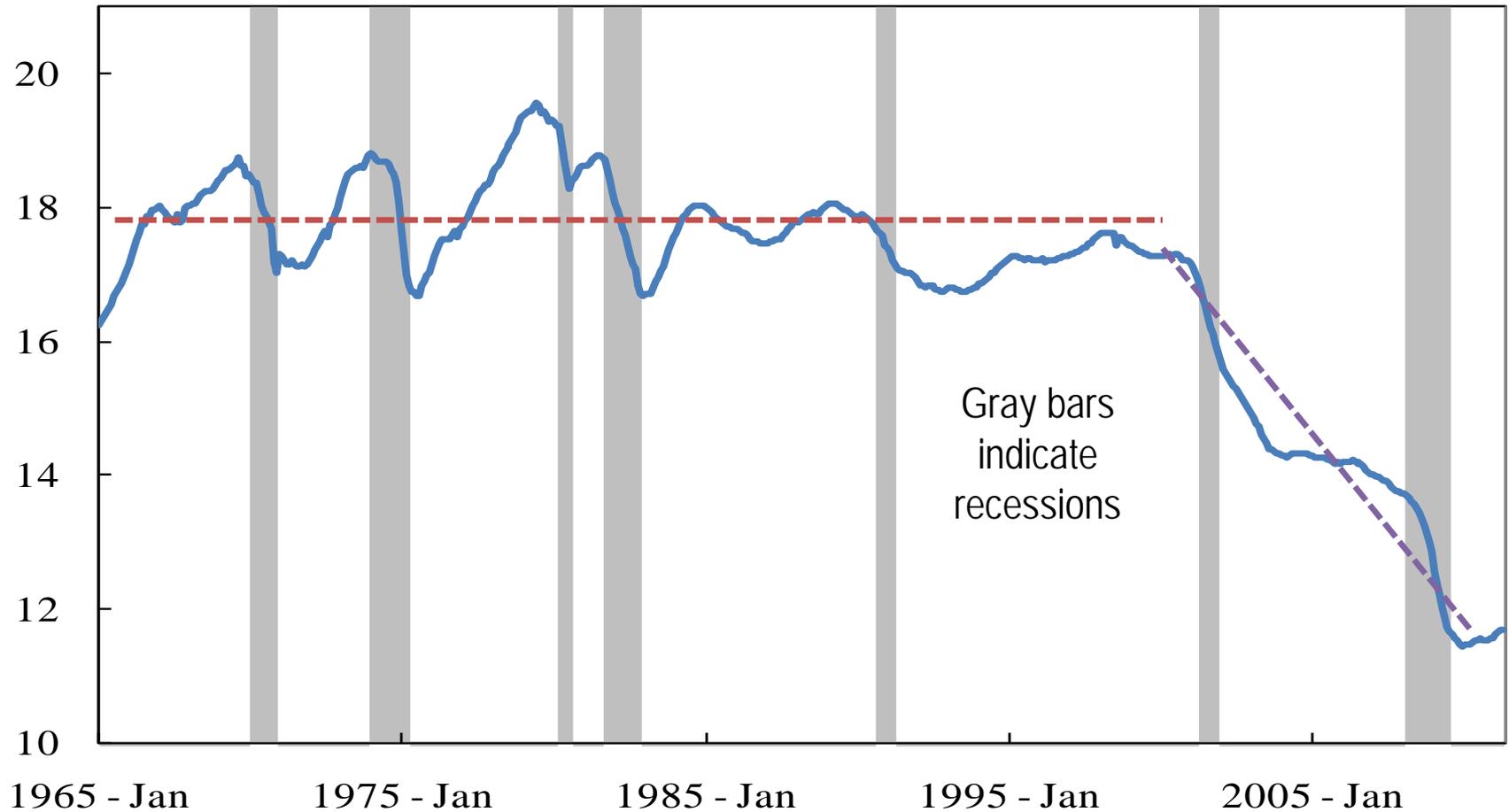


# Misperception - Productivity on Employment

Rising Productivity does *not* create employment losses

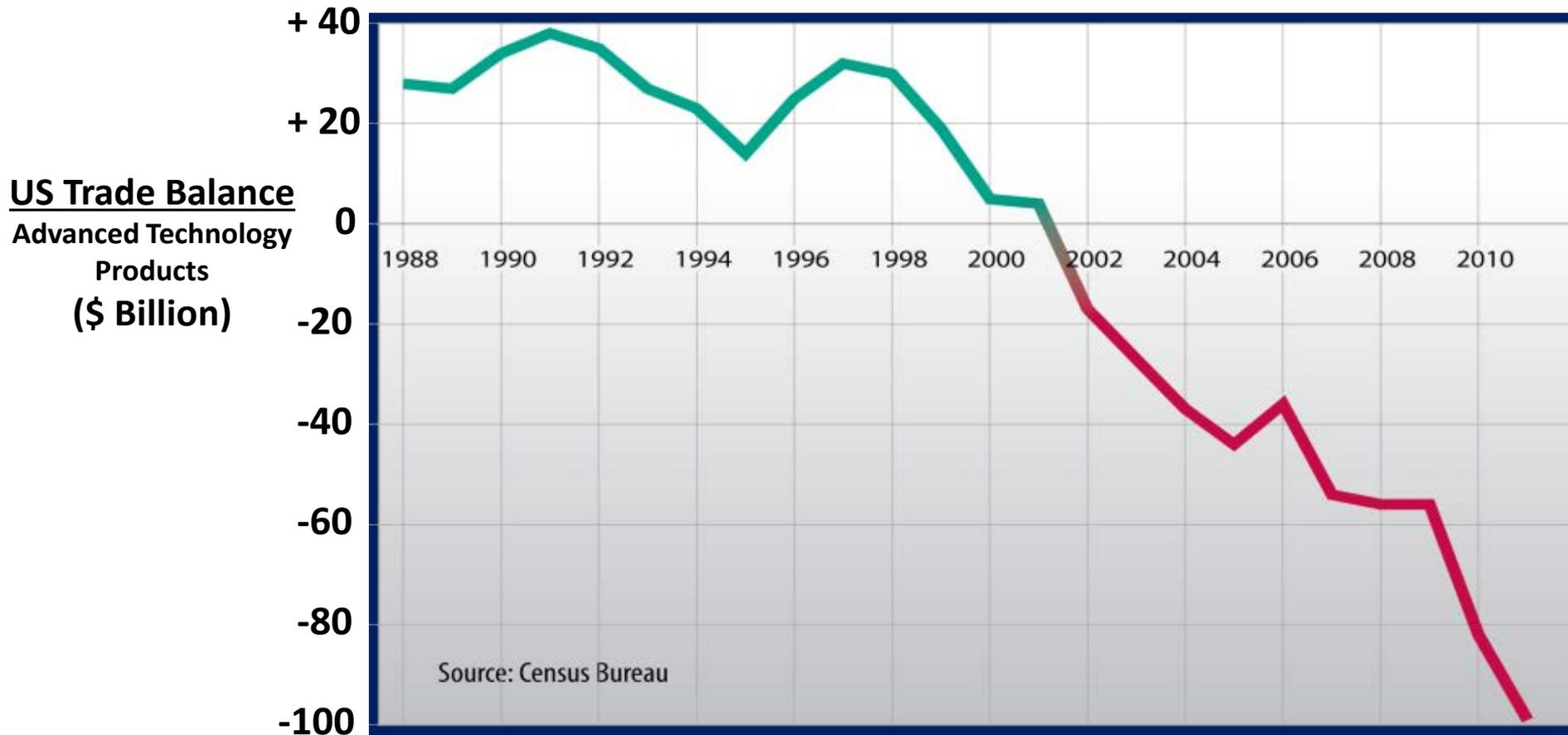
1965 – 2000 : US Mfg output rises 6x, stable employment

Millions



# Challenge: US losing leadership in Advanced Products

## U.S. Trade Balance for Advanced Technology Products



# Products invented here, now made elsewhere - not driven by labor cost



Products invented here, now made elsewhere - not driven by labor cost



**The problem with this is  
that you lose out on  
the future innovation cycle**

# **Advanced Manufacturing Products**

Biotechnology

Life science technologies

Optoelectronics

Information and communications

Electronics

Flexible manufacturing

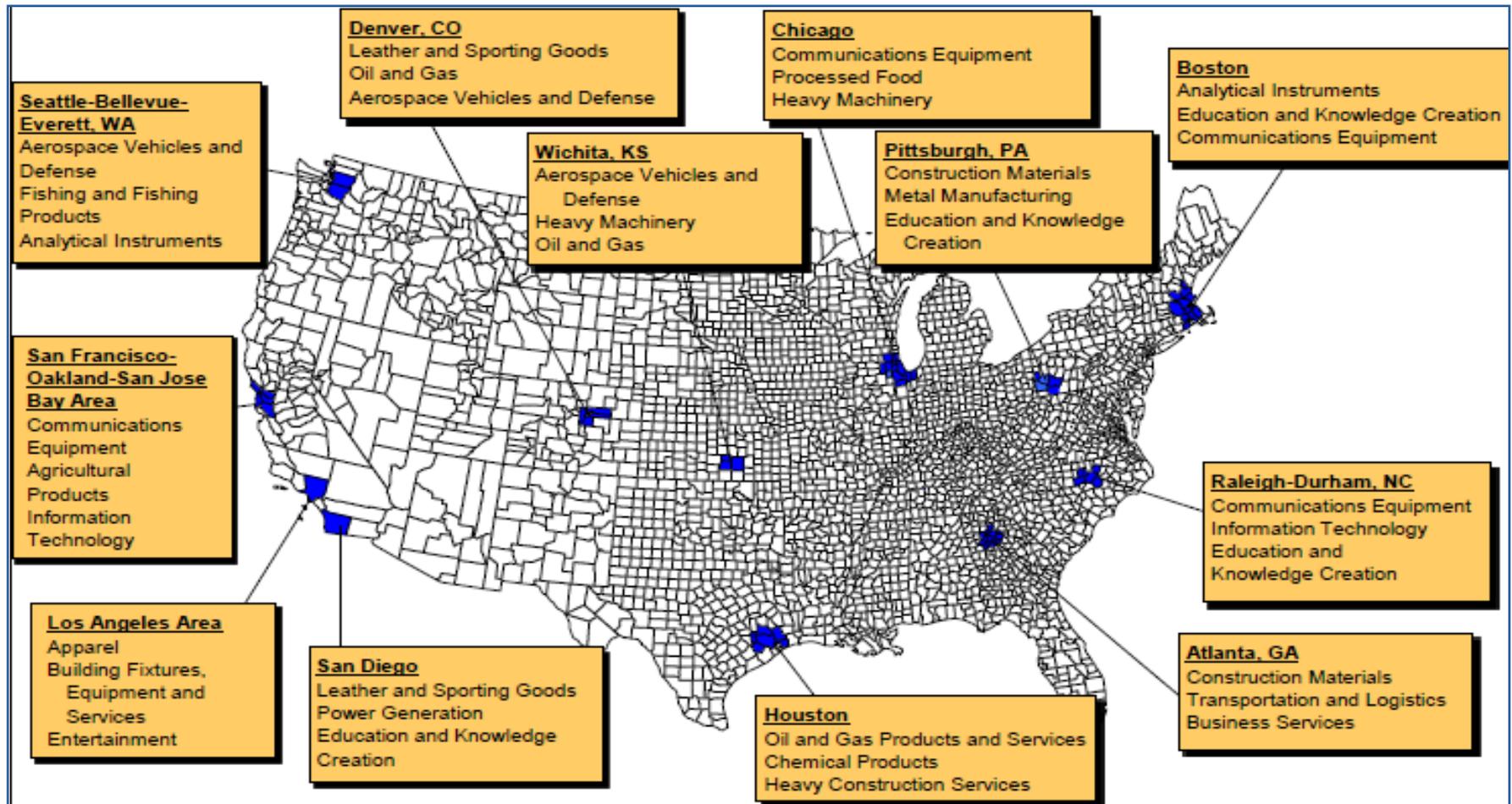
***Advanced materials***

***Aerospace***

Weapons

Nuclear technology

# Highest Ranking Clusters in Terms of Share of National Employment



Note: Clusters listed are the three highest ranking clusters in terms of share of national employment.

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School, 11/2006.

## Wichita, KS Metro Area

### Why Manufacturing Matters

Manufacturing provides high-wage jobs and is a critical part of the economic base in many metropolitan areas. More metropolitan areas specialize in manufacturing today than 30 years ago.

### Specialization in Manufacturing

Specialization in 1980:

**1.51**

In 1980, manufacturing's percentage of Wichita's total employment was 1.51 times its percentage nationwide.

Specialization in 2010:

**2.1**

In 2010, manufacturing's percentage of Wichita's total employment was 2.1 times its percentage nationwide.

Manufacturing specialization groups:

#### MACHINERY BELT



These metro areas have a high degree of specialization in machinery and generally specialize in leather, primary metals, fabricated metal products, and motor vehicles and parts.

### Manufacturing Jobs in Wichita (national values in parentheses)

Manufacturing jobs:

**52,384** RANK 38  
(11,499,905)

Change in manufacturing jobs, 2000 to 2010:

**-28.3%** RANK 29  
(-33.2%)

Percent of manufacturing jobs classified as "very high-tech":

**64.1%** RANK 3  
(16.1%)

Manufacturing jobs as percent of all jobs:

**17.8%** RANK 1  
(8.5%)

Change in manufacturing jobs, Q1 2010 to Q4 2011:

**-2.0%** RANK 85  
(2.7%)

Percent of manufacturing jobs classified as "moderately high-tech":

**12.7%** RANK 75  
(18.6%)

Number of employees, average manufacturing plant (2009):

**70.7** RANK 16  
(39.9)

Top three manufacturing industries in Wichita, by their share of all manufacturing jobs:

**Aerospace**  
58.7%  
**Machinery**  
9.0%  
**Fabricated Metals**  
6.5%

### Average Manufacturing Wages

■ WICHITA ■ U.S. AVERAGE

Very high-tech manufacturing

**\$69,623** (RANK: 55)

Moderately high-tech manufacturing

**\$63,517** (RANK: 61)

All manufacturing

**\$64,160** (RANK: 32)

All jobs

**\$41,984** (RANK: 73)

\$0 20k 40k 60k 80k 100k

### For More Information

Report:  
[brookings.edu/usmfg](http://brookings.edu/usmfg)

Interactive:  
[brookings.edu/usmfginteractive](http://brookings.edu/usmfginteractive)

Email and Twitter:  
[rharvey@brookings.edu](mailto:rharvey@brookings.edu)  
[@BrookingsMetro](https://twitter.com/BrookingsMetro)  
[#usmfg](https://twitter.com/usmfg)

Data notes and sources:  
Ranks are out of top 100 metro areas. Brookings analysis of Moody's Analytics data; see full report for details. Data from 2010 unless otherwise noted.

# Most Manufacturing-Specialized Metropolitan Areas among the 100 Largest Metropolitan Areas, 2010

Metropolitan Area	Manufacturing Percent of All Jobs in Metropolitan Area	Metropolitan Manufacturing Job Percentage As Multiple of National Manufacturing Job Percentage
Wichita, KS	17.8%	2.10
San Jose-Sunnyvale-Santa Clara, CA	17.5	2.07
Grand Rapids-Wyoming, MI	15.7	1.85
Lancaster, PA	15.3	1.80
Greensboro-High Point, NC	14.8	1.74
Milwaukee-Waukesha-West Allis, WI	13.8	1.62
Modesto, CA	12.7	1.50
Youngstown-Warren-Boardman, OH-PA	12.6	1.49
Greenville-Mauldin-Easley, SC	12.6	1.49
Toledo, OH	12.4	1.46
Chattanooga, TN-GA	12.0	1.41
Rochester, NY	11.7	1.38
Akron, OH	11.7	1.37
Cleveland-Elyria-Mentor, OH	11.6	1.36
Worcester, MA	10.9	1.28
Scranton--Wilkes-Barre, PA	10.8	1.27
Detroit-Warren-Livonia, MI	10.7	1.27
Portland-Vancouver-Beaverton, OR-WA	10.6	1.25
Hartford-West Hartford-East Hartford, CT	10.5	1.24
Allentown-Bethlehem-Easton, PA-NJ	10.4	1.23

Source: Authors' analysis of Moody's Analytics data

## Wichita, KS Metro Area

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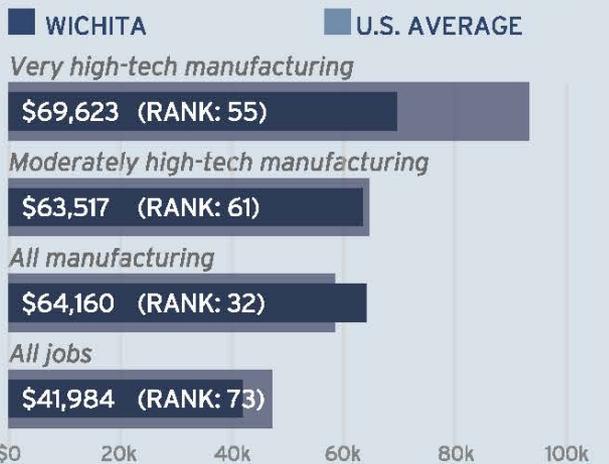
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9.0%
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6.5%

### Average Manufacturing Wages



### For More Information

Report: [brookings.edu/usmfg](http://brookings.edu/usmfg)  
 Interactive: [brookings.edu/usmfginteractive](http://brookings.edu/usmfginteractive)  
 Email and Twitter: [rharvey@brookings.edu](mailto:rharvey@brookings.edu) @BrookingsMetro #usmfg  
 Data notes and sources: Ranks are out of top 100 metro areas. Brookings analysis of Moody's Analytics data; see full report for details. Data from 2010 unless otherwise noted.

# High-Technology Industries

High-Technology Category	Industry	Percent of industry employment in science and engineering occupations
<b>Very High Technology*</b>	Computer and Electronic Product Manufacturing	37.4%
	Pharmaceutical & Medicine Manufacturing	32.2
	★ Aerospace Product and Parts Manufacturing	31.0
<b>Moderately High Technology**</b>	★ Petroleum & Coal Products Manufacturing	14.5
	Chemical Manufacturing other than Pharmaceuticals & Medicines	12.8
	Transportation Equipment Manufacturing other than Motor Vehicles & Parts and Aerospace	12.7
	★ Machinery Manufacturing	12.5
	Electrical Equipment, Appliance, and Component Manufacturing	12.3

\*Science and engineering occupations as percent of total industry employment are at least five times the national average.

\*\*Science and engineering occupations as percent of total industry employment are at least two but no more than five times the national average.

Source: Authors' analysis of Bureau of Labor Statistics Occupational Employment Statistics survey data for 2010

★ Industry specialization in Wichita MSA as measured by employment Location Quotient

Why It Matters

Basic Geography

Industry Specialties

Industry Patterns

Wage Variations

Plant Size Variations

Job Changes

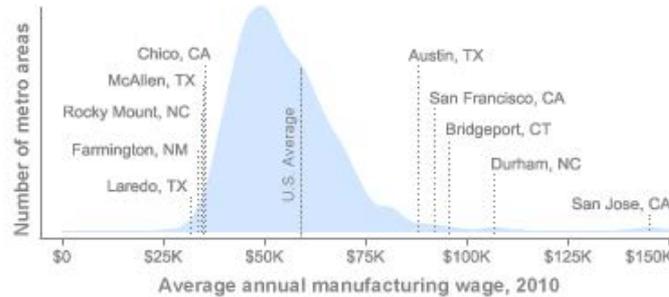
Urban Location

## Manufacturing Wages Are Generally High, But Vary Widely From Place to Place

*High wages are a key component of the high-road approach to manufacturing*

Pay varies by metropolitan areas both because of differences in local industry mix (i.e. which manufacturing industries are most and least prevalent) and because of location specific factors within an industry, one of which is the presence of high-road manufacturing firms.

High-road manufacturing—powered by highly skilled workers at all levels—is a technique that firms in any industry can use to innovate. Higher wages paid to more-skilled workers are offset by their higher productivity.



Wichita vs US Annual Wage

VHTM, -25%  
MHTM, -6%

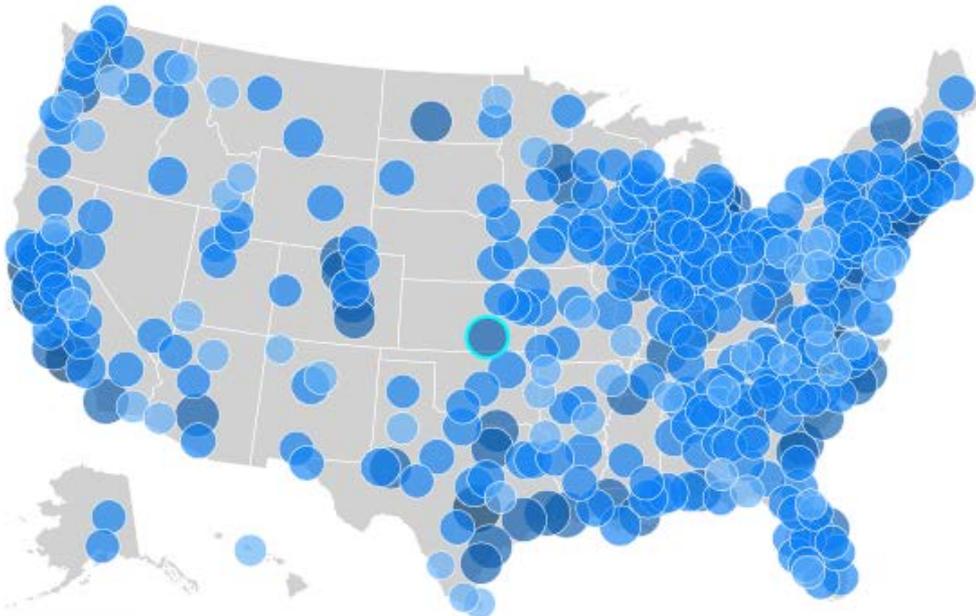
Average manufacturing wage, 2010

Metro Finder

Quick Facts

Quick Facts

[Table View]



Wichita, KS

Detailed profile (PDF) >>

Average annual wages, 2010

All manufacturing

**\$64,160**

Very high-tech manufacturing

**\$69,623**

Moderately high-tech manufacturing

**\$63,517**

All jobs (includes non-manufacturing)

**\$41,984**

United States

Average annual wages, 2010

All manufacturing

**\$58,485**

Very high-tech manufacturing

**\$93,315**

Moderately high-tech manufacturing

**\$64,677**

All jobs (includes non-manufacturing)

**\$47,290**

Map Legend



Filter by Population  
At/above: 55,274

<< Use the slider to filter out metro areas by population size

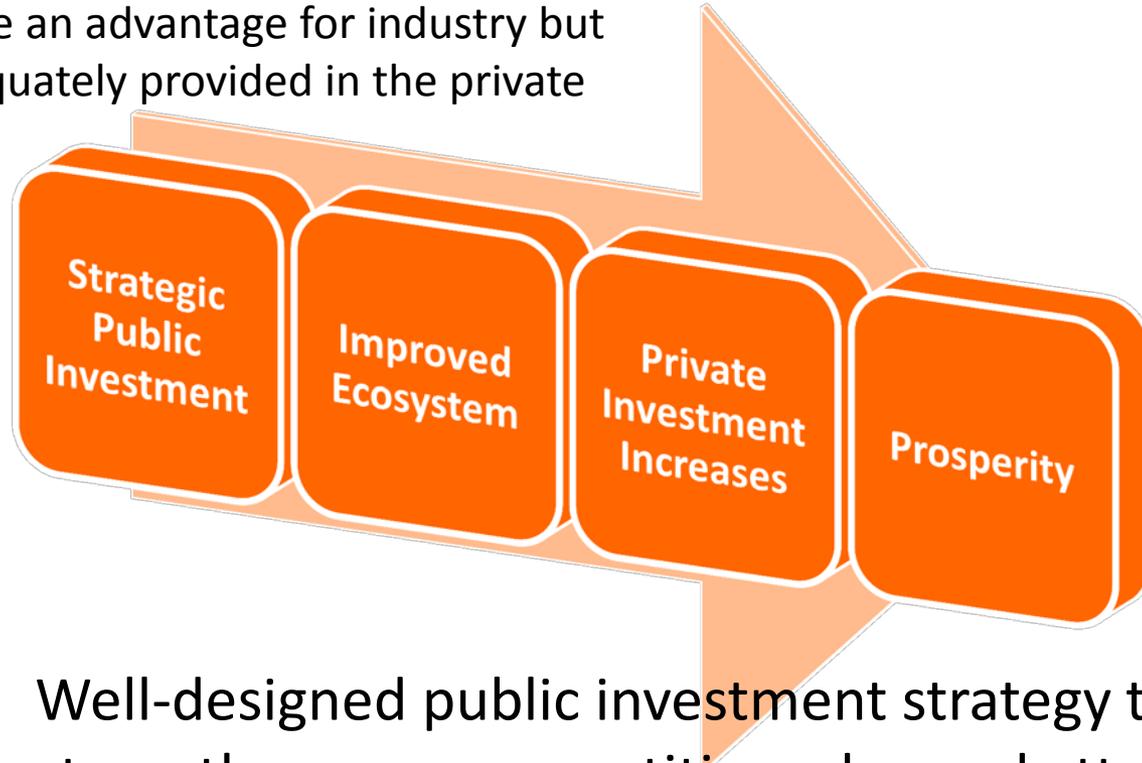
# Manufacturing Concentration for Wichita MSA

<b>QCEW Annual Data Wichita, KS MSA</b>	<b>Employment</b>		<b>Establishments</b>		<b>Total Wages (in thousands)</b>	
	<b>2012</b>		<b>2012</b>		<b>2012</b>	
Total Private Wichita MSA	239,429		14,487		\$10,386,582	
<b>Manufacturing, NAICS 31-33</b>	<b>52,584</b>		<b>702</b>		<b>\$3,333,753</b>	
	<b>22.0%</b>	<b>2.0 LQ</b>	<b>4.9%</b>	<b>1.3 LQ</b>	<b>32.1%</b>	<b>2.4 LQ</b>
<b>Petroleum and coal products manufacturing, NAICS 324 *</b>	635		5		\$56,132	
	<b>0.3%</b>	<b>2.6 LQ</b>	<b>0.0%</b>	<b>1.3 LQ</b>	<b>0.6%</b>	<b>2.7 LQ</b>
<b>Machinery manufacturing, NAICS 333 ~</b>	5,088		64		\$262,019	
	<b>2.1%</b>	<b>2.2 LQ</b>	<b>0.4%</b>	<b>1.3 LQ</b>	<b>2.6%</b>	<b>2.0 LQ</b>
<b>Transportation equipment manufacturing, NAICS 336</b>	30,257		135		\$2,223,079	
	<b>12.8%</b>	<b>10.0 LQ</b>	<b>0.9%</b>	<b>5.5 LQ</b>	<b>22.2%</b>	<b>11.9 LQ</b>
<b>Aerospace product and parts manufacturing, NAICS 3364</b>	30,546		127		\$2,236,602	
	<b>12.8%</b>	<b>28.5 LQ</b>	<b>0.9%</b>	<b>25.0 LQ</b>	<b>21.5%</b>	<b>26.7 LQ</b>

Source: Quarterly Census of Employment and Wages (QCEW), data accessed on January 10, 2014. 2008 was

# Prioritizing Public Investment Pathway to Prosperity

Assets that create an advantage for industry but that are not adequately provided in the private sector.



Well-designed public investment strategy that strengthens our competitive edge and attracts private investment from new and existing manufacturers and leads to broad-based prosperity.