Manufacturing Perspectives

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Federal Reserve Bank of Chicago
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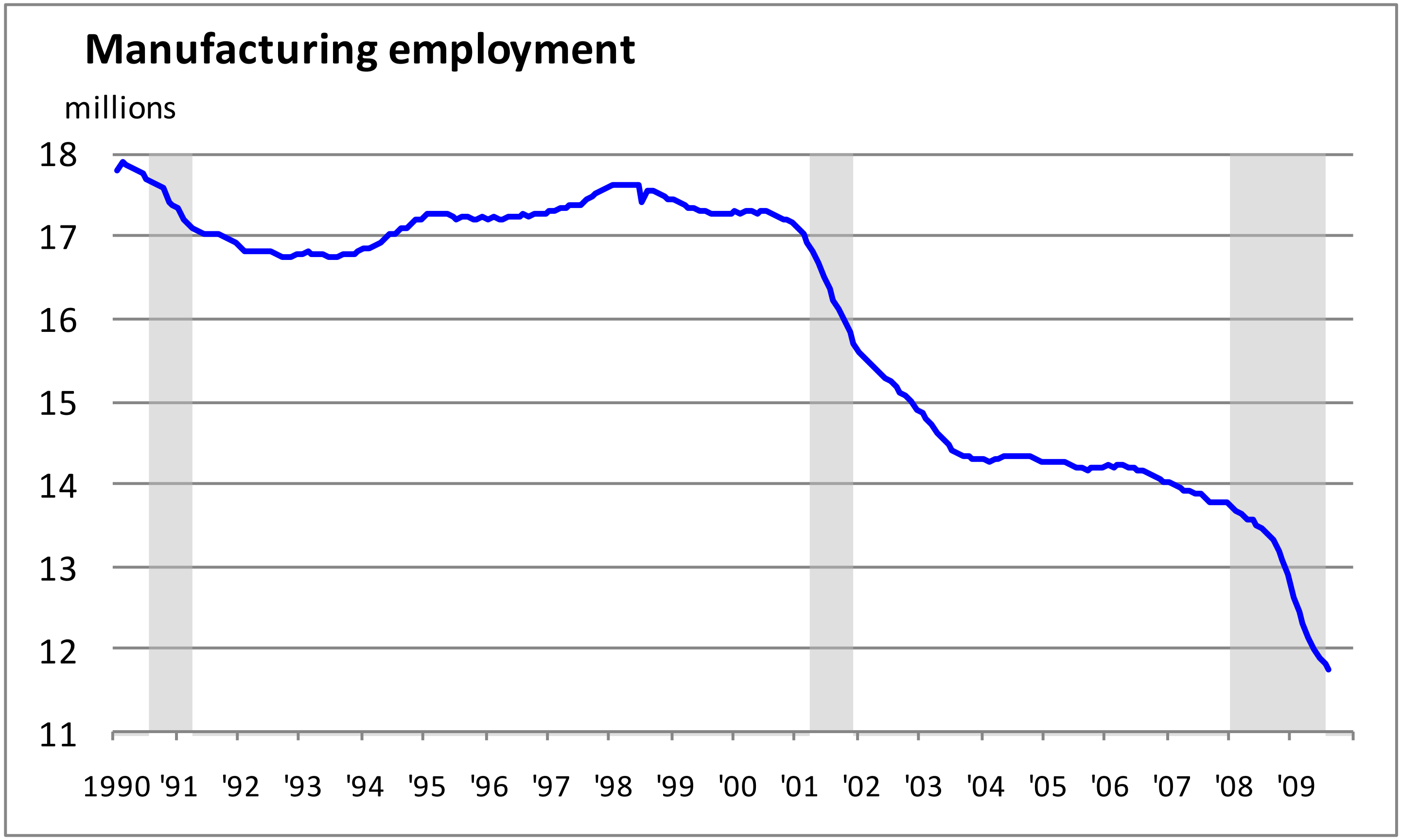
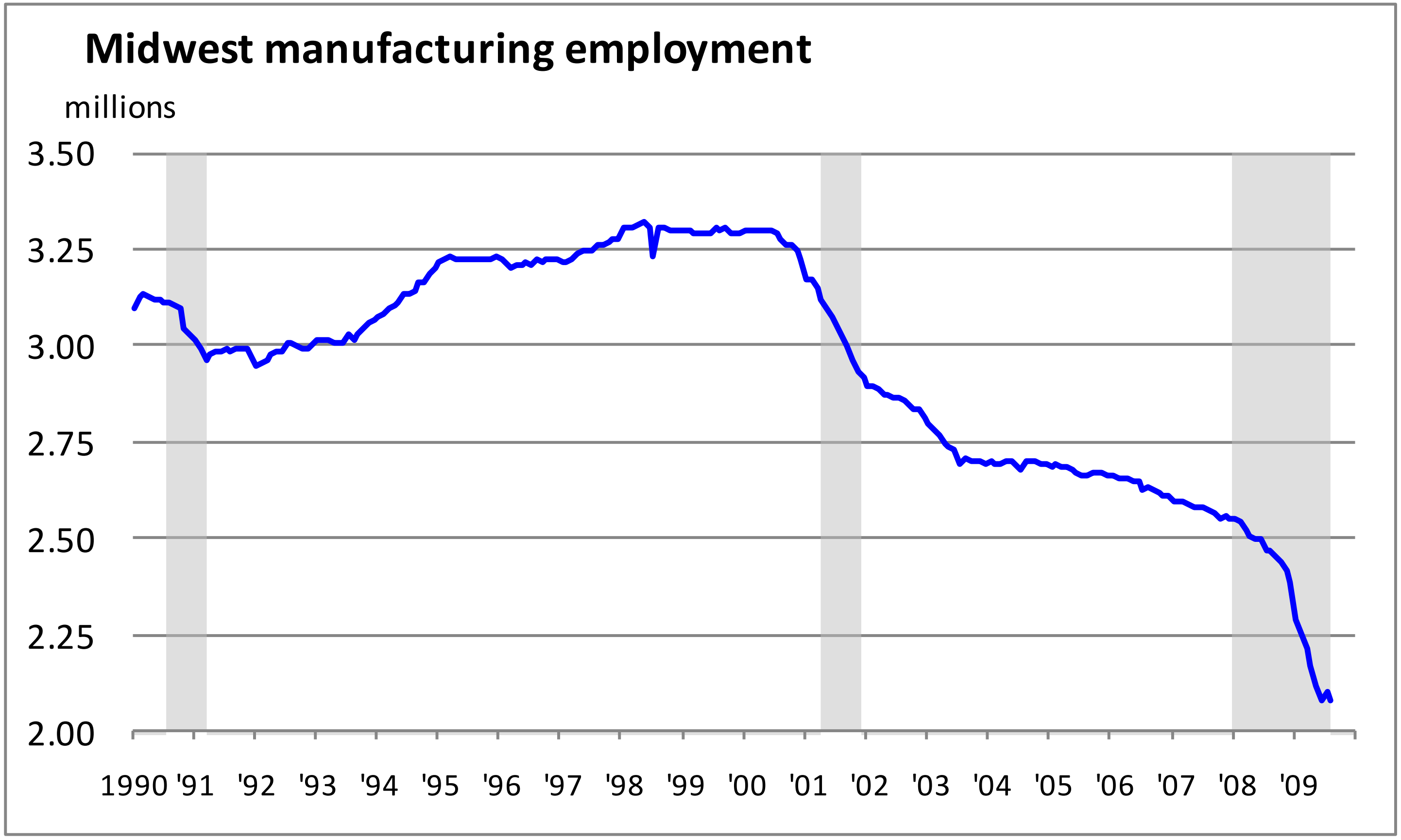
National and Global Perspective

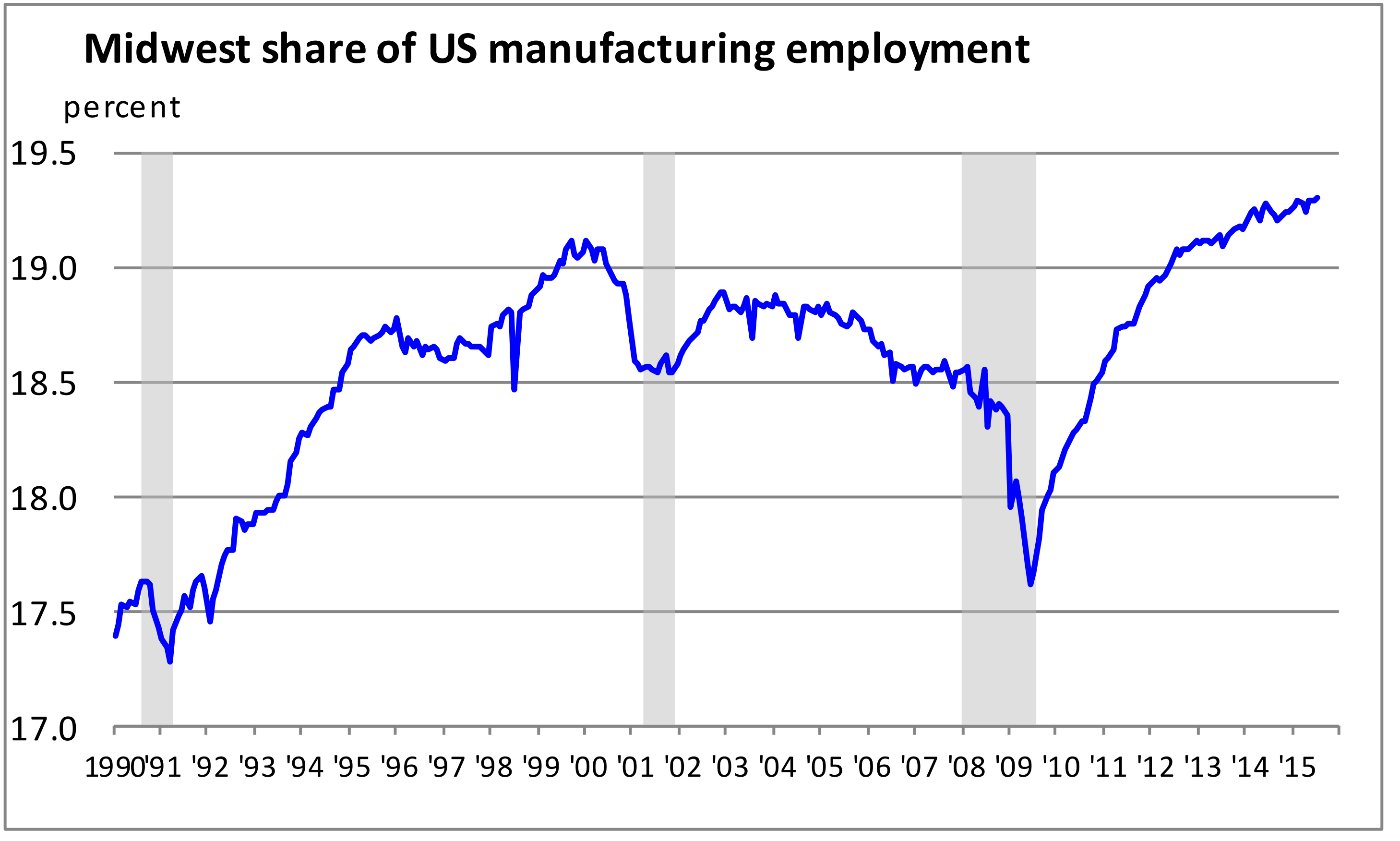
Manufacturing employment has been declining



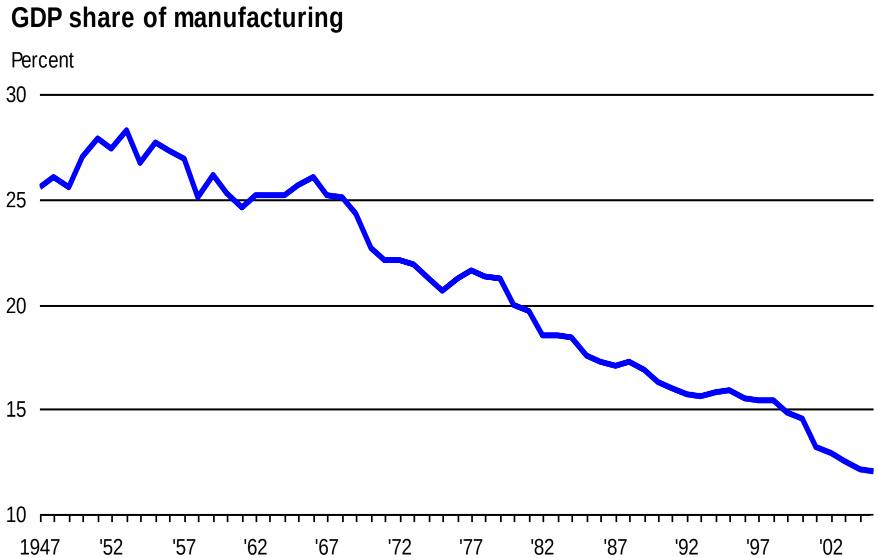
Midwest manufacturing employment has been declining

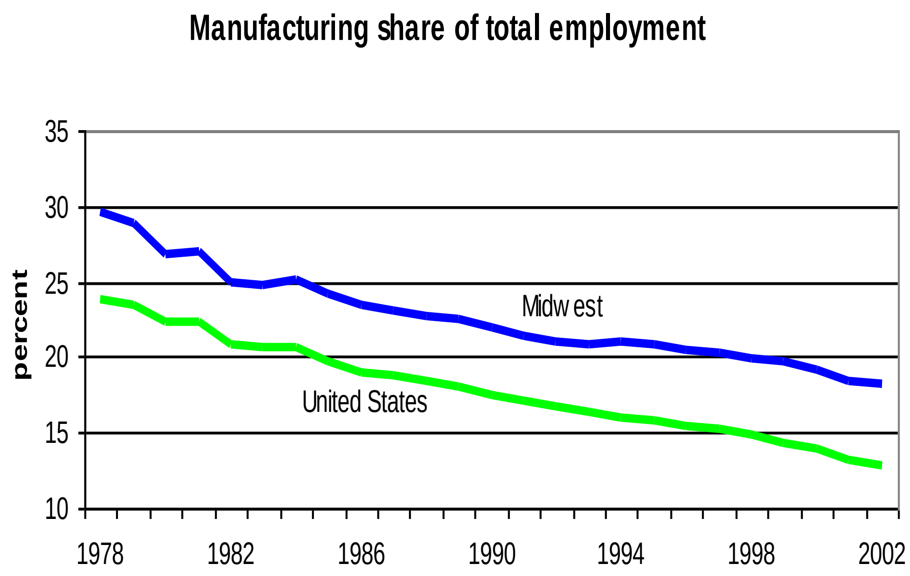


The Midwest continues to increase its share of national manufacturing employment

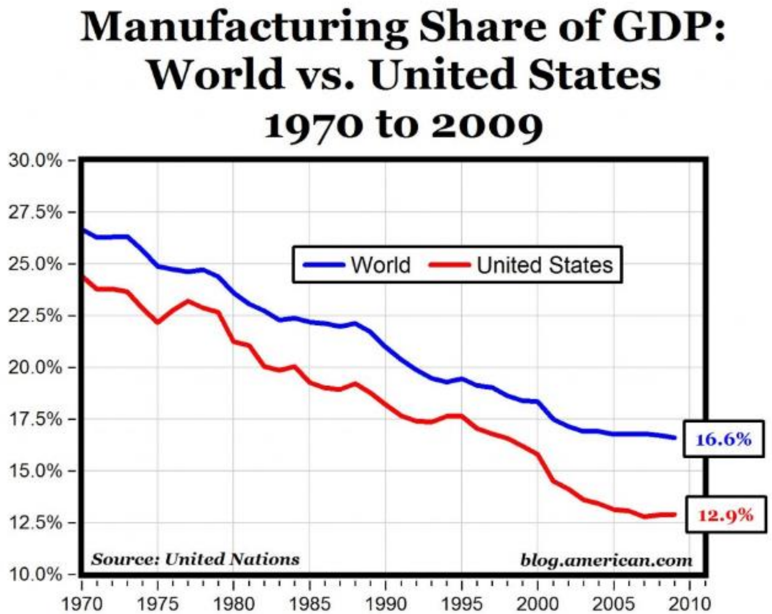


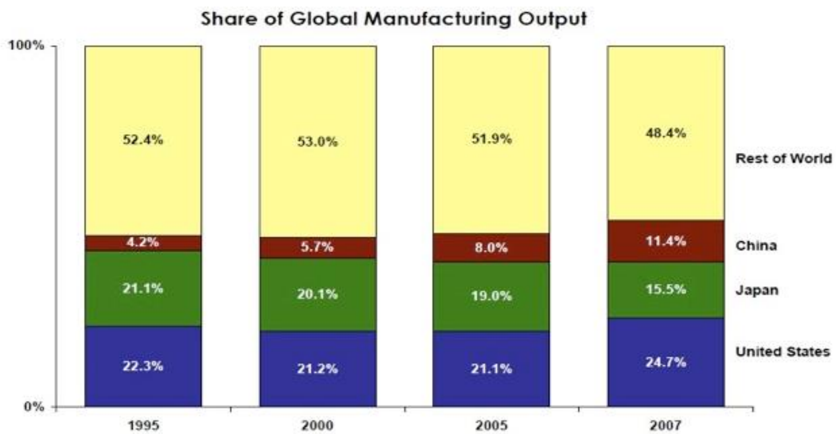
Manufacturing shrinking as nominal share of economies





Manufacturing's decline is world-wide
Surprise: U.S. holds its *share* (China rises!)



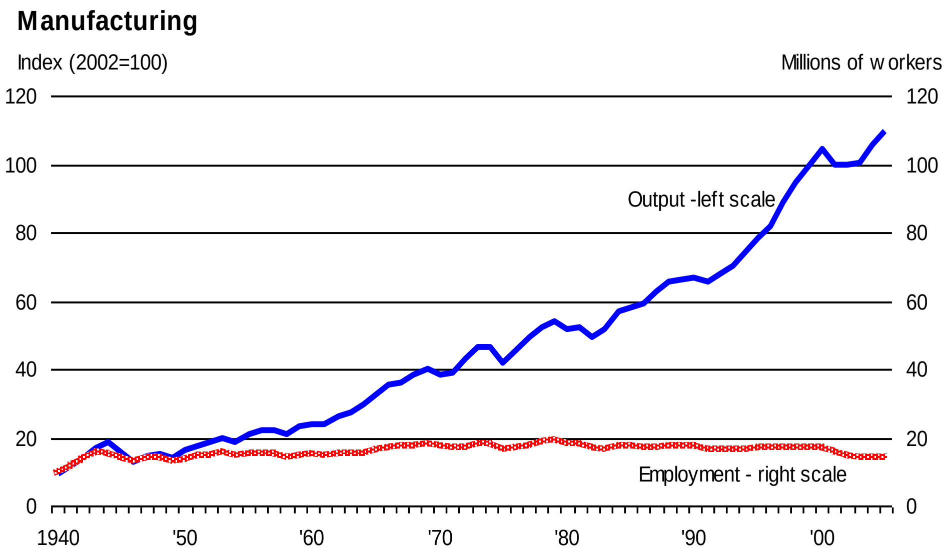


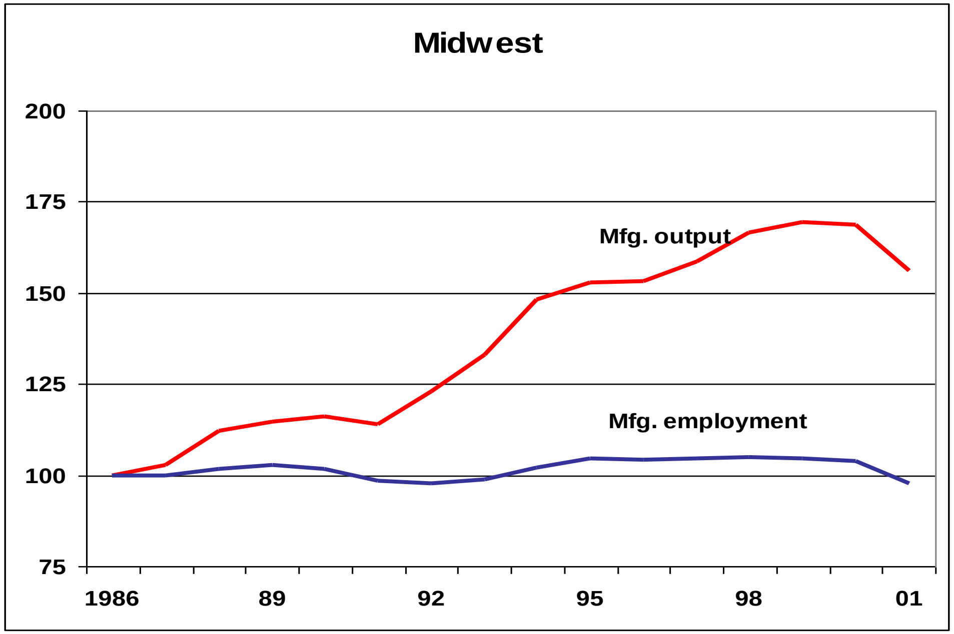
The United States is maintaining its share of global manufacturing; China is taking share from Japan.

Source: United Nations Industrial Development Organization (UNIDO; 2007 is a UNIDO estimate)

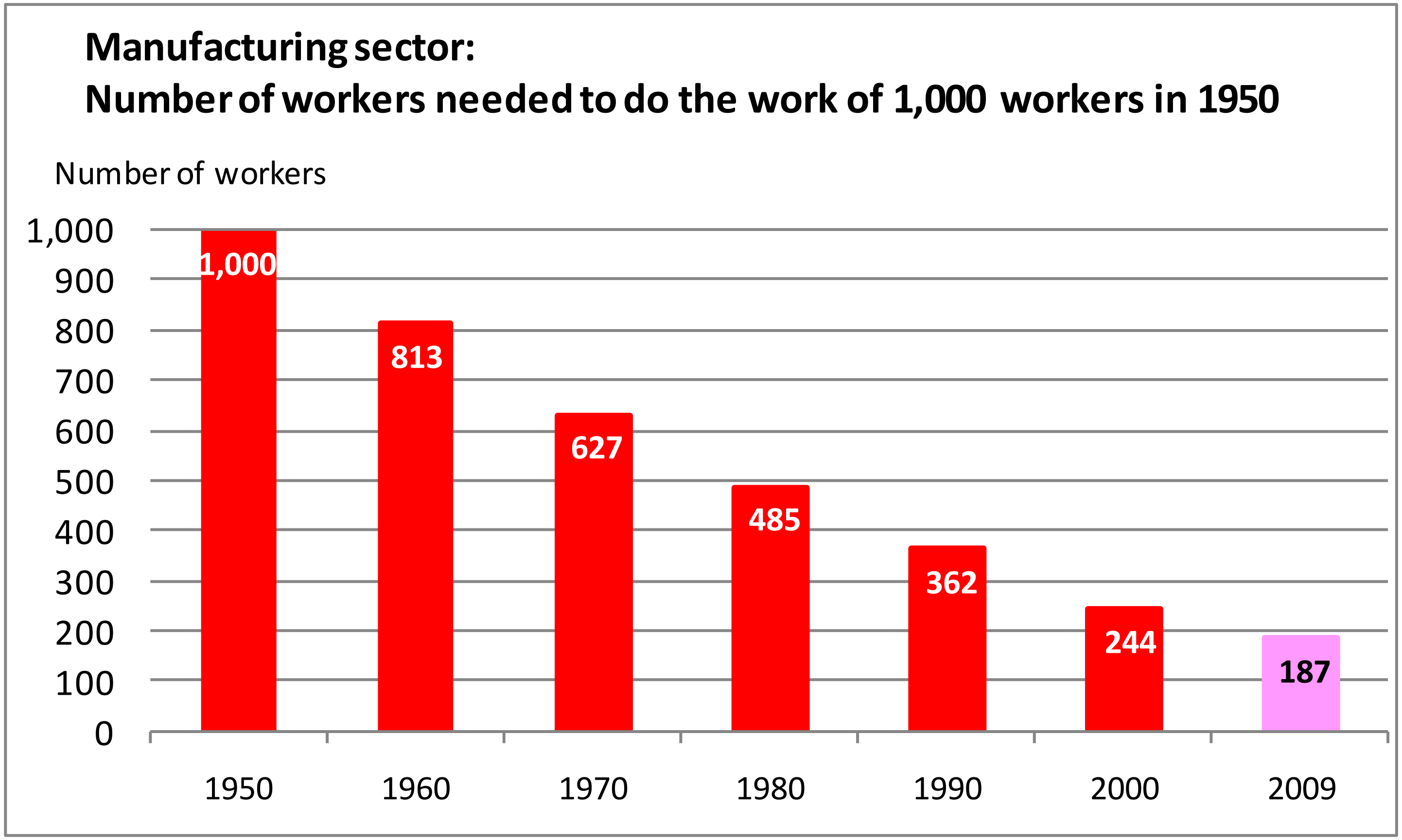
Why Manufacturing Employment Declines

U.S. and regional *real* output growing: Labor needed constant to falling



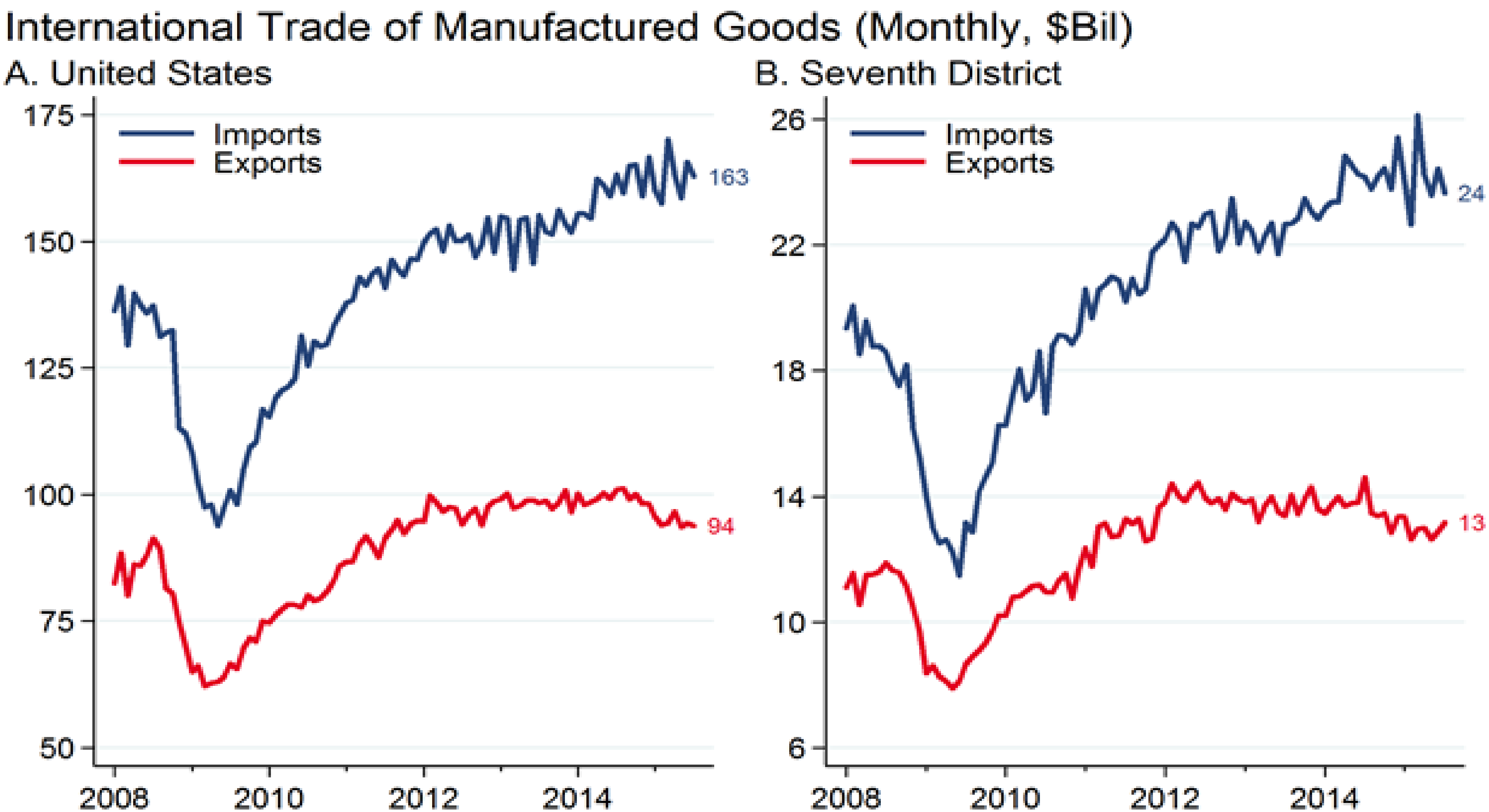


Productivity: What took 1,000 workers to produce in 1950 takes less than 200 workers today



Trade

Shifting production overseas—much of it labor intensive mfg. activity



Goods trade growing with globalization and Logistics IT: paradigm of “vertical specialization”

- Falling transport costs, open markets, lower communications costs allow disintegration of the “assembly line”
- Corollary: upheaval even within nations as assembly line stretches around the world

World merchandise trade and production by major product group, 1950-05
(Average annual percentage change in volume terms)

Source: World Trade Organization

Structural changes within the industry have also taken place of note

"Manufacturers" buy more of their services (i.e. outsource, "sell the mailroom!")

&

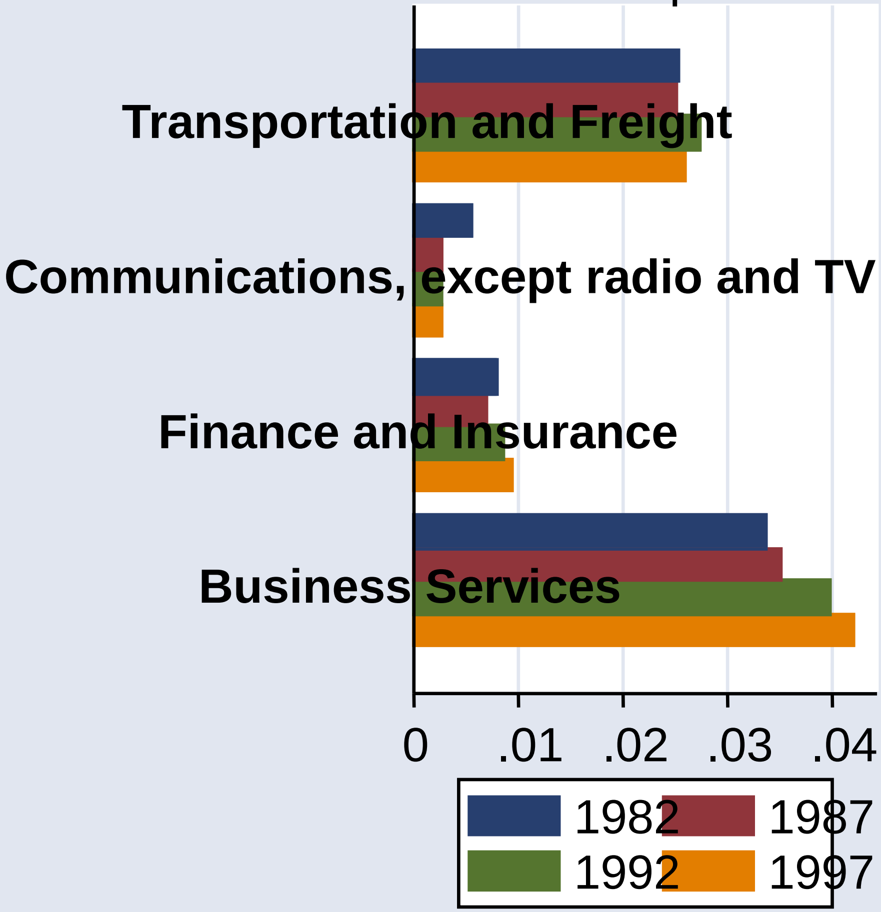
Their own activities are more service-like as well

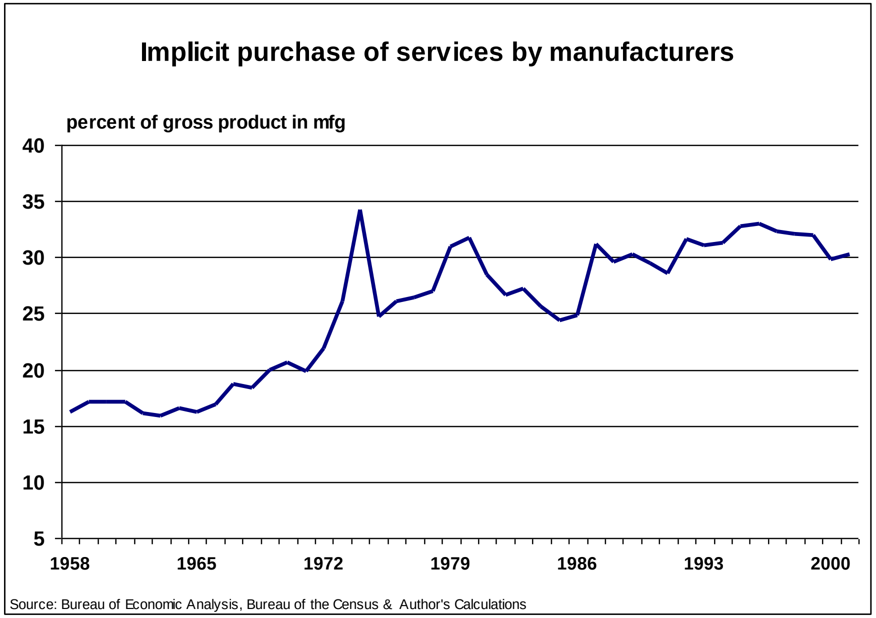
-- Implications for labor:

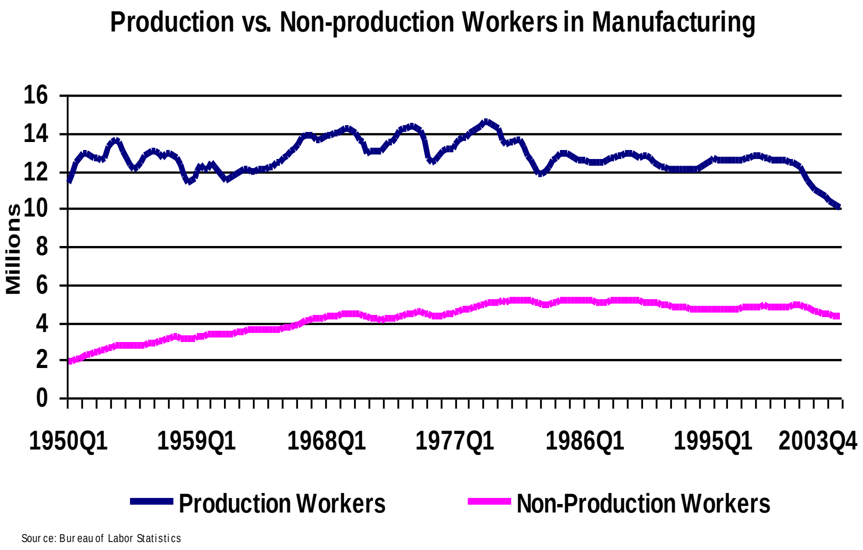
1. need for production workers shrinks more than related service workers;
2. Also, some former mfg. can be found/defined as now in the "service sector"

Selected Services

Direct requirement coefficient







Consumption spending shifts to services by U.S. households

As household incomes increased, demand for some goods such as clothing does not keep pace

Spending as a Percentage of American\'s Total Household Budget

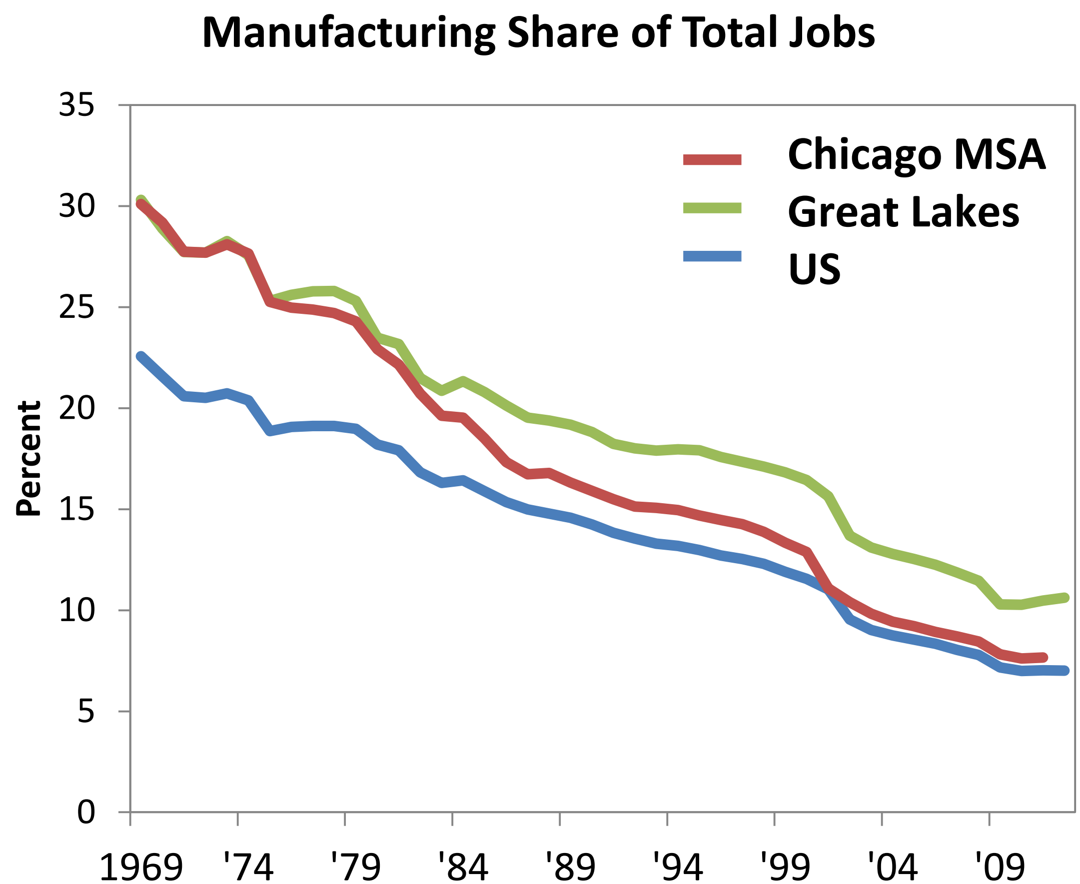
	2007	1997	1984	1977	1967	1950s
Food	15%	17%	18%	25%	30%	32%
Housing	43%	41%	42%	33%	33%	22%
Clothing	4%	5%	7%	10%	11%	12%
Transportation	18%	17%	18%	13%	15%	15%
Medical Care	6%	7%	5%	8%	6%	5%
Recreation	6%	4%	4%	5%	3%	2%
Education & Communication	6%	4%	3%	2%	n/a	n/a

Sources: U.S. Census Department\'s Historical Census of Housing Tables, Bureau of Labor

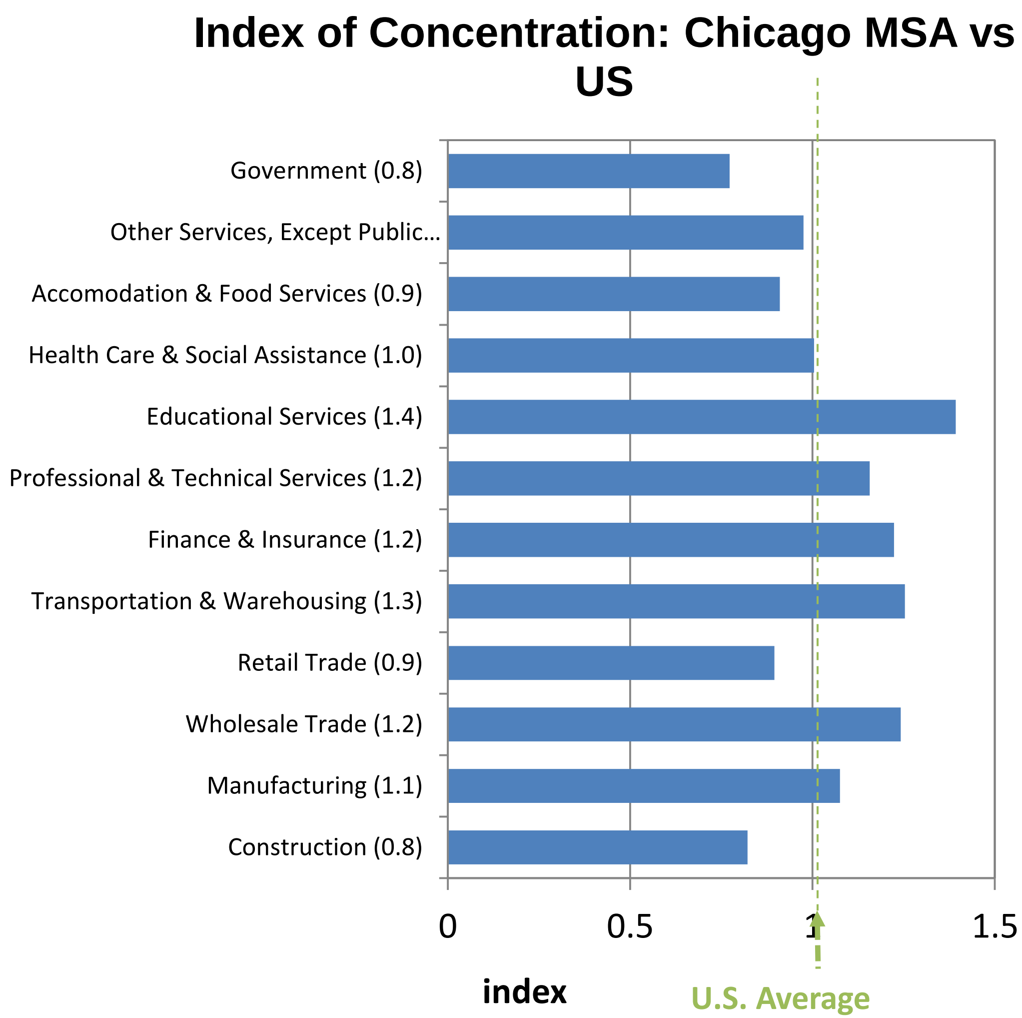
Geographic trends: do they favor mfg. in the Chicago area?

The Region's Structure Has Changed Rapidly

- Chicago MSA among Great Lakes region is almost unique in shedding its manufacturing specialization over the past 3-4 decades



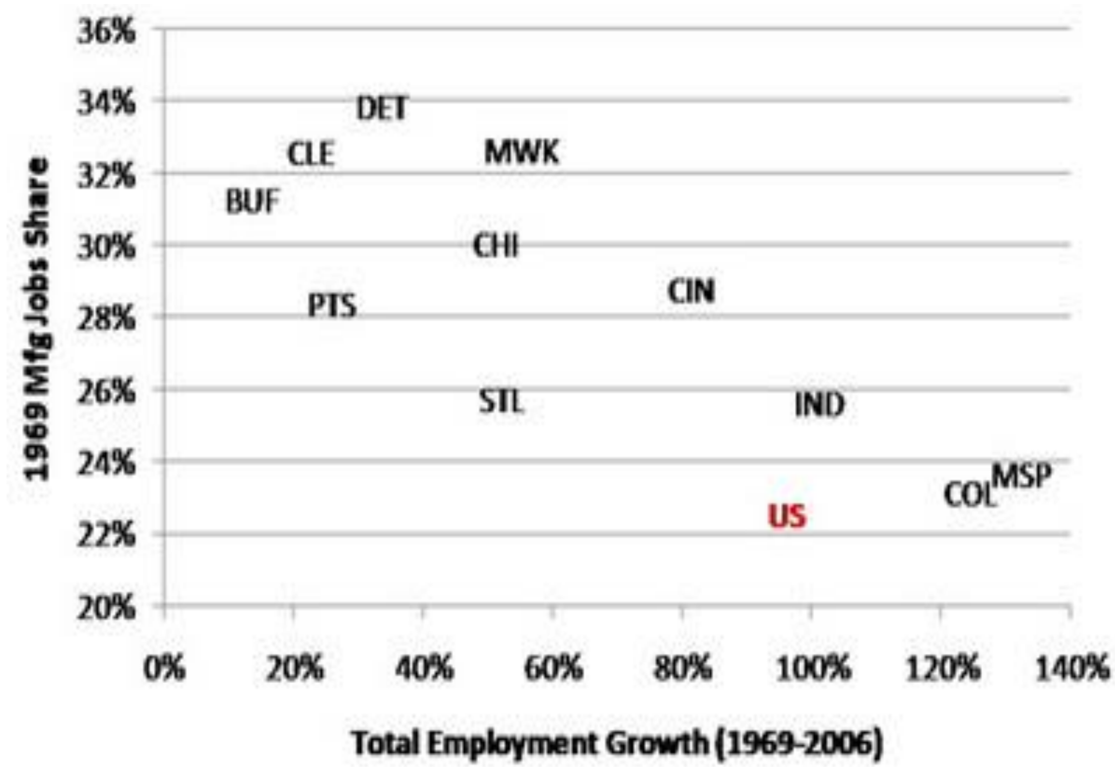
The Region's Structure is Highly Specialized



Though it has been said that the metro area economy is "diversified," it is specialized

- **Skills complexity ("global" services)**
  - **Hog butcher no more!**
- A Midwest business capitol, and MW "gateway to the world"
  - Business services
  - Foreign consular offices etc.
- **A national center to bi- or tri-coastal commerce**
  - **Freight transportation**
  - **Regional offices**
  - **Meetings and conventions**
- CMA has global specialties/hallmarks
  - Risk Exchange
  - Global Universities

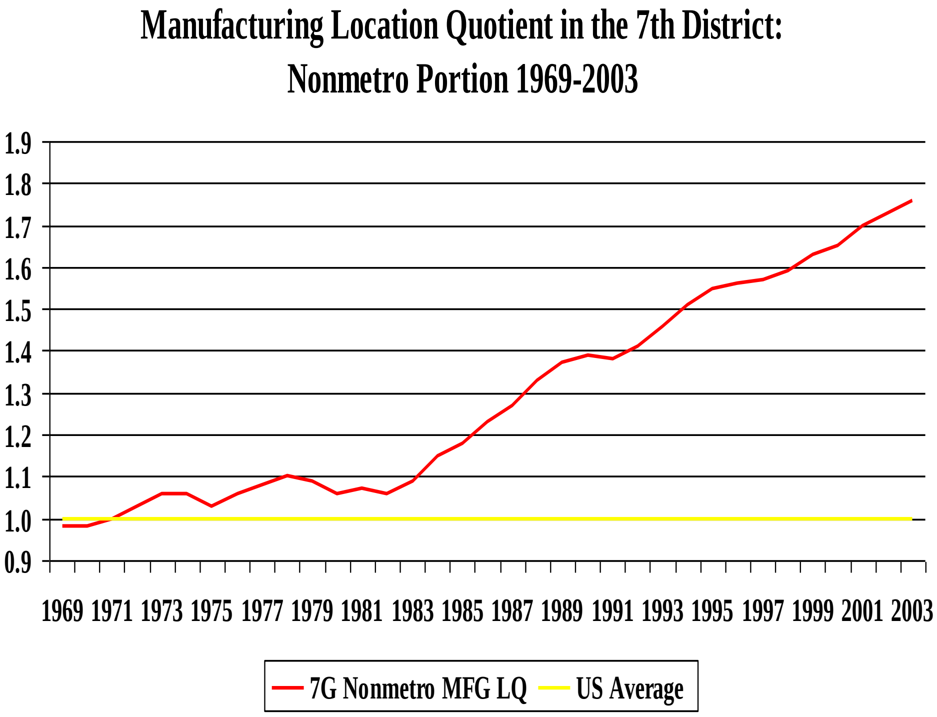
But manufacturing jobs have been a dismal destiny for Midwest cities

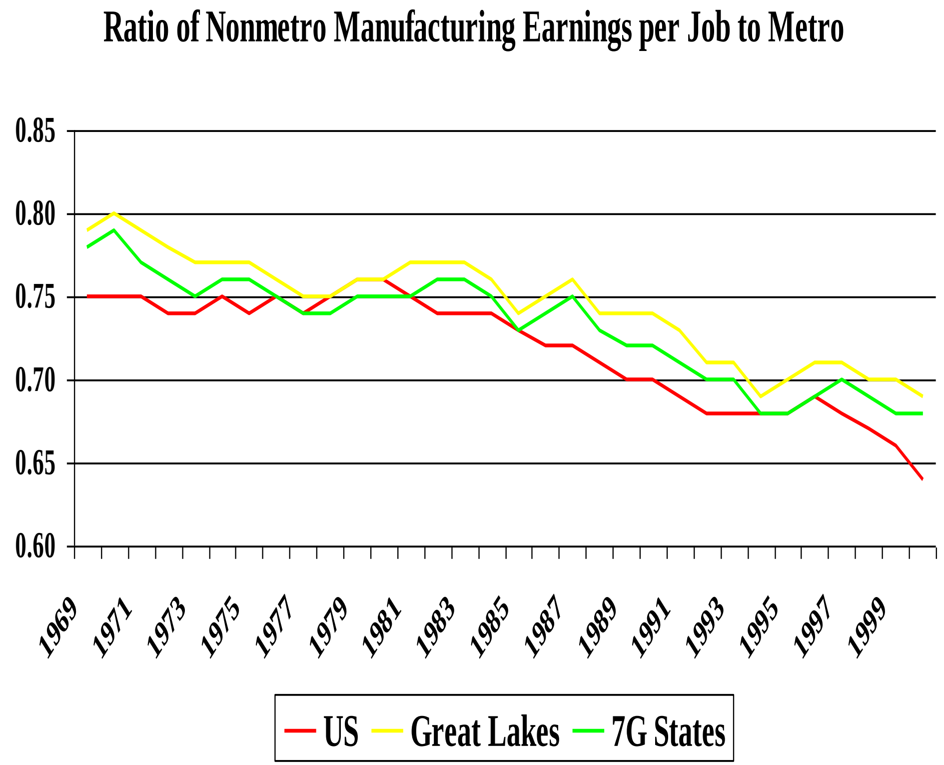


"MSA declines correlated with historic dependence on manufacturing"

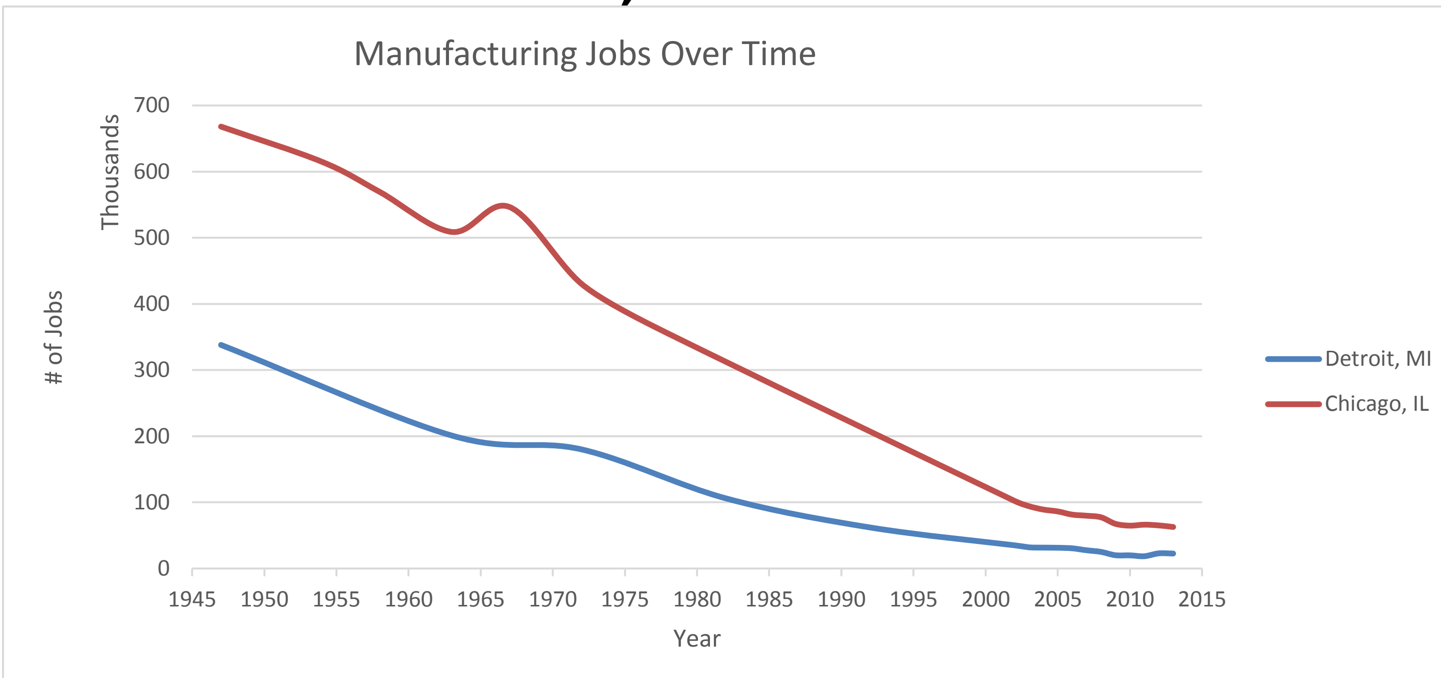
Source: FRB staff estimates/Haver Analytics.

U.S. Manufacturing geography: They love farm country (if near roadways/rail)





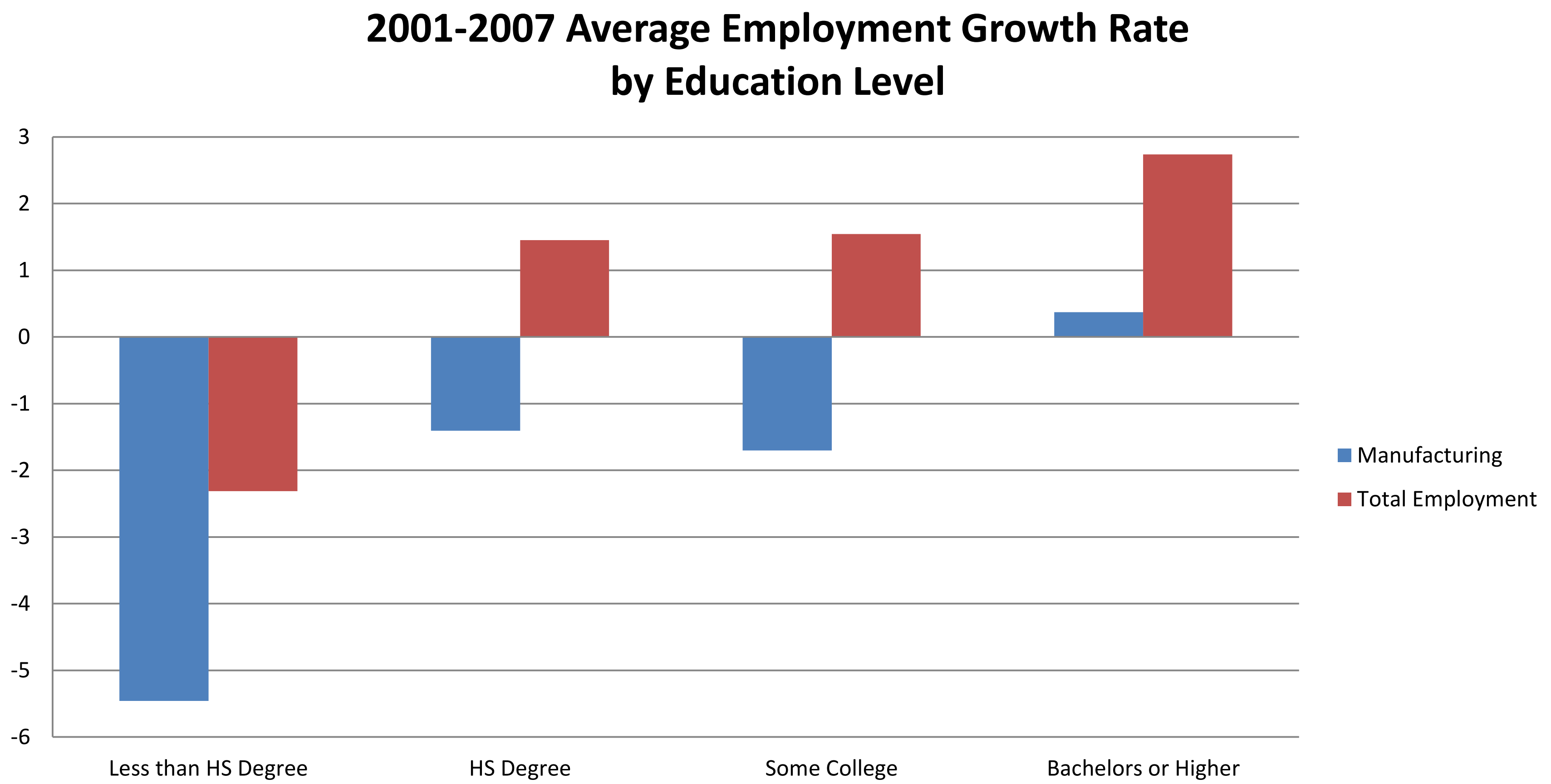
….and production has abandoned central cities for suburbs, small towns, and rural areas….



Central City Manufacturing Jobs
(in thousands)

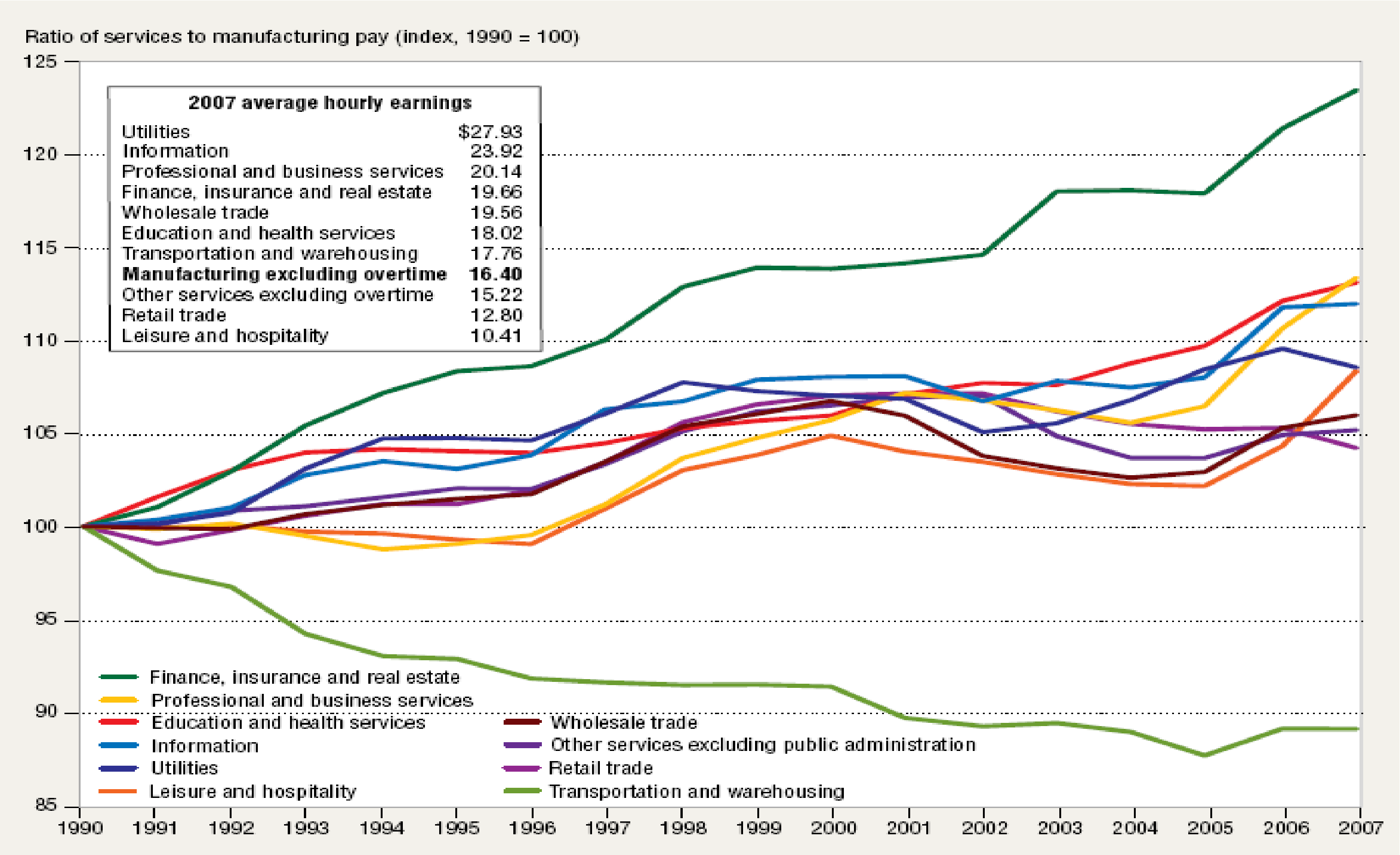
City	1977	2002	Change	% Change
New York City	609.7	143.2	-466.5	-76.5
Chicago	366.0	97.6	-268.4	-73.3
Los Angeles	315.6	162.2	-153.4	-48.6
Philadelphia	157.5	42.9	-114.6	-72.8
Houston	147.4	88.2	-59.2	-40.2
Detroit	153.3	38.0	-115.3	-75.2
Dallas	112.7	66.9	-45.8	-40.6
San Diego	53.3	56.8	3.5	6.6
Phoenix	58.2	55.7	-2.5	-4.3
Baltimore	72.9	21.0	-51.9	-71.2
Total of the 10 cities	2,046.6	772.5	-1,274.1	-62.3
U.S.	19,590.1	13,866.0	-5,724.1	-29.2

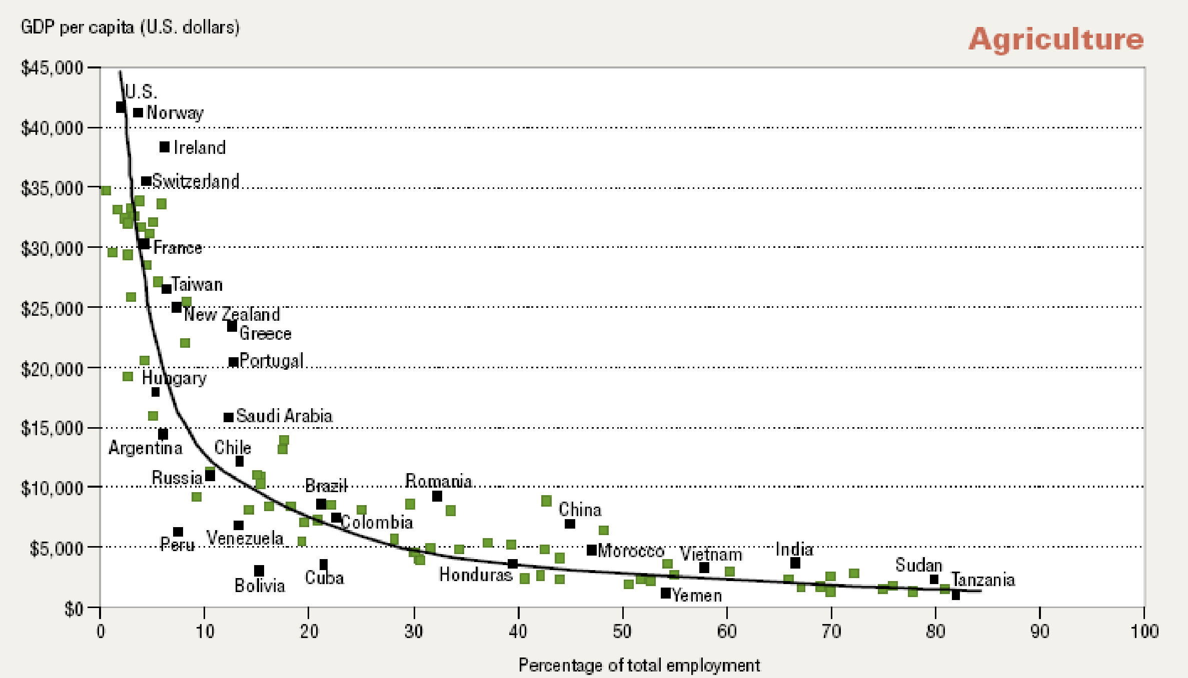
U.S. manufacturers are "upskilling" their workforces (but may not be able to pay adequately)



Source: ACS 2000-2007

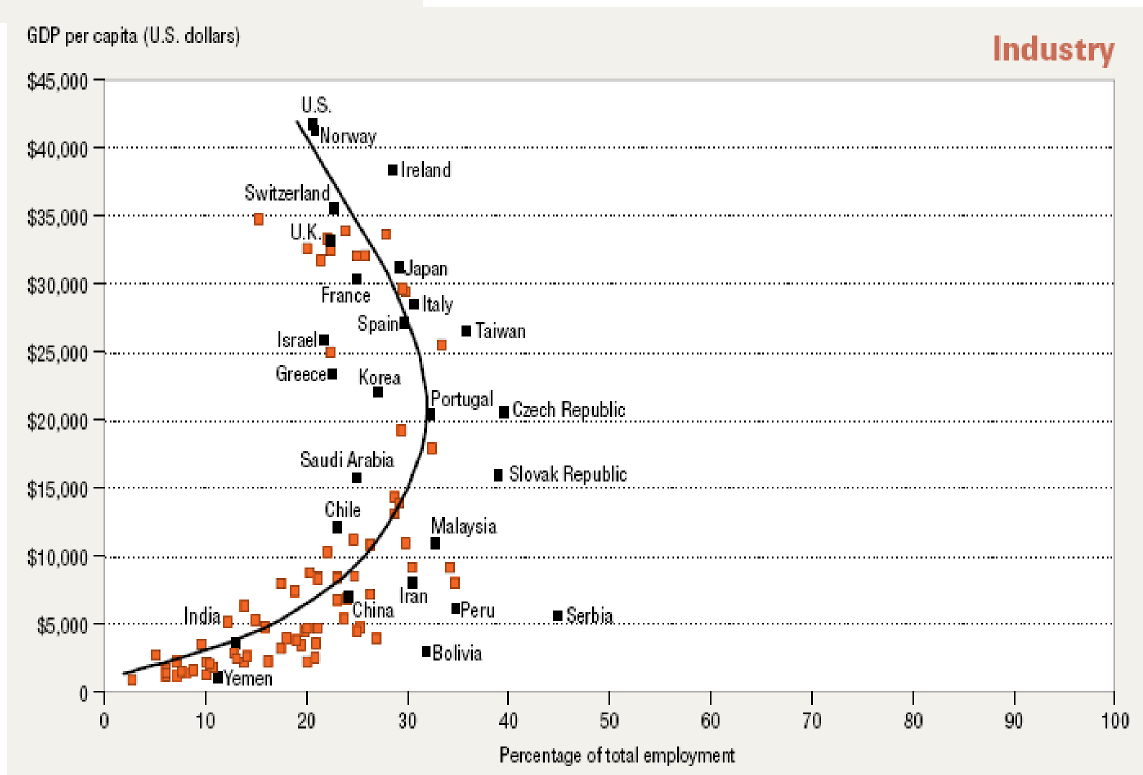
The future manufacturing workforce....a tough sell on average (wages)



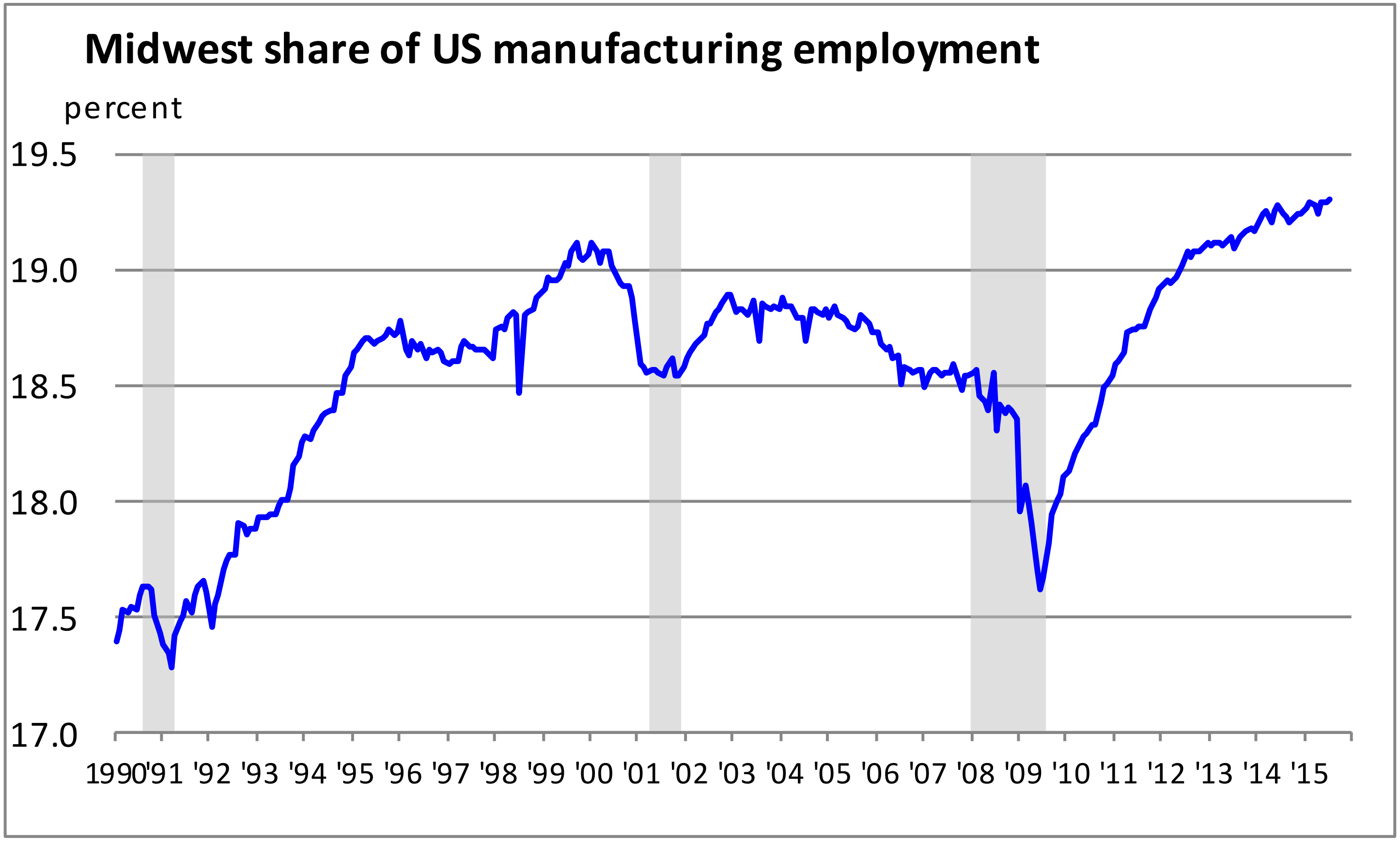


Production agriculture falls away as national income climbs….

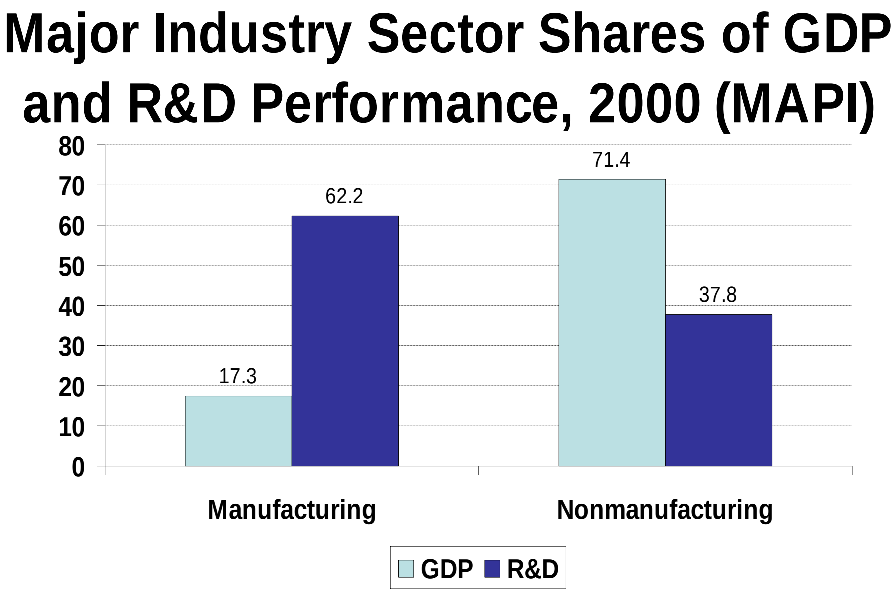
Still: Manufacturing remains an important part of highly developed economies…



And the Midwest continues to increase its share of national manufacturing employment



Manufacturing remains very innovative….which should be an avenue for urban location

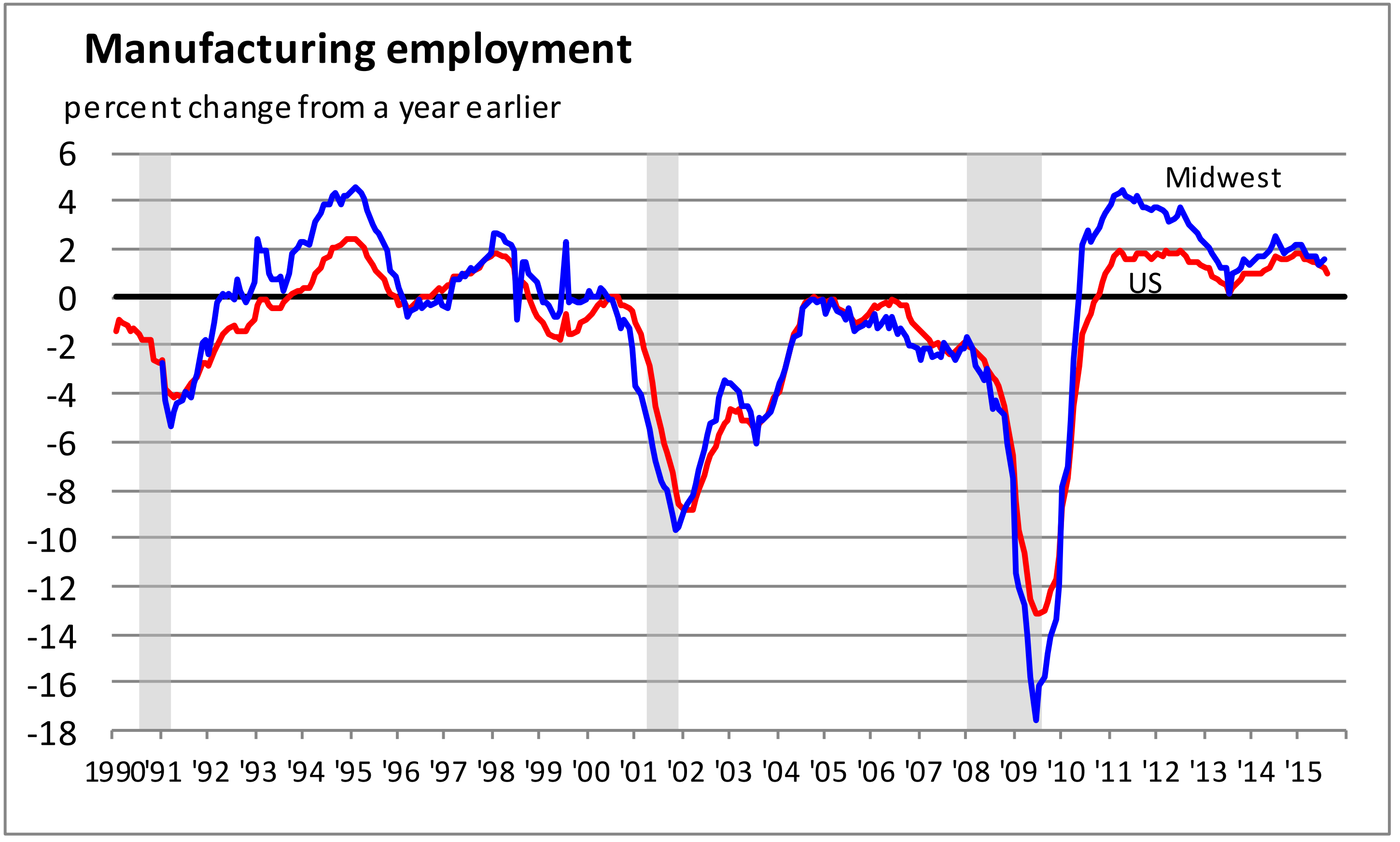


"Especially important is the fact that the service sector acquires most of its technology from manufacturing firms. . . This fact emphasizes the substantial dependency of services on manufacturing firms for technology and thus the critical role of the myriad communications and market transactions between the two sectors."

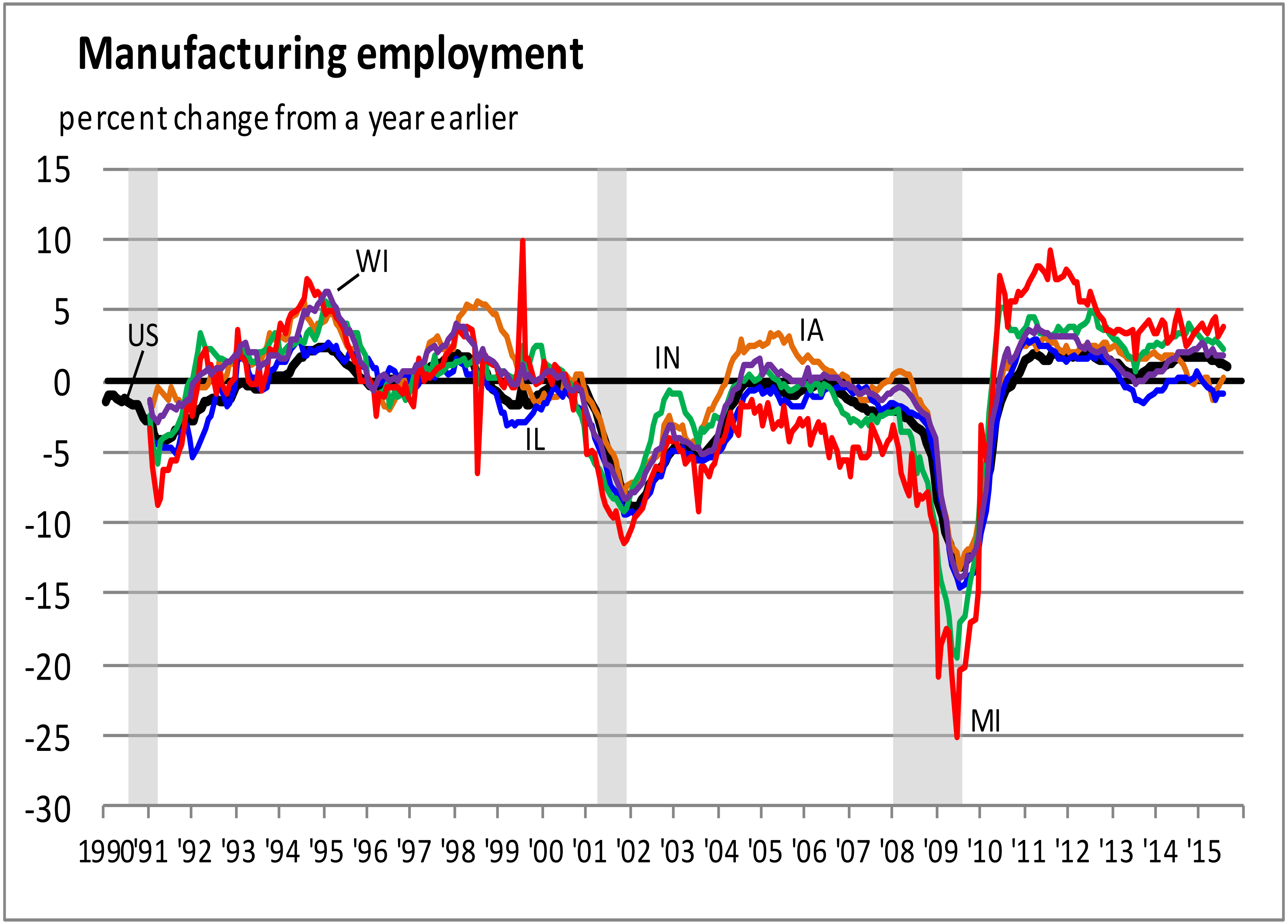
Source: G. Jassey, R&D and Long-Term Competitiveness: Manufacturing's Central Role in a Knowledge-Based Economy (National Institute of Standards and Technology)

Current environment

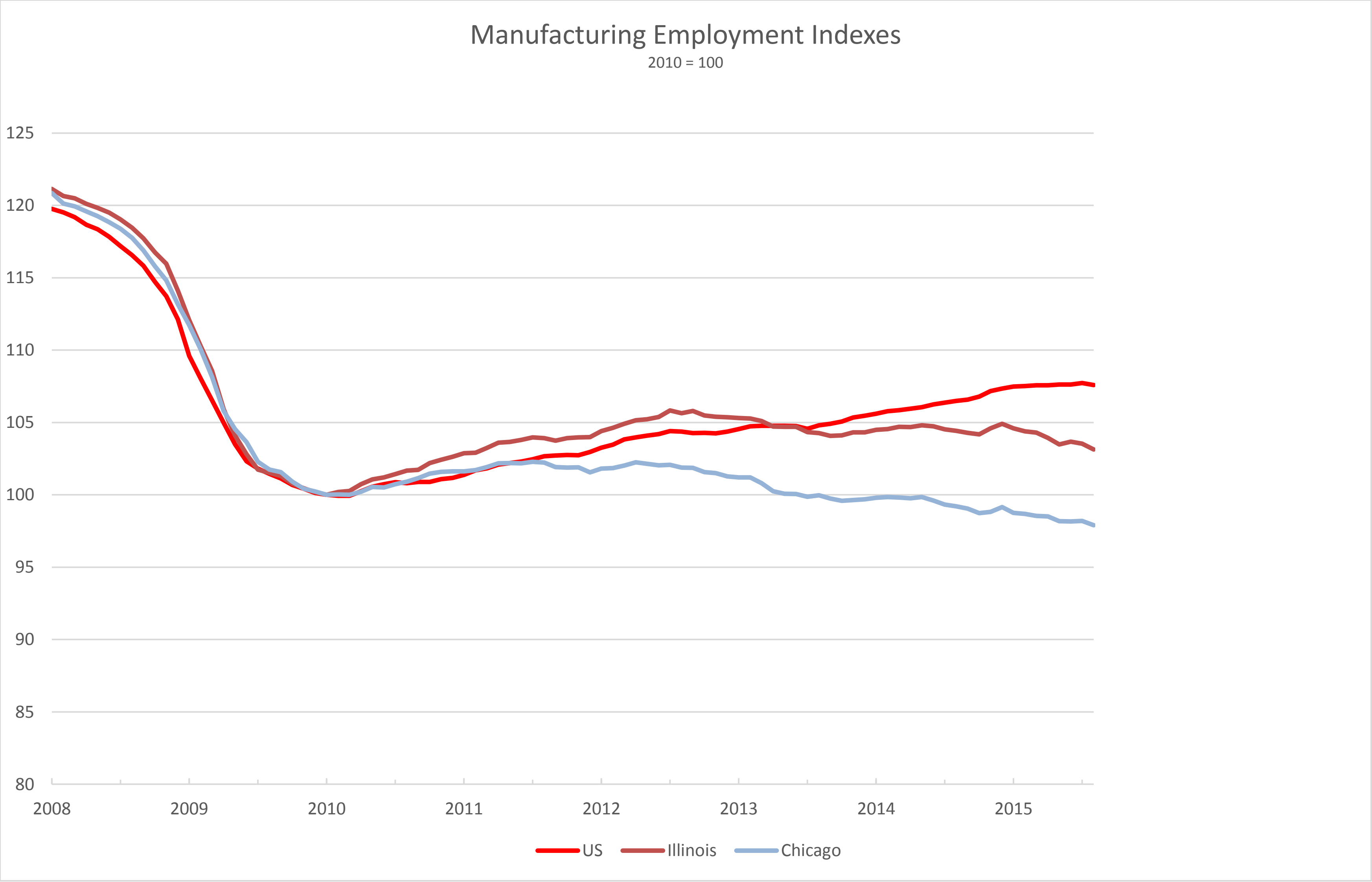
Midwest mfg. employment outstrips U.S.



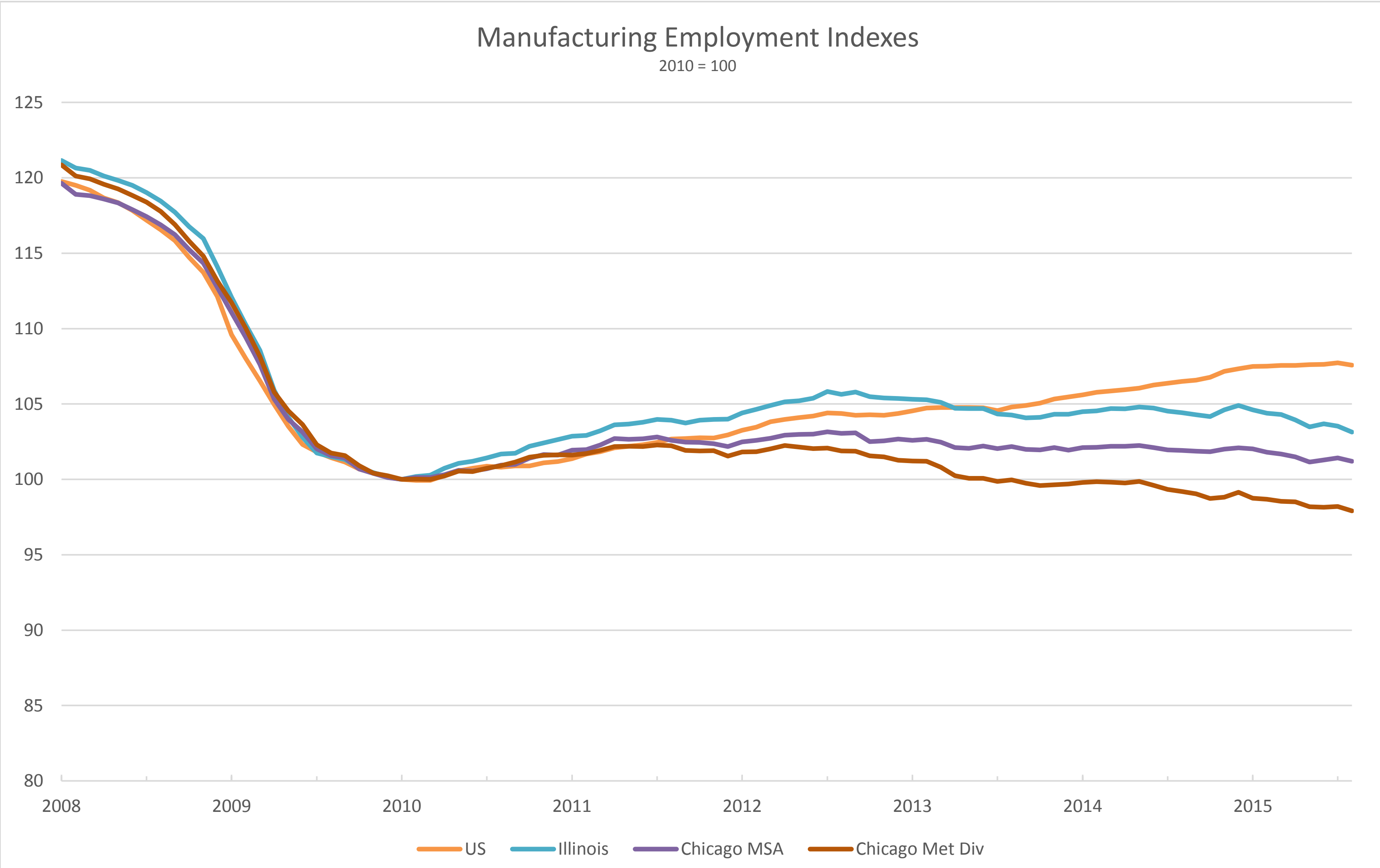
Illinois is losing manufacturing jobs



Metro Division Chicago

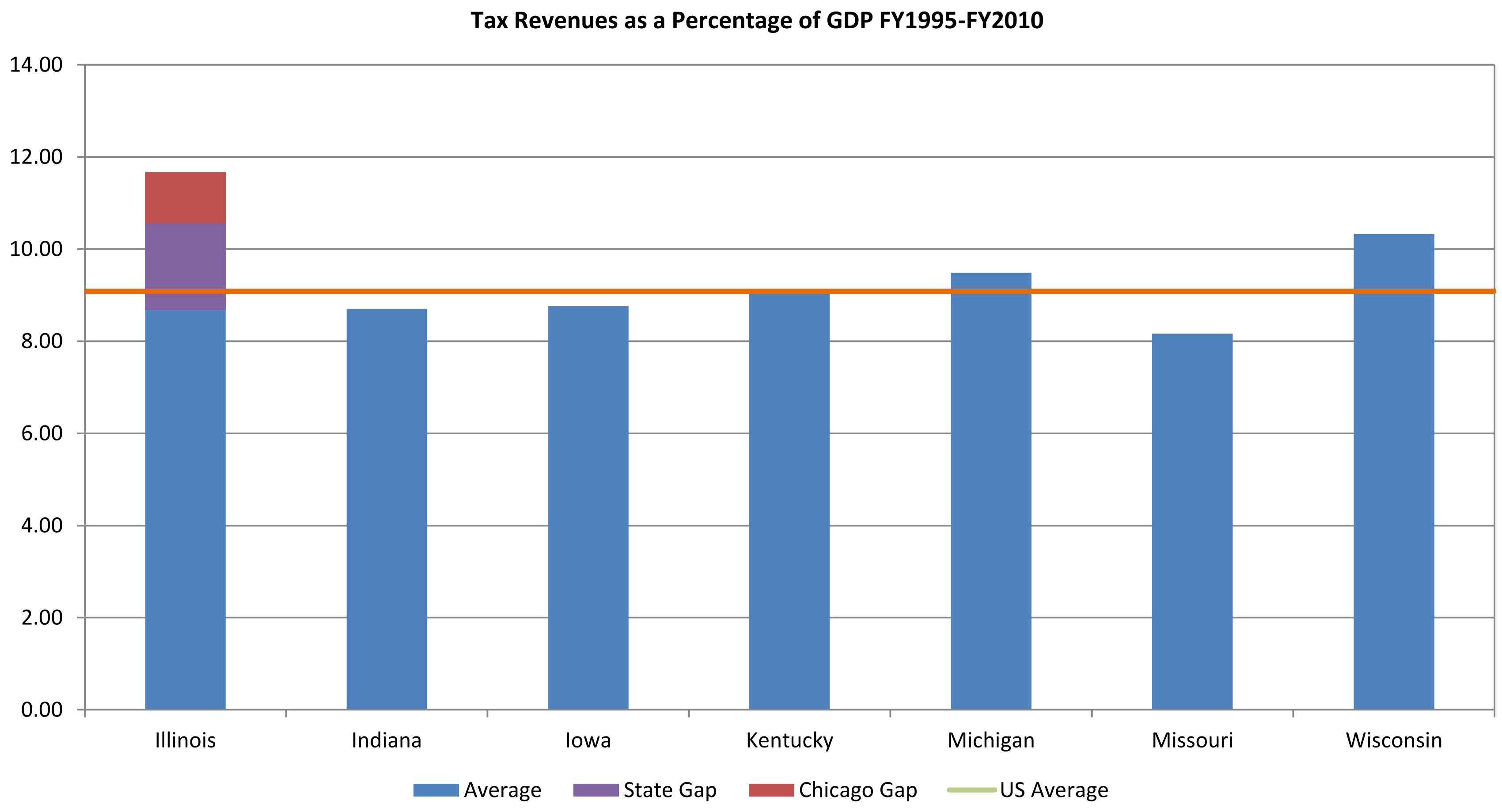


Chicago CMSA & Metro Divsion



Why does Chicago underperform?

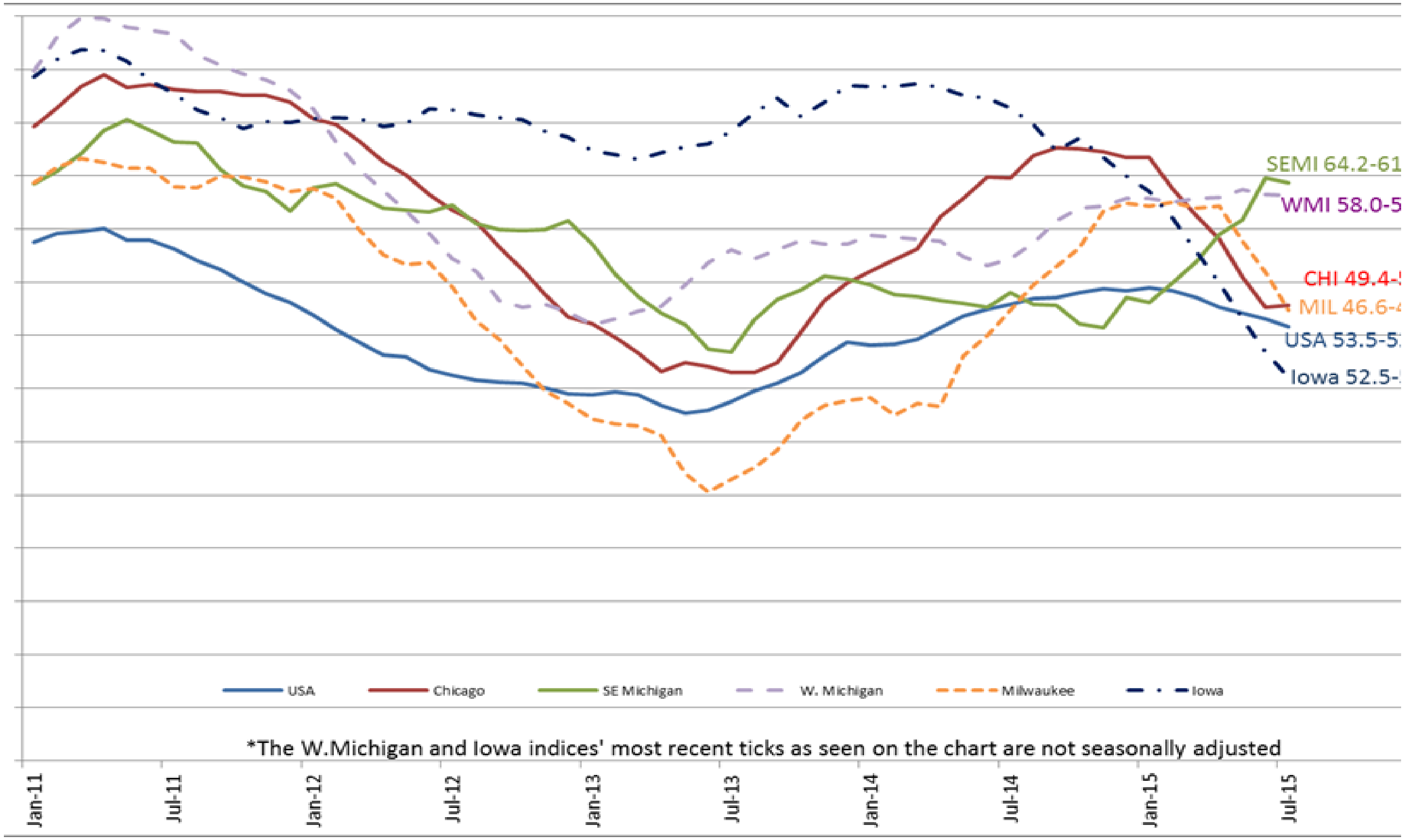
Is it bad tax climate? Estimated rise in tax rates to fund Chicago and State pensions gaps



Is it industry mix? Manufacturing Structure

Chicago-Joliet-Naperville, IL Metropolitan Division: Cook County DeKalb County DuPage County Grundy County Kane County Kendall County McHenry County Will County

The east-west schism in mfg. performance: "auto country wins"



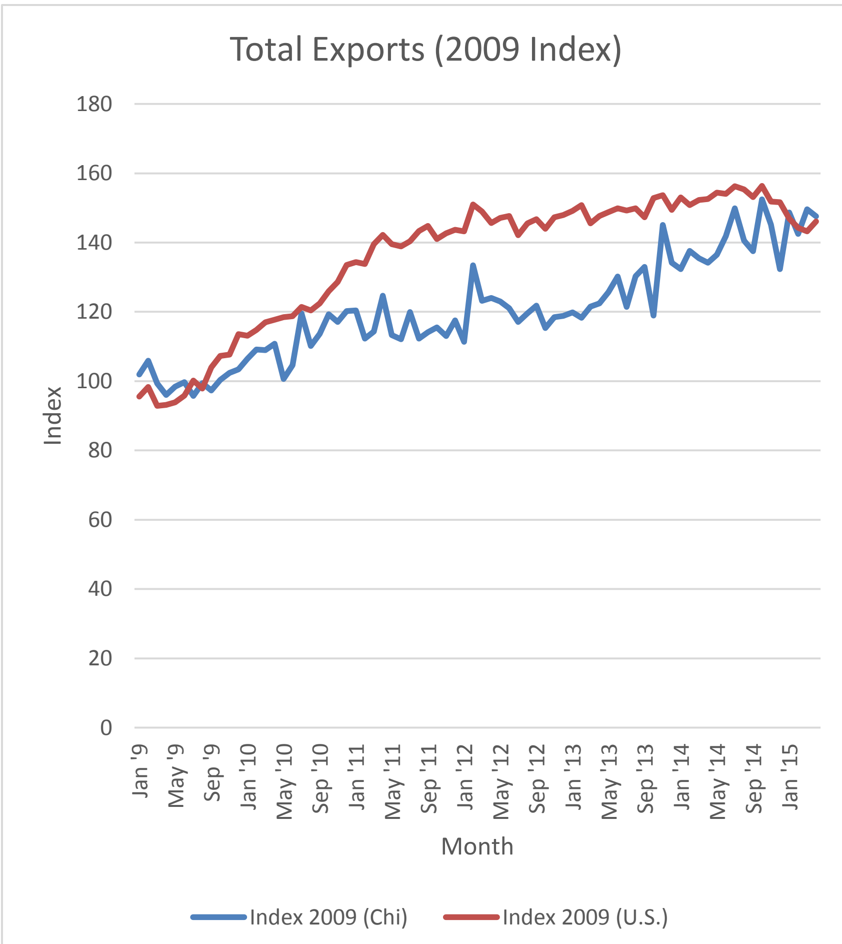
Trade and Exports

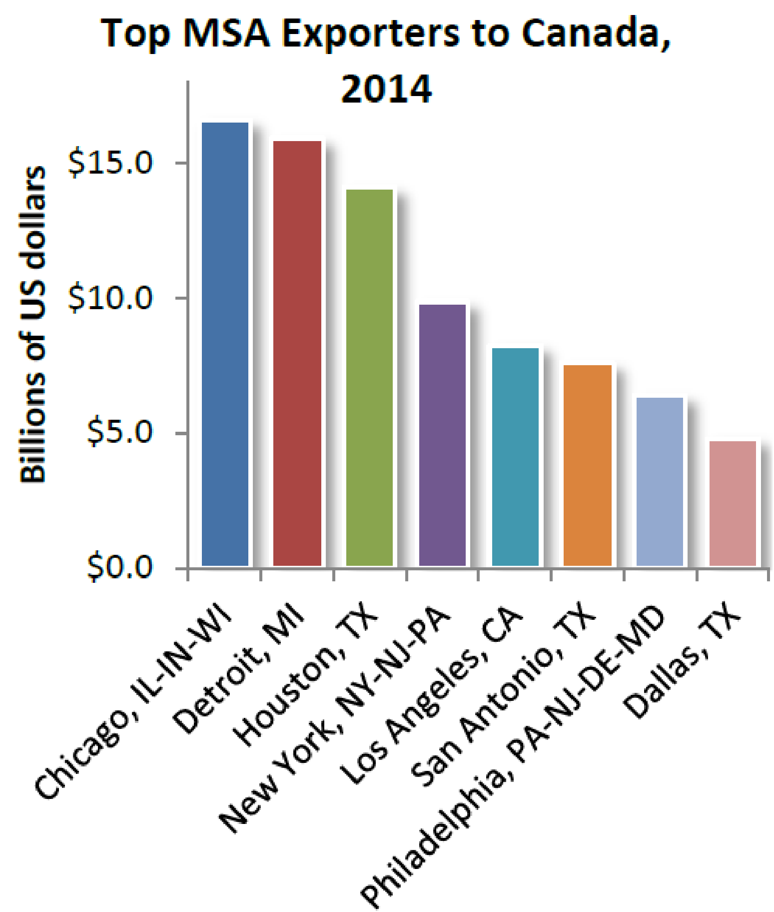
Chicago MSA is a top exporter, and recent performance has not been unduly poor

Top MSA Exporters by 2014 Merchandise Export Value (in billions of US dollars)

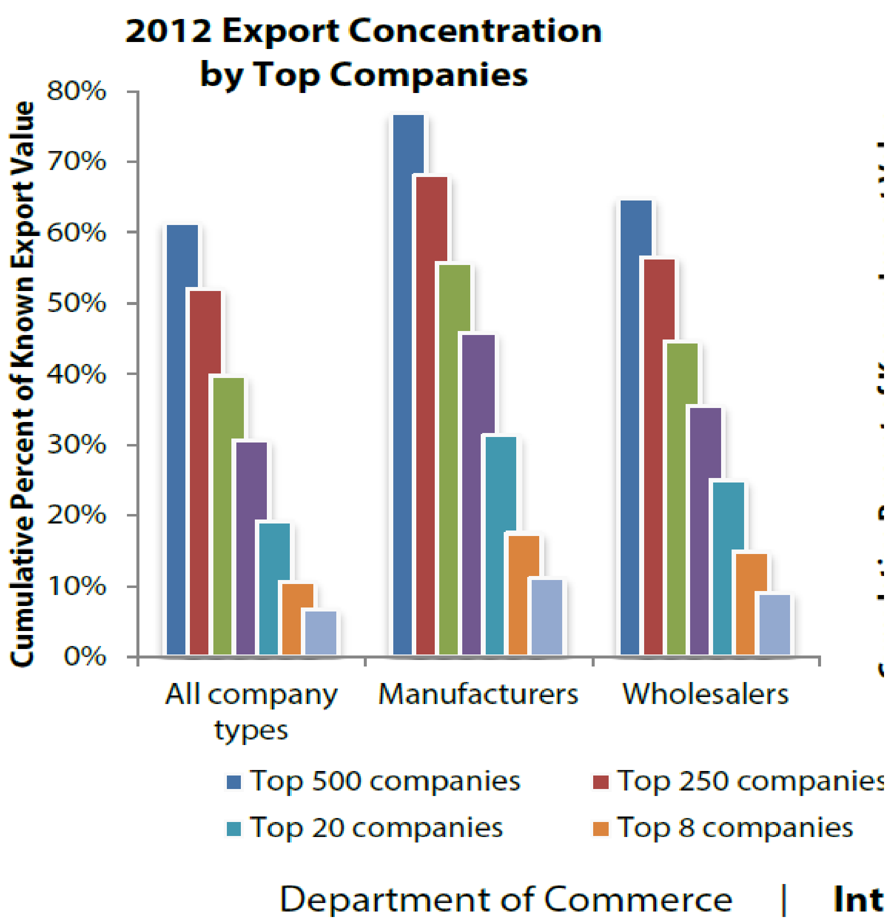
	Metropolitan Area	2013	2014	13-'14 $ Chg	13-'14 % Chg
1	Houston-The Woodlands-Sugar Land, TX	$115.0	$119.0	$4.0	3.5%
2	New York-Newark-Jersey City, NY-NJ-PA	$106.9	$105.3	-$1.7	-1.5%
3	Los Angeles-Long Beach-Anaheim, CA	$76.3	$75.5	-$0.8	-1.1%
4	Seattle-Tacoma-Bellevue, WA	$56.7	$61.9	$5.3	9.3%
5	Detroit-Warren-Dearborn, MI	$53.9	$50.3	-$3.6	-6.7%
6	Chicago-Naperville-Elgin, IL-IN-WI	$44.9	$47.3	$2.4	5.4%
7	Miami-Fort Lauderdale-West Palm Beach, FL	$41.8	$38.0	-$3.8	-9.1%
8	New Orleans-Metairie, LA	$30.0	$34.9	$4.9	16.2%
9	Dallas-Fort Worth-Arlington, TX	$27.6	$28.7	$1.1	3.9%
10	San Francisco-Oakland-Hayward, CA	$25.3	$26.9	$1.6	6.2%
11	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	$24.9	$26.3	$1.4	5.6%
12	San Antonio-New Braunfels, TX	$19.3	$25.8	$6.5	33.7%
13	Boston-Cambridge-Newton, MA-NH	$22.2	$23.4	$1.2	5.2%

Flat exports (and rising imports) have dampened manufacturing, Canada's recession is a negative for Chicago





Large companies dominate exports: Policy efforts to encourage small-firm exports may be helpful; how about educating supply-chain producers about importance of exports?



Discussion