# Perspectives on the Auto Industry

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Thomas Klier
Senior Economist
Federal Reserve Bank of Chicago
tklier@frbchi.org
www.chicagofed.org

# Challenging times - Recap

- **“We have plenty of customers – what we don’t have is financing available to meet their needs”** ***Mike Jackson, The Economist, Oct. 04***
- **“One of Big 3 may not survive”**
  ***Daniel Howes, Detroit News, Oct. 14***
- **“GM loses $2.5 billion in 3rd quarter; cash reserves getting critically low”**
  ***Detroit News, Nov. 7***
- **“Bailout now or collapse”**
  ***Automotive News, Nov. 10***

# Challenging times - Recap

- After 2 rounds of hearings and no agree-ment in the Senate, Bush administration approves $17.4bn in federal aid for GM and Chrysler on December 17.

- Subsequently GMAC receives $6bn and Chrysler Financial $1.5bn in TARP funding

- “Car parts sector looks for $10bn federal bail-out”

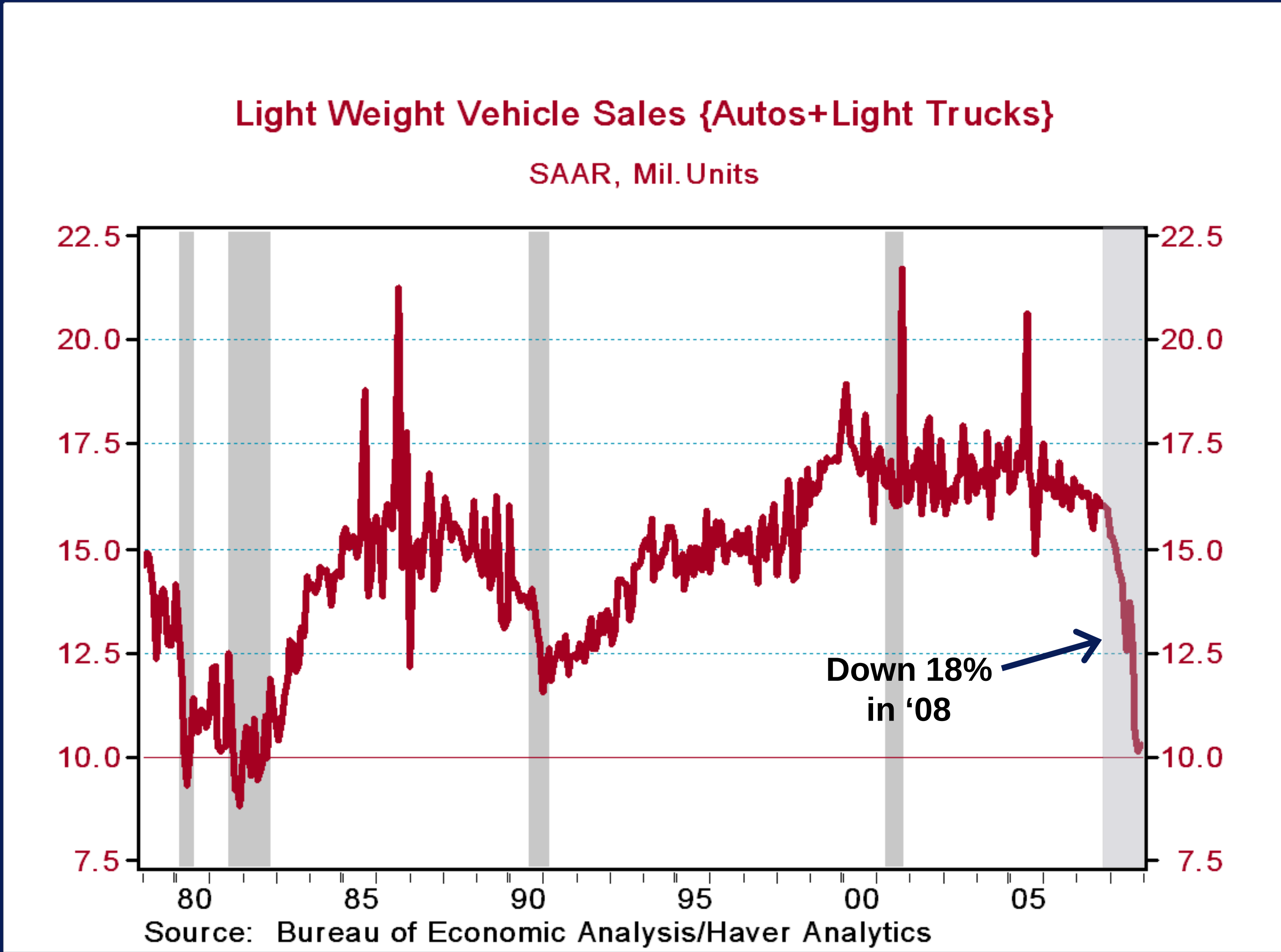
  *Financial Times, Jan. 26, 2009*

# Perspectives on the auto industry

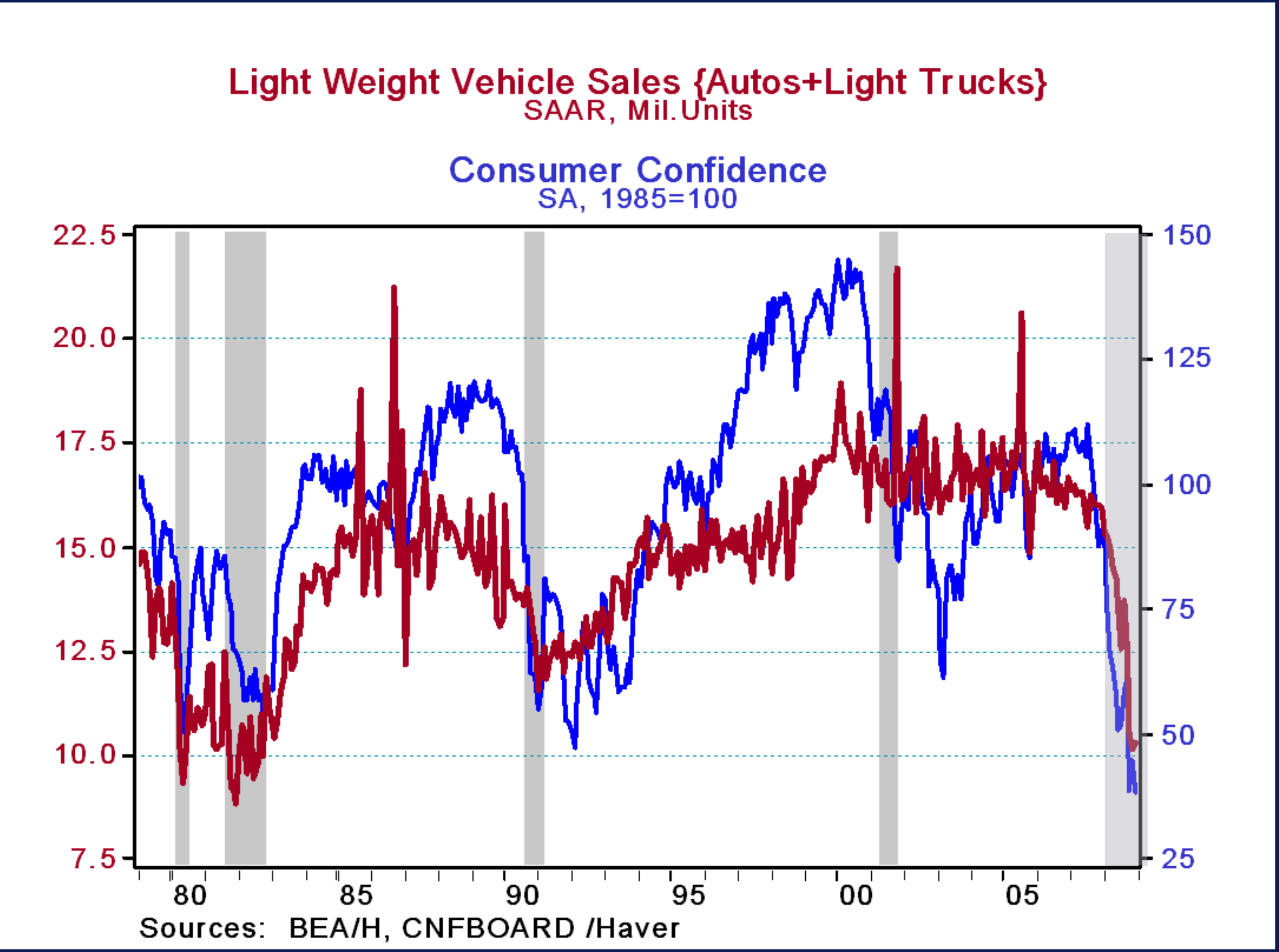
## Outline:

- The cycle is back
- Legacy of structural changes
- Looking ahead

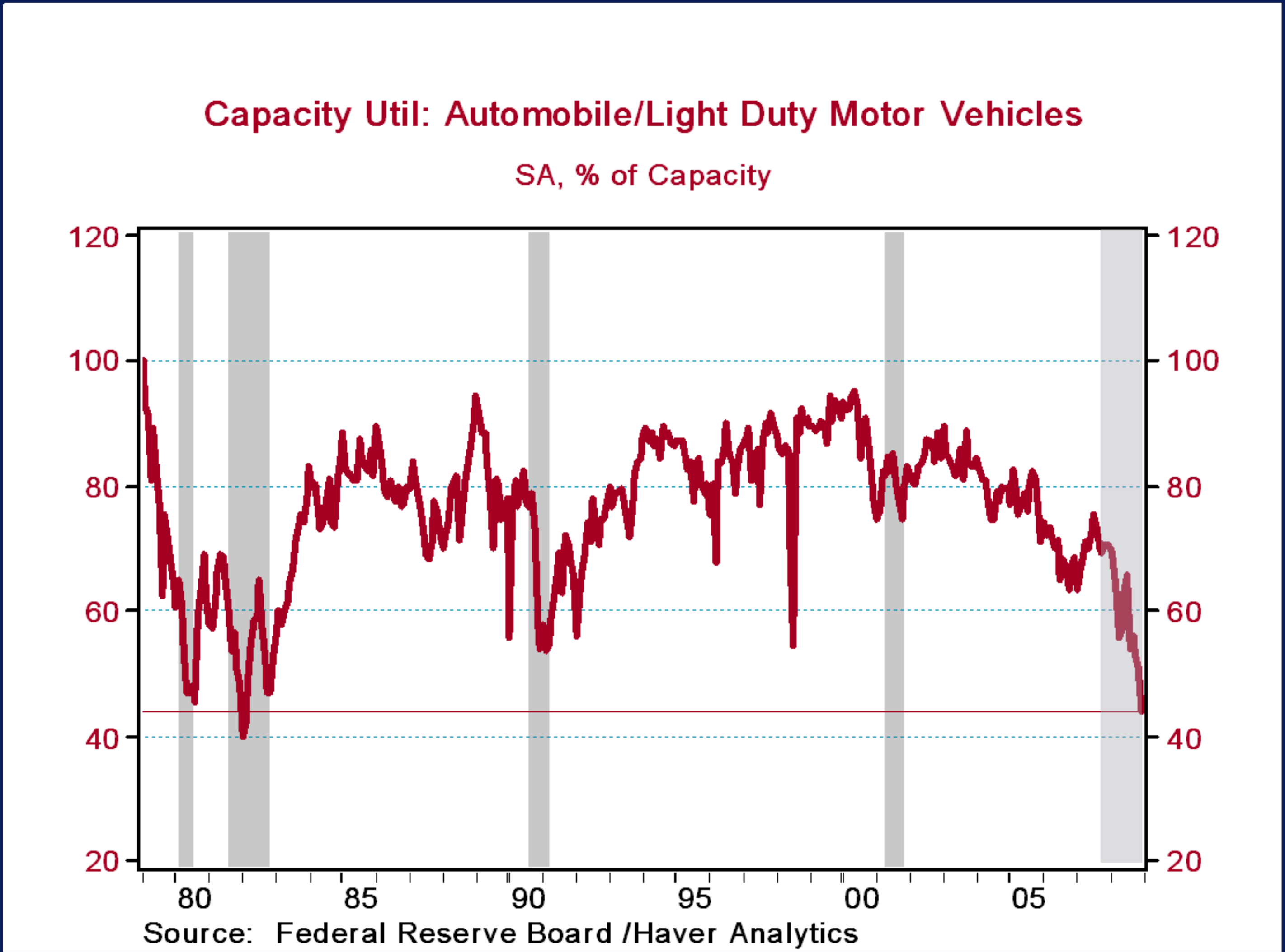
# The cycle is back!



# Consumer confidence and sales heading south



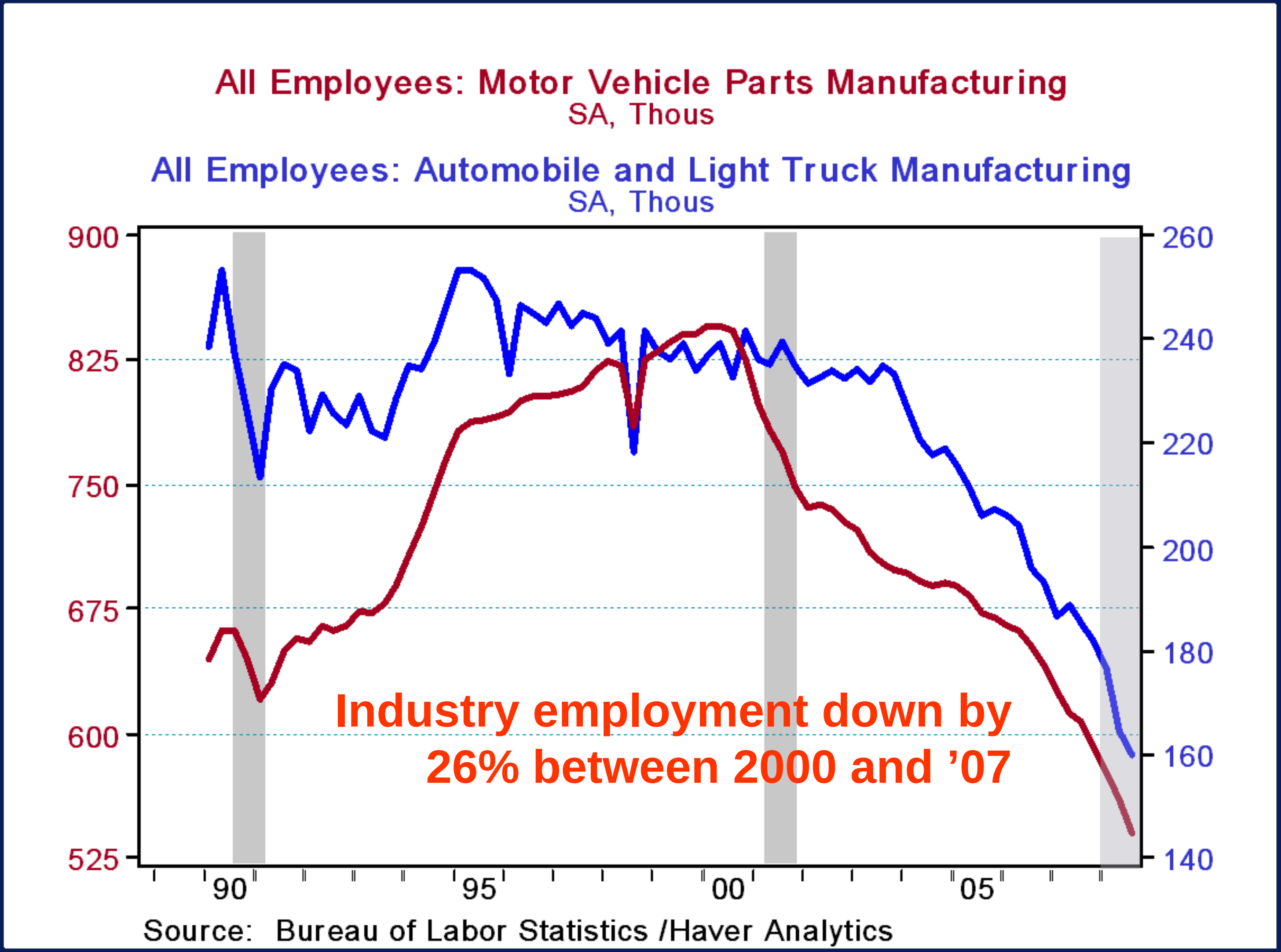
# Deep Production cutbacks idle plants



# Perspectives on the auto industry

- The cycle is back
- Legacy of structural changes
- Looking ahead

# Industry was changing well before downturn



# Drivers of structural change

- Internationalization of sales and production (of vehicles and parts)
- Greater role of supply base
- Changing industry geography

# Herbie led the way

- VW was dominant import brand in U.S. market during the 60s and early 70s.
- Asia has been primary source of imports since mid-70s.

**Import share of sales by decade**

| | |
|---|---|
| 1960s | 8 % |
| 1970s | 17 % |
| 1980s | 25 % |
| 1990s | 16 % |
| 2000s | 20 % |

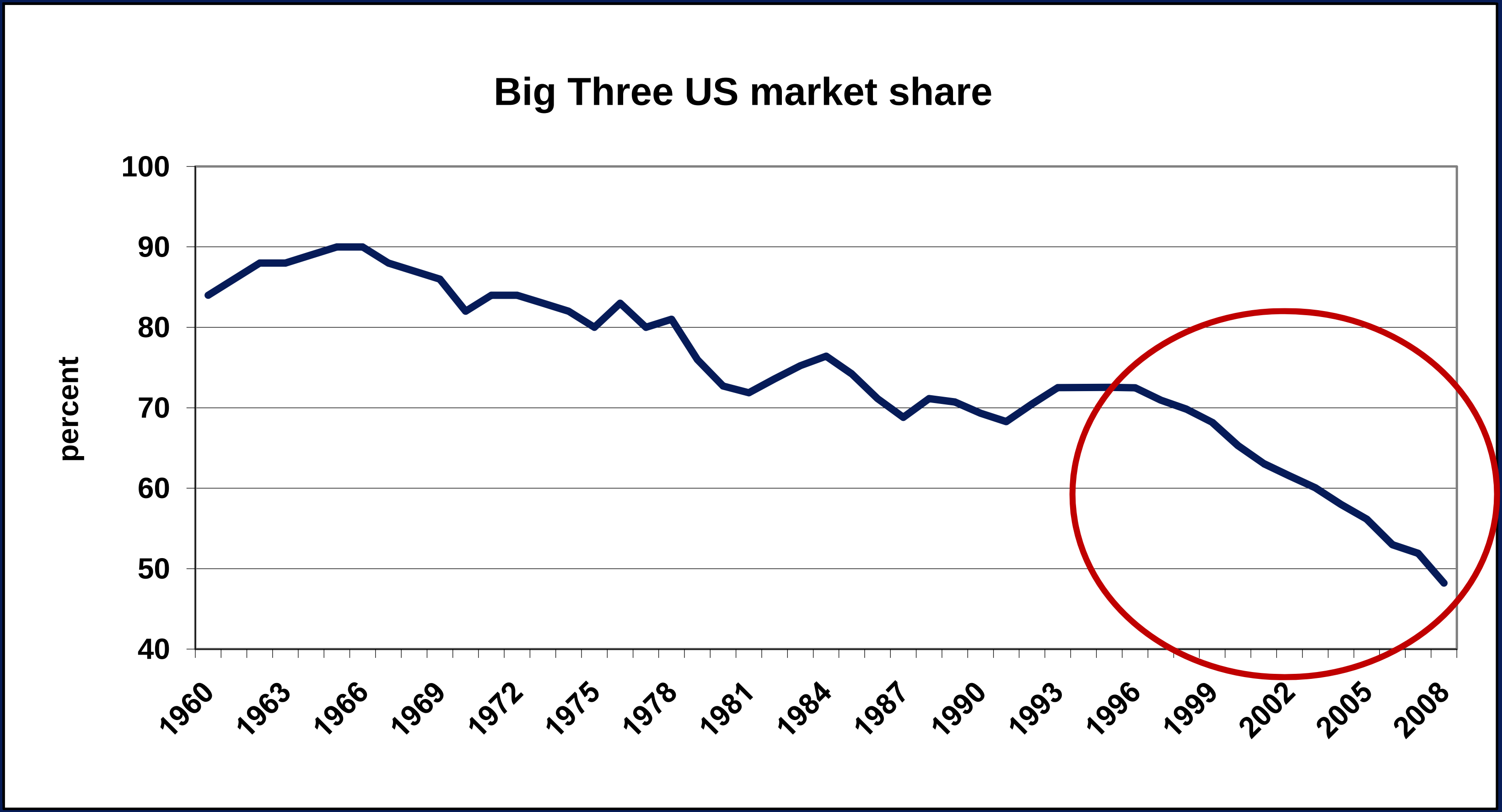
# From 4 to 13 carmakers in 30 years

**Foreign carmakers, by first year of producing in U.S.**

| | |
|---|---|
| VW (1) | 1978 |
| Honda | 1982 |
| Nissan | 1983 |
| Toyota | 1984 |
| Mitsubishi | 1987 |
| Subaru | 1989 |
| BMW | 1994 |
| Mercedes | 1997 |
| Hyundai | 2005 |
| Kia | 2009 |

(1) Closed in 1989, new plant to open in 2010

# Market share shift accelerates in mid-90s




Note: 1960-1979 share of car sales, 1980-2007 share of light vehicle sales

# Now there are (the Big) Six

**Six leading carmakers in U.S. light vehicle market, 2008**

| Company | Market share (%) |
|---|---|
| GM | 22.4 |
| Toyota | 16.9 |
| Ford | 14.8 |
| Chrysler | 11.0 |
| Honda | 10.8 |
| Nissan | 7.3 |

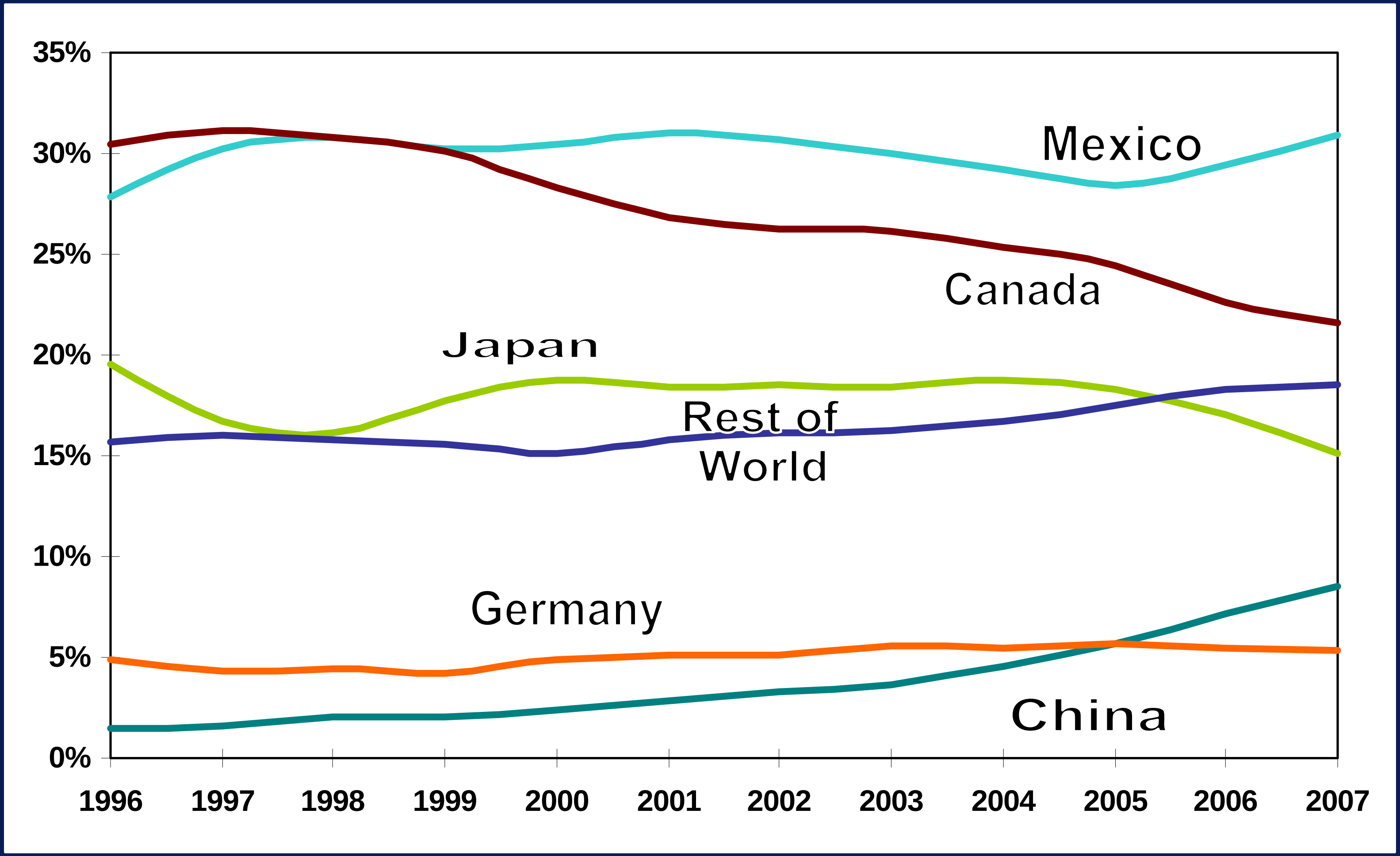
# N.A. supplier base more international

## Largest 150 motor vehicle parts suppliers to North America by nationality

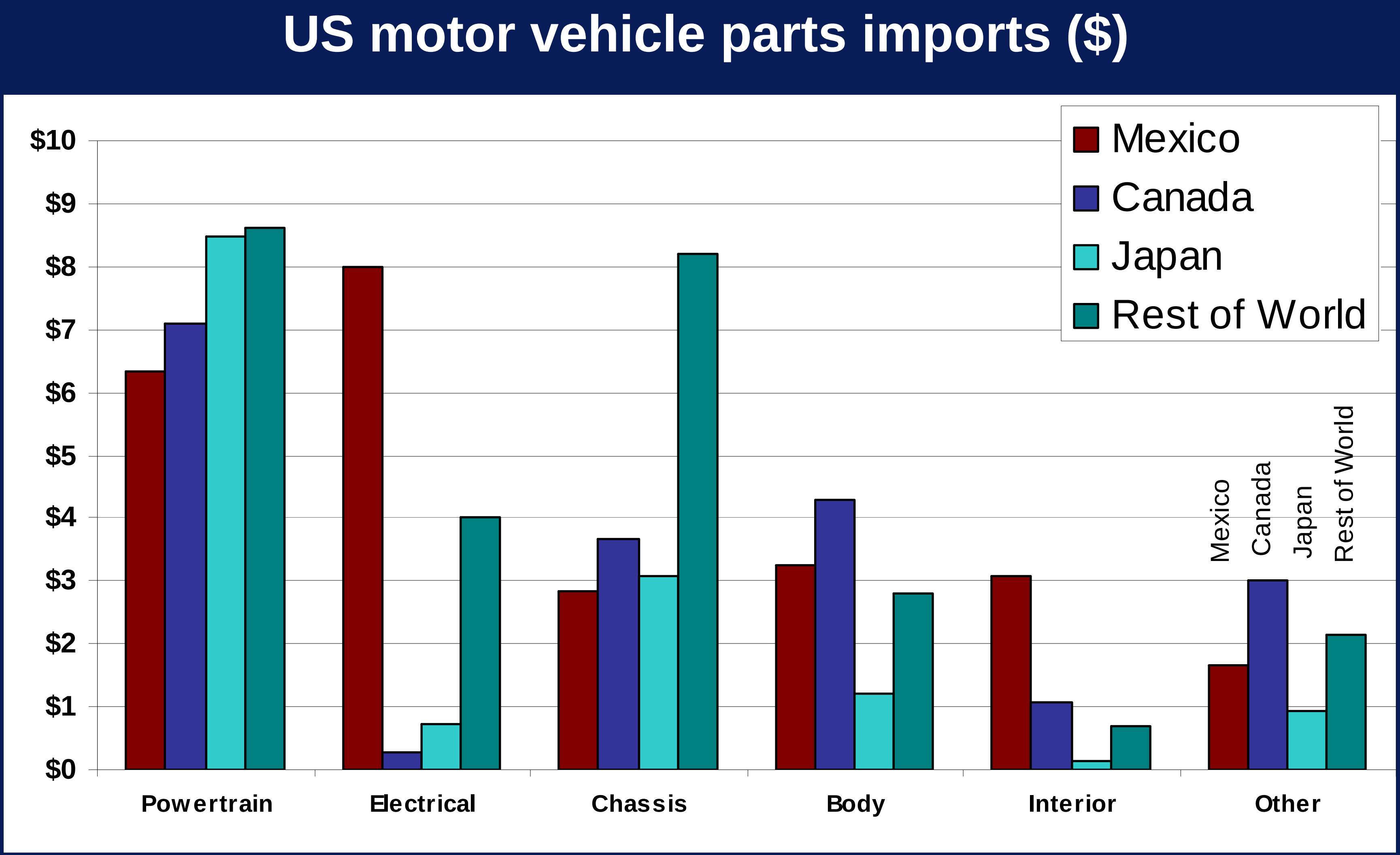
| | 1994 | 2007 |
|---|---|---|
| US | 108 | 59 |
| Europe | 20 | 39 |
| Asia | 14 | 41 |
| other | 8 | 11 |

# Today's Supply chains are truly global

## US motor vehicle parts imports (%)



# Different parts from different sources

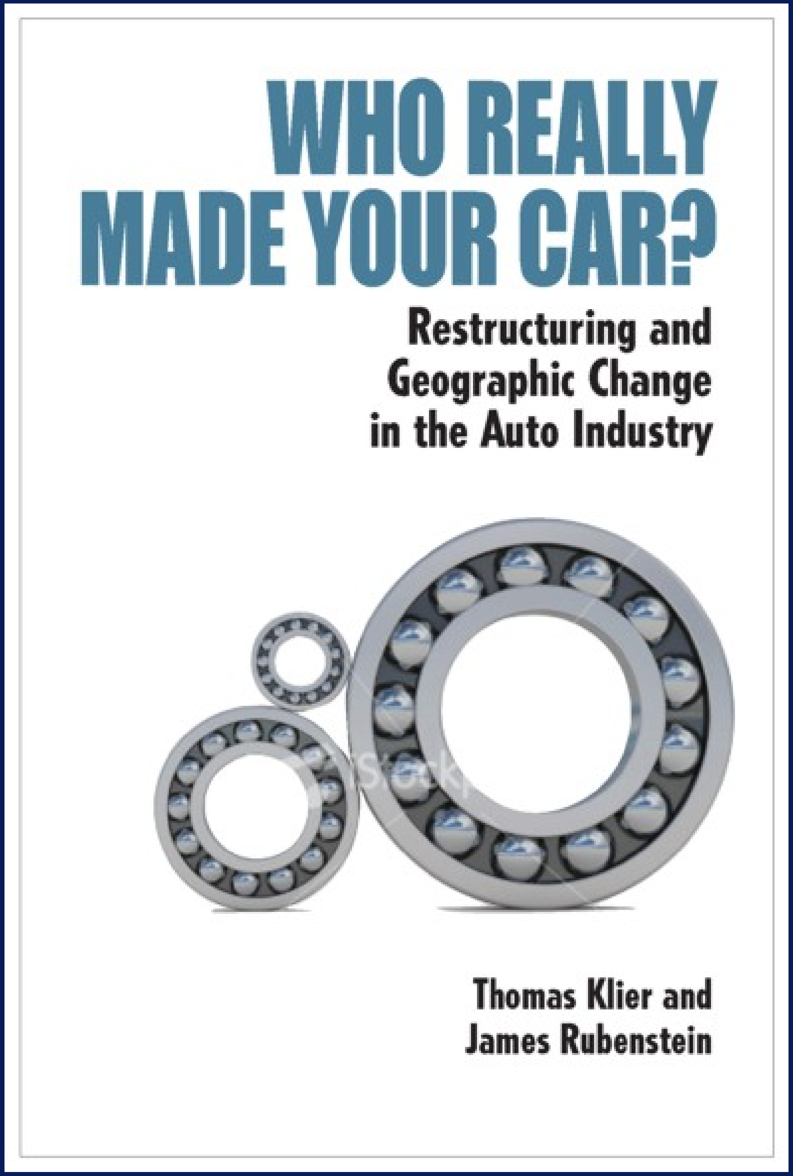


# Enhanced role for supply base

Nearly 80% of industry jobs

70% of a car's value added

# Everything you always wanted to know about the motor vehicle parts industry (but were afraid to ask)

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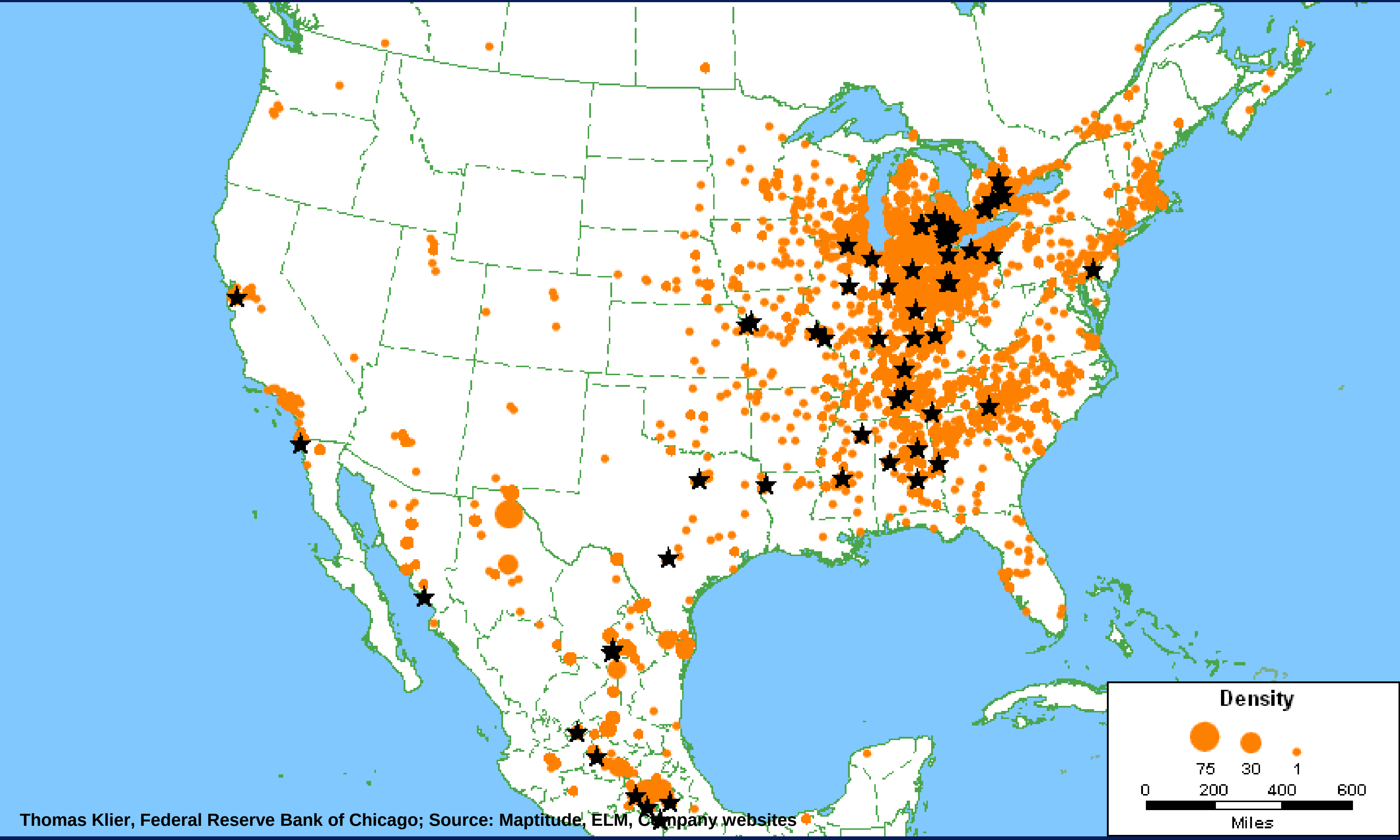
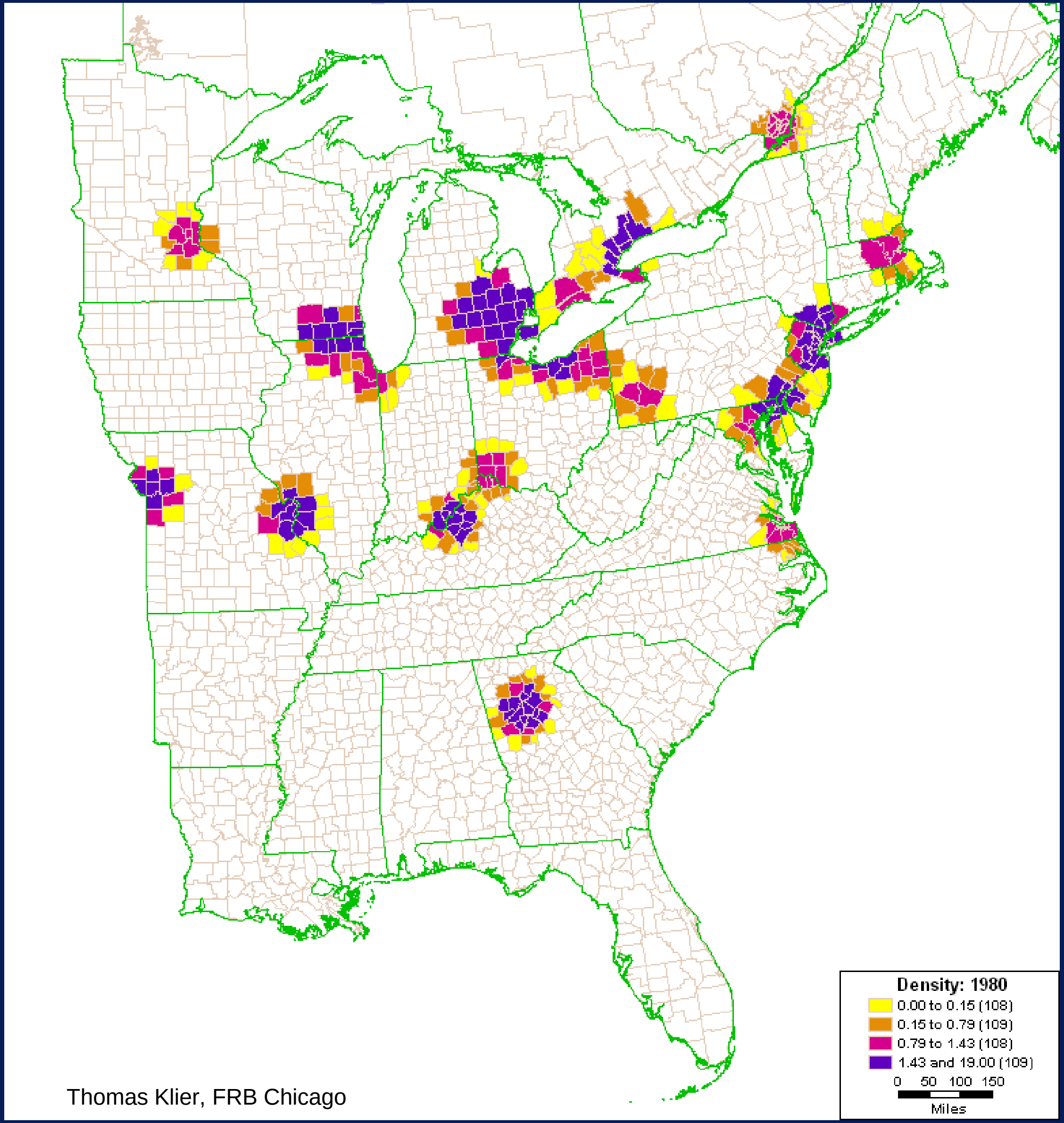
# Geography of the auto industry

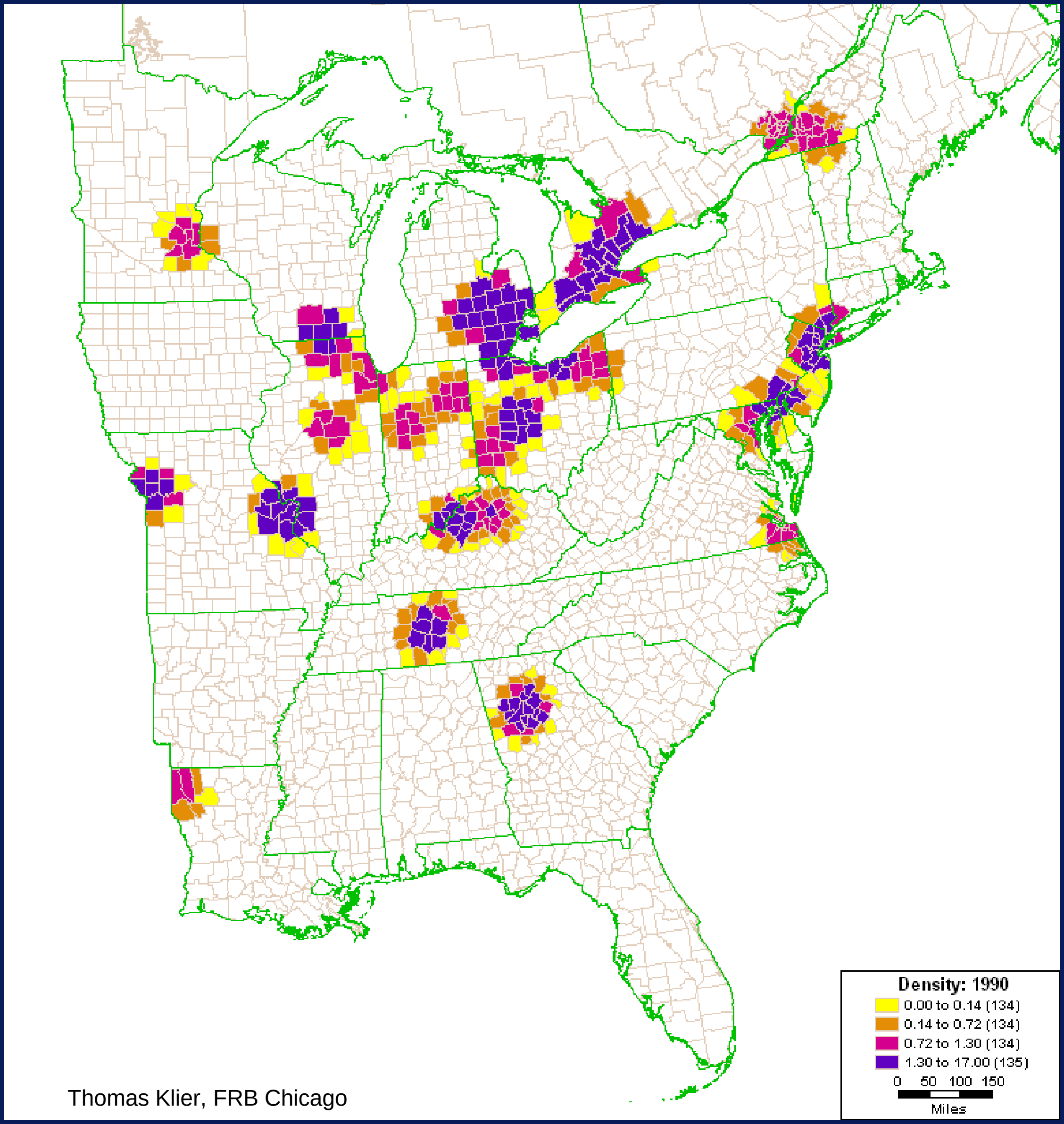



Thomas Klier, Federal Reserve Bank of Chicago; Source: Maptitude, ELM, Company websites

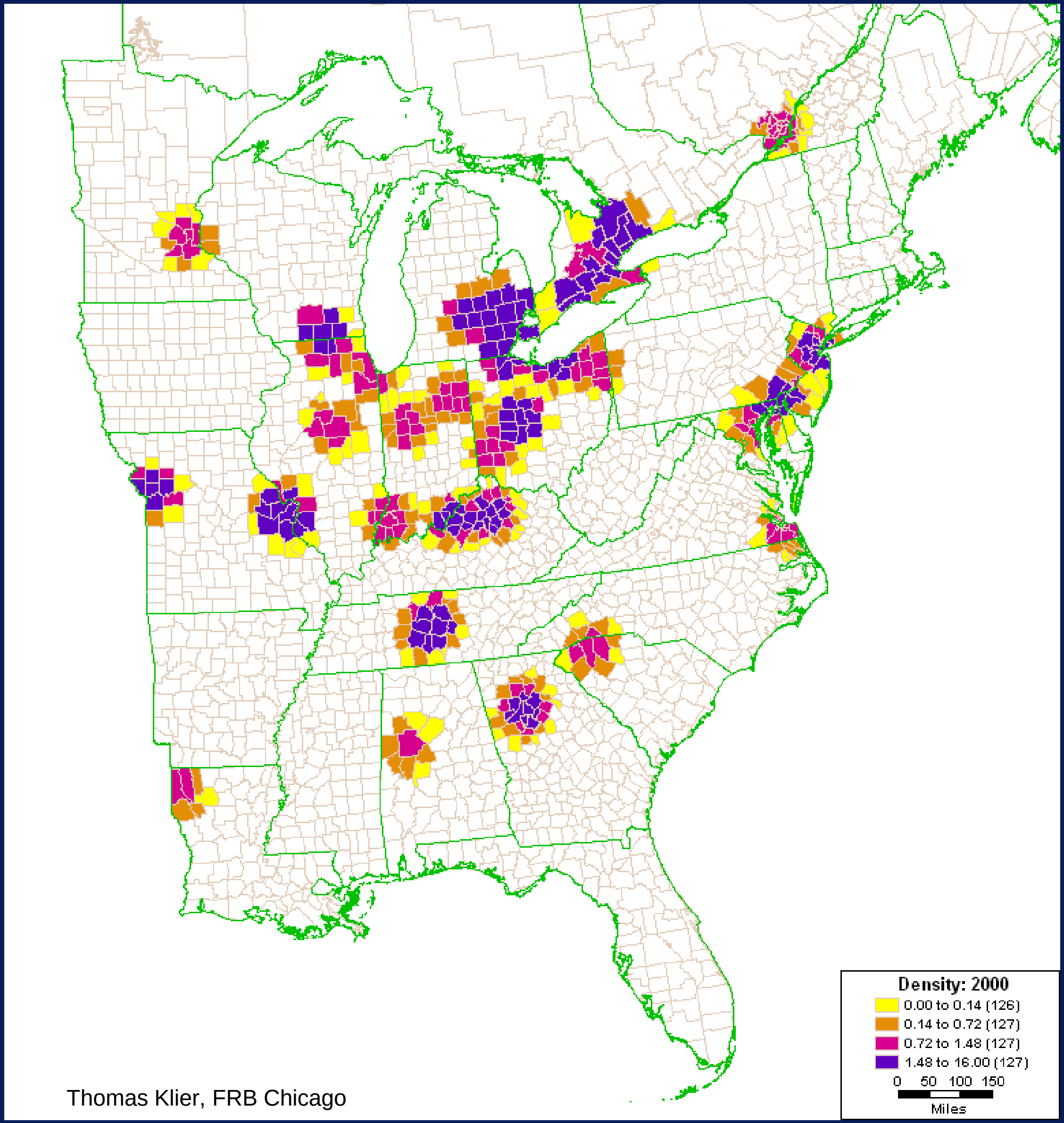
# Assembly line density in 1980



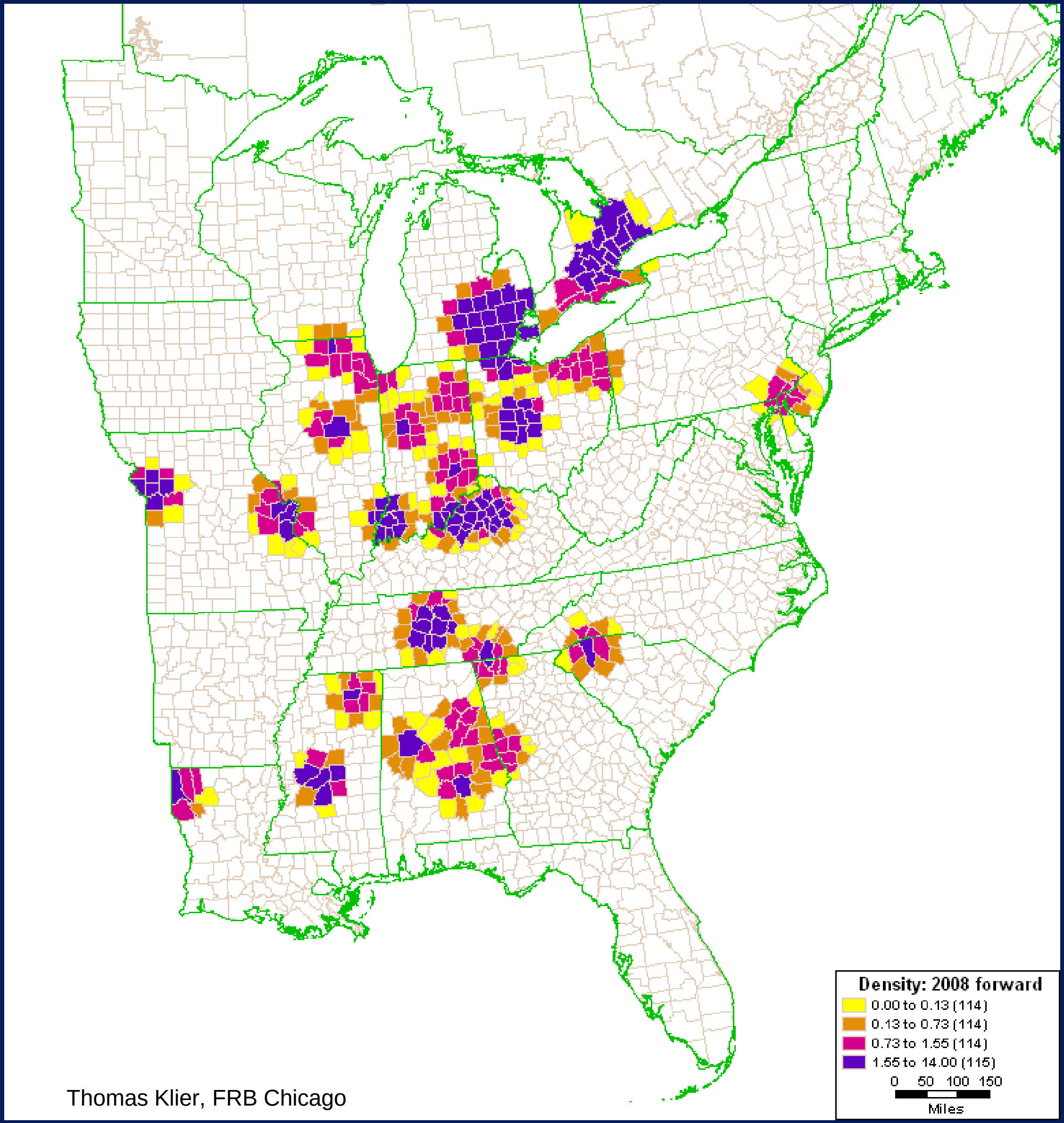
# Assembly line density in 1990



# Assembly line density in 2000



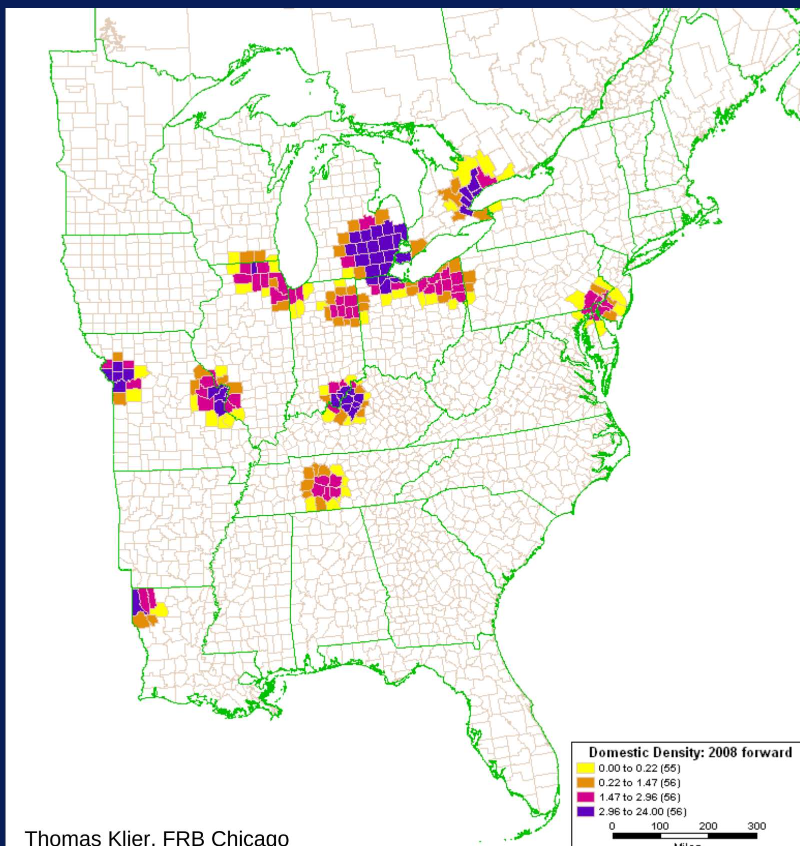
# Assembly line density in 2008+



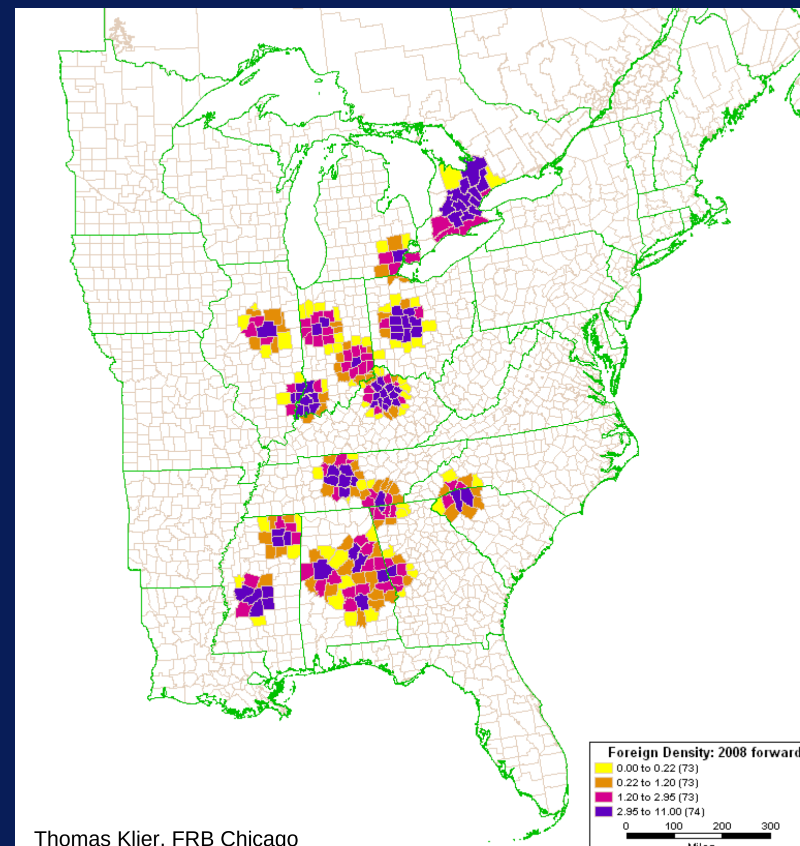
# The tyranny of geography

## 2008+

### Domestic

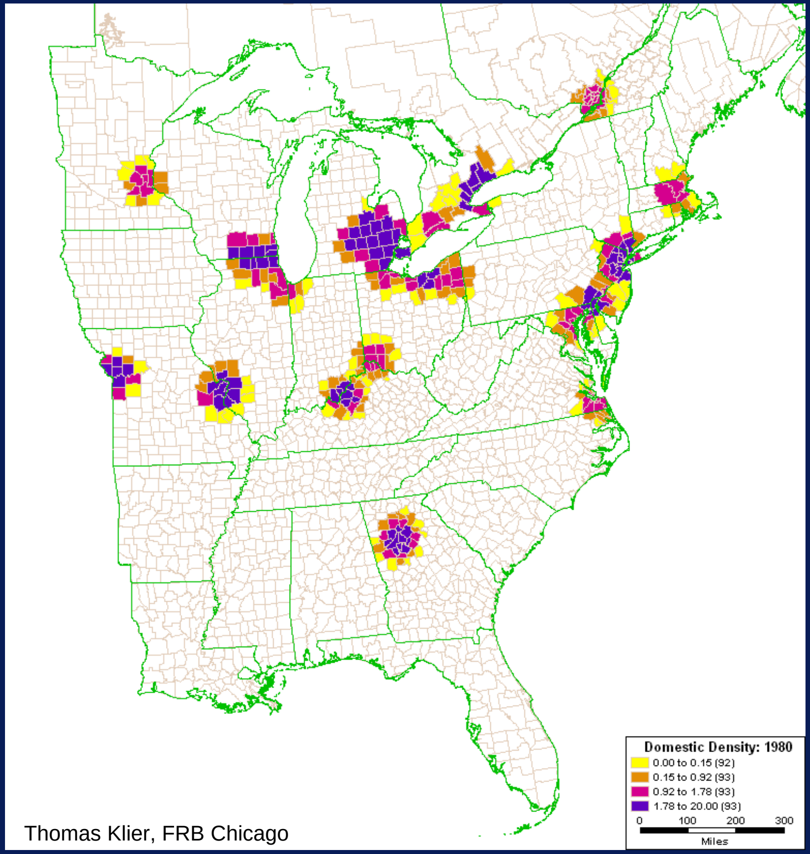



### Foreign

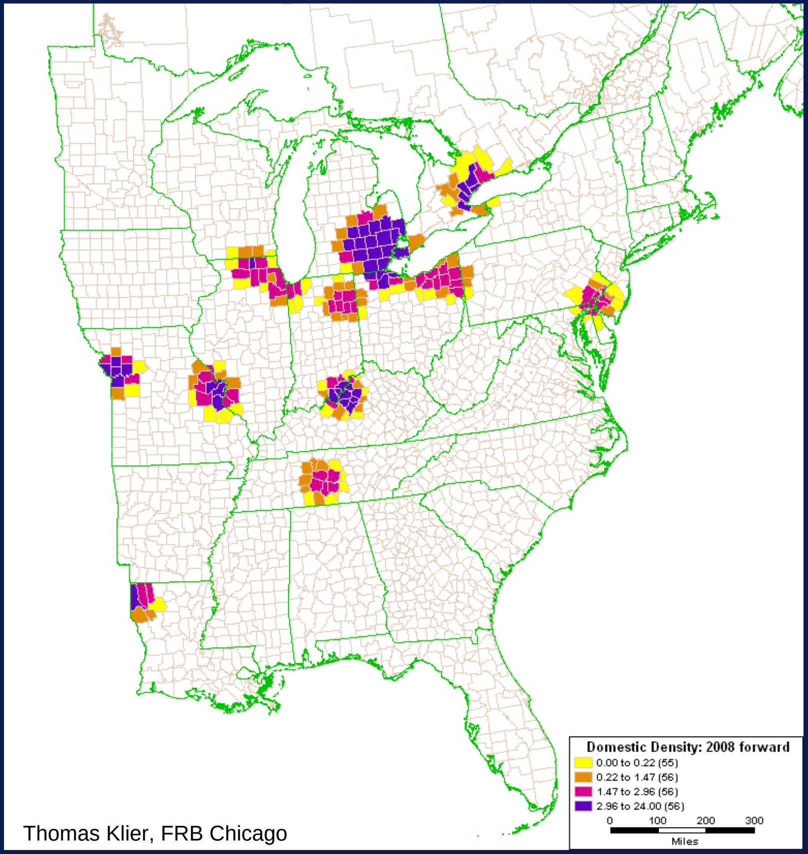


# Domestic carmakers retreat to Midwest

## 1980




## 2008+



# Detroit 3 will be more concentrated

## Michigan's share of U.S. assembly plants

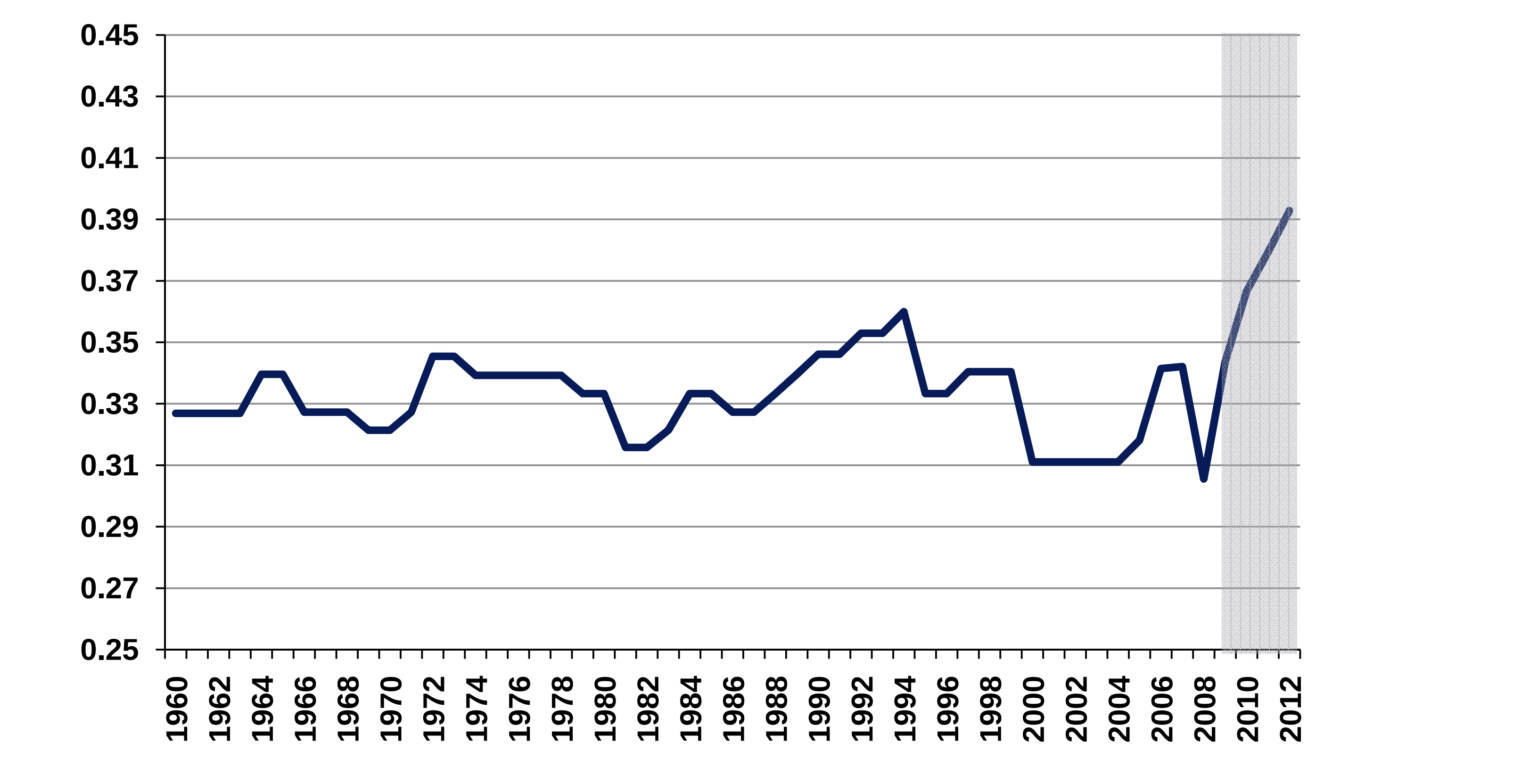
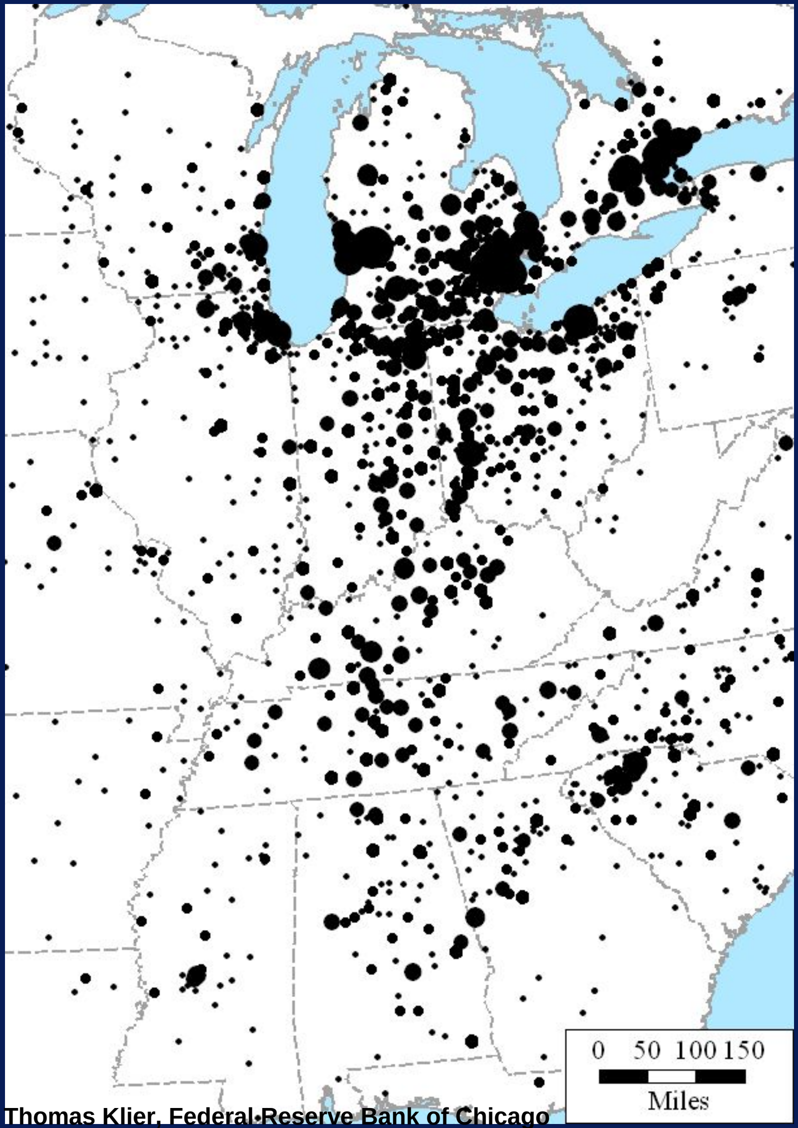


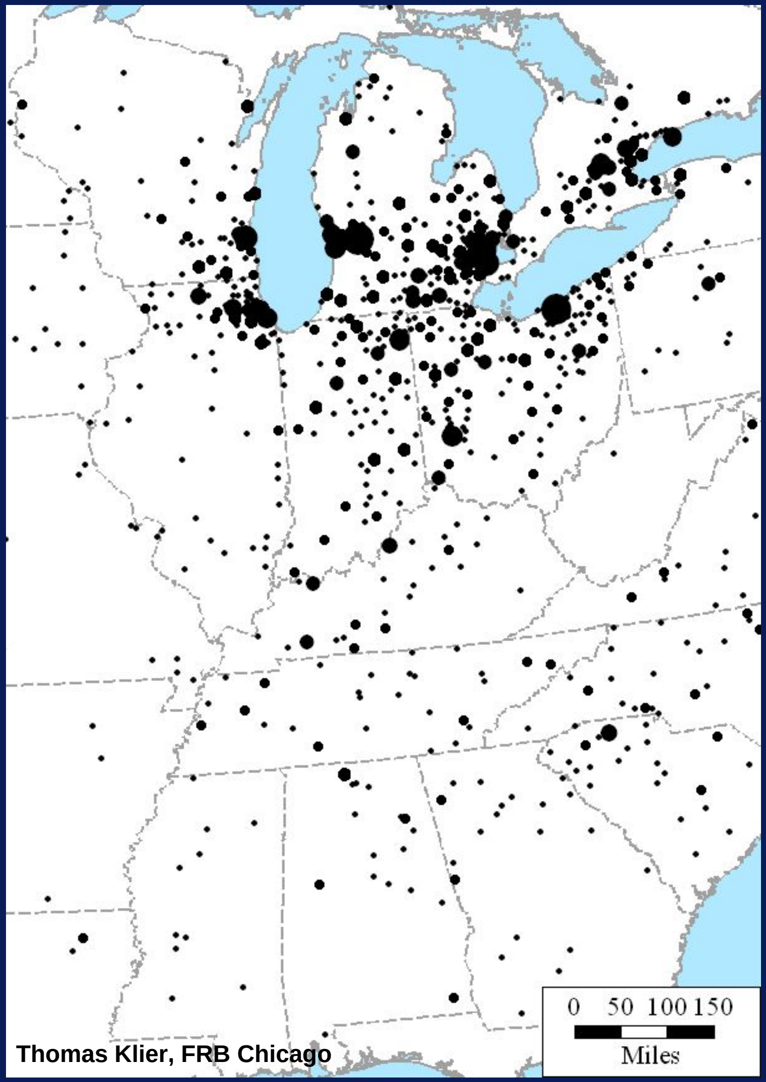

Chart reflects announced plant closures and openings as of December 2008

# Parts: suppliers cluster in auto alley

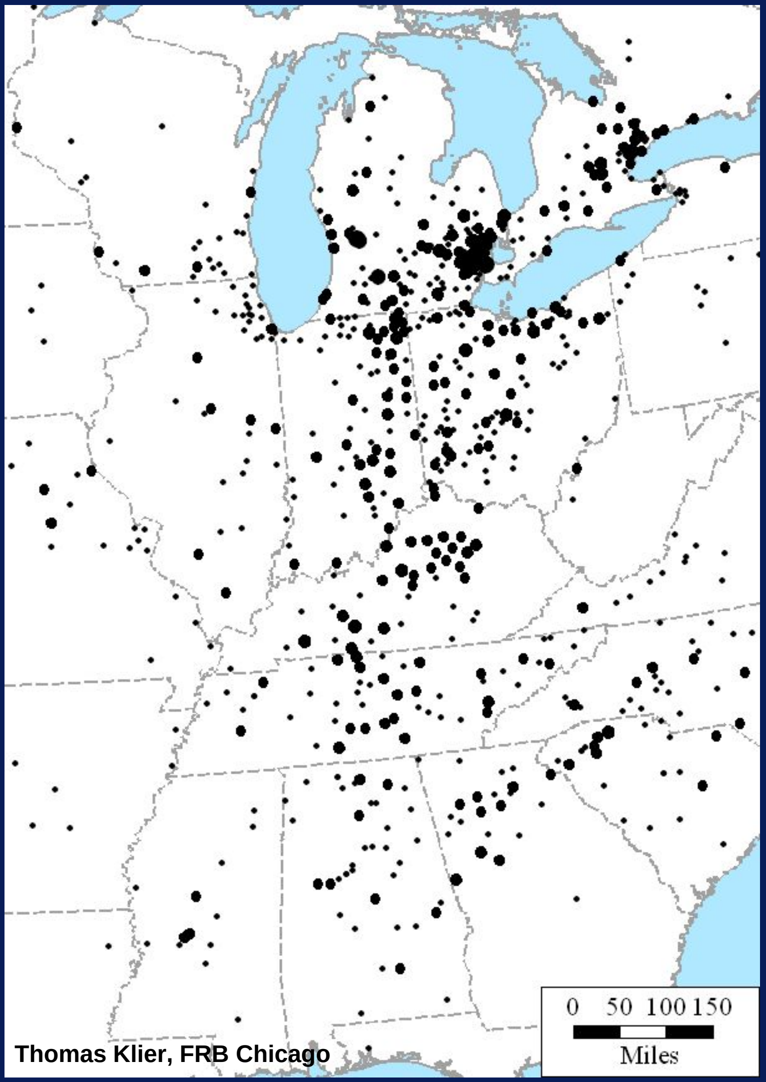


# A north-south auto corridor emerges

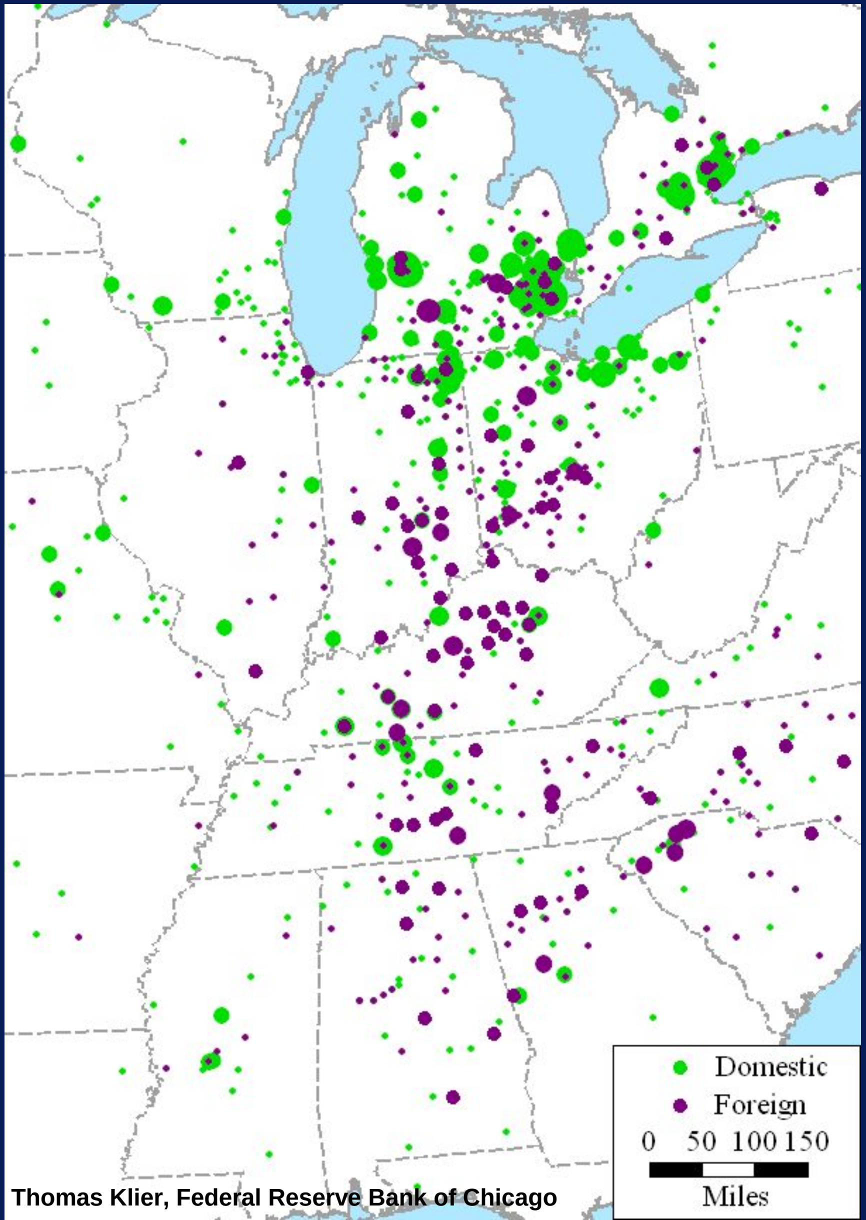
**Before 1980**




**Since 1980**



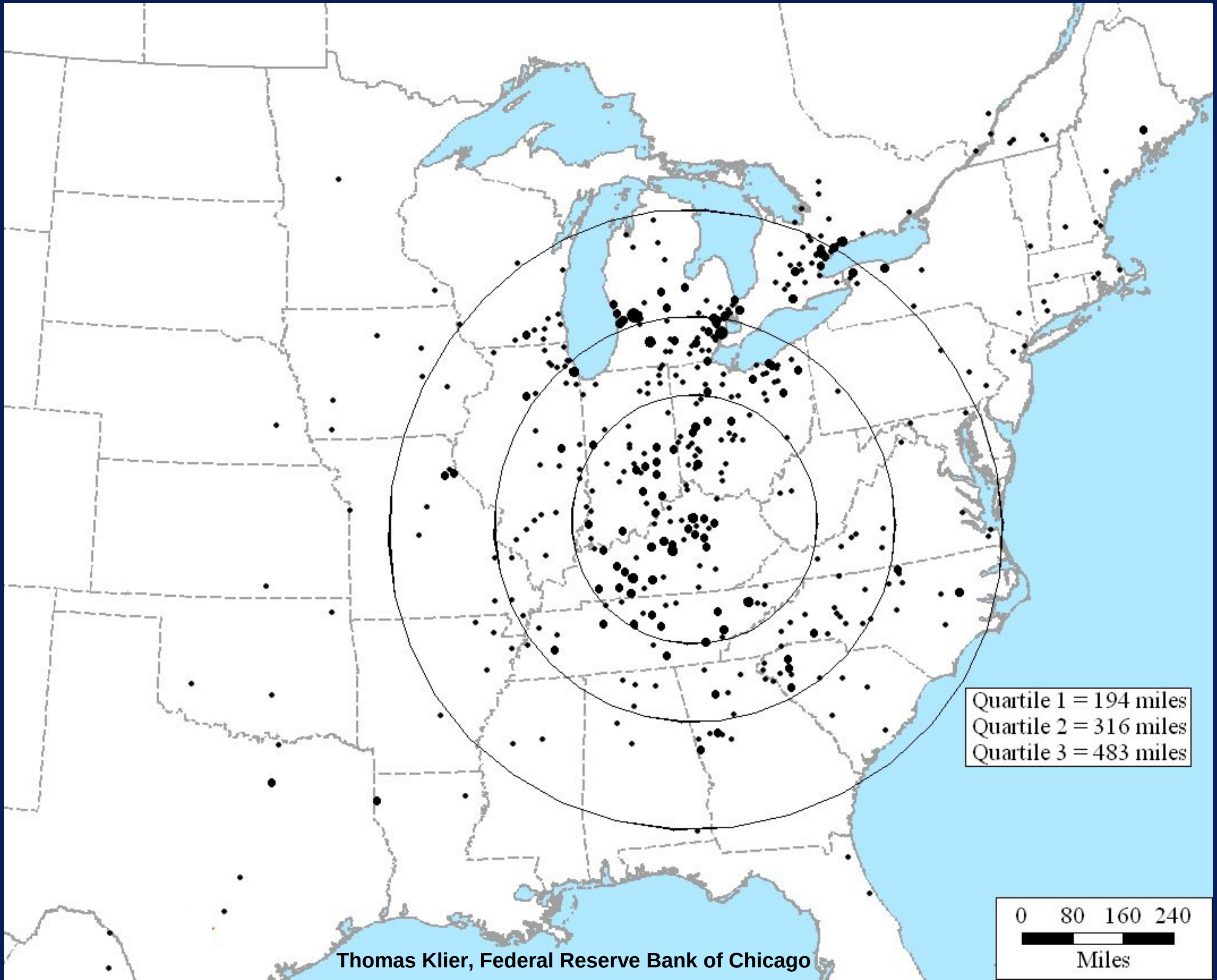
# Foreign parts plants gravitate south




Since 1980

# Auto supplier networks are regional

## Toyota, Kentucky, supplier network




Thomas Klier, Federal Reserve Bank of Chicago

# The supply base links all carmakers

- On average a supplier plant ships to four different customers.
- Only 12% of North American supplier plants supply exclusively to foreign headquartered carmakers producing in North America.
- Supplier networks are linked across carmakers:

| | Also supplying to: | | |
|---|---|---|---|
| | D3 | Asians | Europeans |
| Suppliers to D3 | 100% | 42% | 15% |

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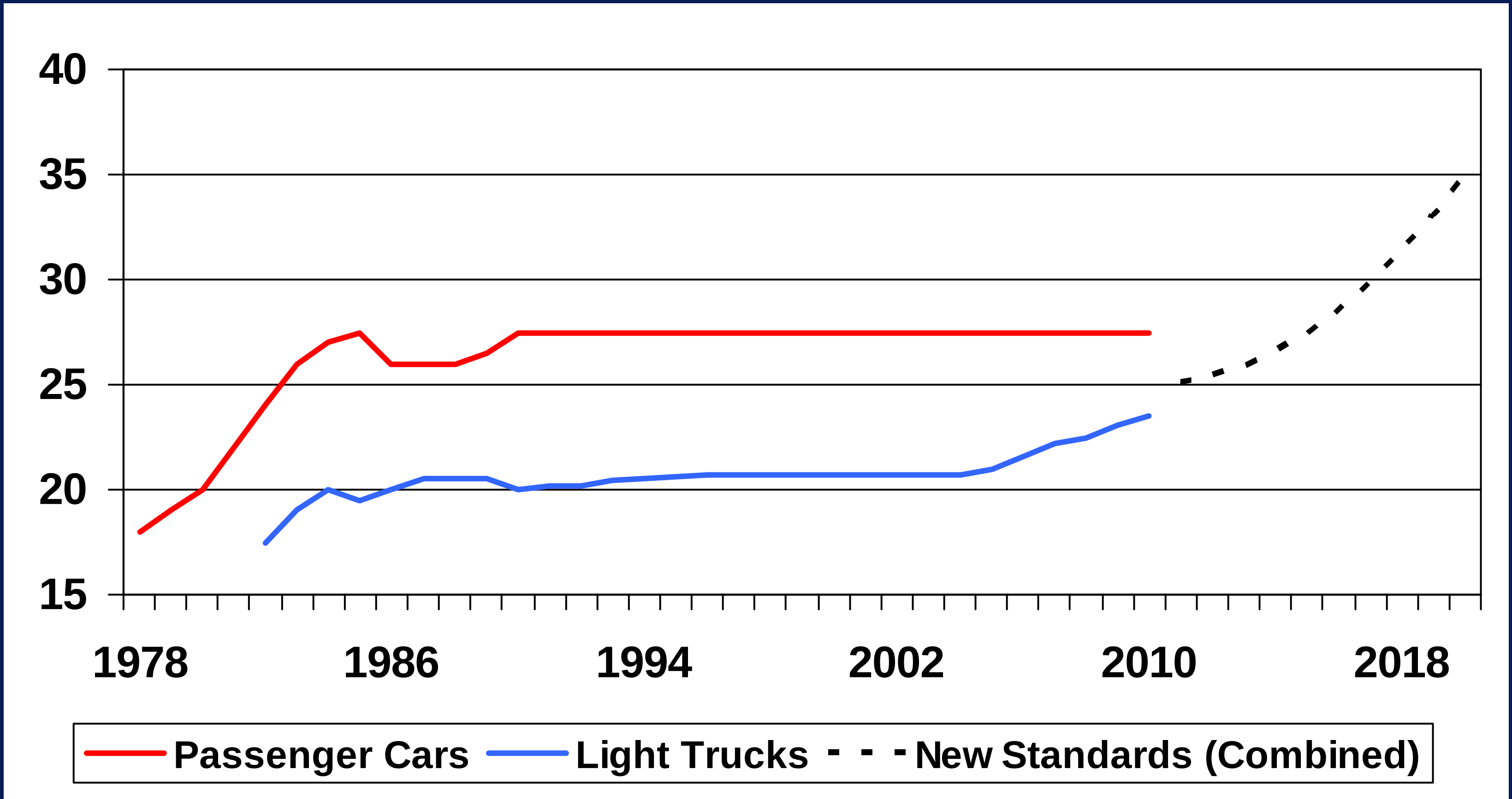
# Bailout timeline

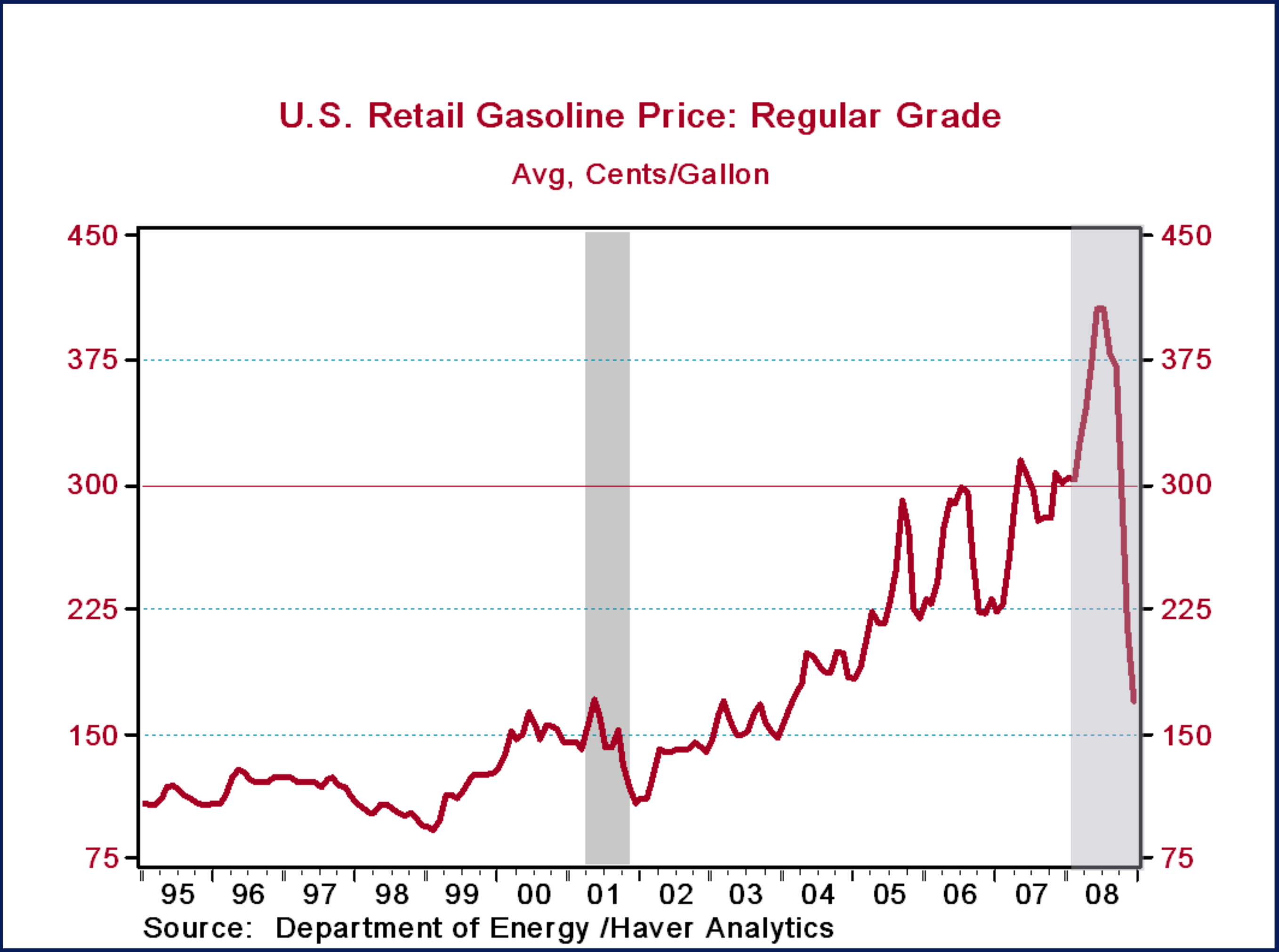
- Car Czar to be appointed by Obama administration.
- February 17: Carmakers present business models to show financial viability. GM to receive additional $4bn contingent on congressional approval.
- March 31: Carmakers need to reach agreements with workforce, creditors, dealers, and other stakeholders to meet terms of business models.

# Stricter Fuel efficiency regulations ahead

## CAFÉ standards

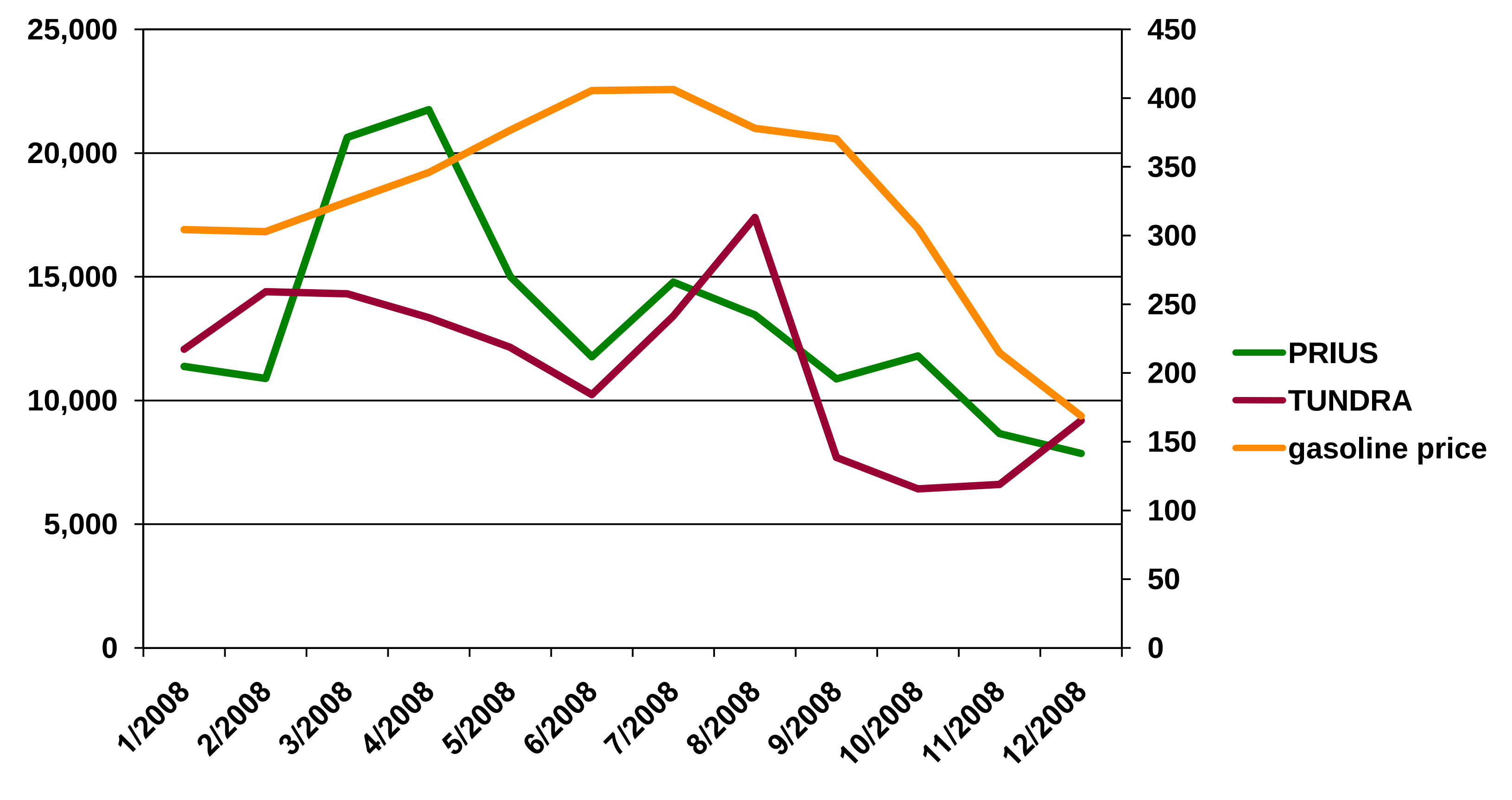


# Gasoline peaked in July. What's next?



# What product mix will sell?

## Sales of Prius and Tundra vs the price of gasoline



# Summary – tough times for auto

- The business cycle is back – with a vengeance.
- Currently all major auto markets are slowing down, challenging both OEMs as well as parts suppliers.
- Domestic carmakers fighting for survival. Possibility of domino-effects working through supply base.
- Auto industry turmoil has regional implications.