Which domestic industry? Structure and geography

Detroit, MI
May 10, 2010

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Outline

- 1980 vs 2009 – this is not your father’s industry
  - Market share
  - Production share
- Structure shapes geography
  - Auto alley
  - NAFTA as production center
- Perspective on recovery
1980 and 2009 – Two bad downturns

Light vehicle sales (SAAR, million units)

Source: Bureau of Economic Analysis/Haver Analytics
Yet, this is not your father’s industry

Motor Trend Car of the Year

1980: Chevy Citation

2010: Ford Fusion
Detroit lost 1/3 of the market

Share of U.S. light vehicle sales

1980:
- Detroit: 77%
- Japan Three: 15%
- Other: 8%

2009:
- Detroit: 45%
- Japan Three: 35%
- Other: 20%
Change was broad-based

Sales leader by market segment

<table>
<thead>
<tr>
<th>Segment group</th>
<th>Make of best-selling model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MY 1980</td>
</tr>
<tr>
<td>Small car</td>
<td>GM</td>
</tr>
<tr>
<td>Midsize car</td>
<td>GM</td>
</tr>
<tr>
<td>Large car</td>
<td>GM</td>
</tr>
<tr>
<td>Luxury car</td>
<td>GM</td>
</tr>
<tr>
<td>CUV</td>
<td>-----</td>
</tr>
<tr>
<td>SUV</td>
<td>AMC</td>
</tr>
<tr>
<td>Van</td>
<td>Ford</td>
</tr>
<tr>
<td>Pickup</td>
<td>Ford</td>
</tr>
</tbody>
</table>
In addition, many producers entered…

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

<table>
<thead>
<tr>
<th>Carmaker</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>VW (1)</td>
<td>1978</td>
</tr>
<tr>
<td>Honda</td>
<td>1982</td>
</tr>
<tr>
<td>Nissan</td>
<td>1983</td>
</tr>
<tr>
<td>Toyota</td>
<td>1984</td>
</tr>
<tr>
<td>Mitsubishi, Mazda</td>
<td>1987</td>
</tr>
<tr>
<td>Subaru</td>
<td>1989</td>
</tr>
<tr>
<td>BMW</td>
<td>1994</td>
</tr>
<tr>
<td>Mercedes</td>
<td>1997</td>
</tr>
<tr>
<td>Hyundai</td>
<td>2005</td>
</tr>
<tr>
<td>Kia</td>
<td>2009</td>
</tr>
</tbody>
</table>

(1) Closed in 1989, new plant to open in 2011
...and Detroit also lost production share

U.S. Light vehicle production share

1980

- Detroit: 97%

2009

- Detroit: 41%
- Japan: 55%

Detroit, Japan, Other
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Perspective on recovery
From manufacturing belt...

Assembly line density

1980

12 coastal assembly plants in operation
...to auto alley

Assembly line density

2010

No coastal assembly plants left
1980: Domestic = Detroit
2010: Detroit about half of industry

Detroit Three

Others

Domestic Plant Density, 2010
- 0 to 0.143 (49)
- 0.143 to 0.757 (50)
- 0.757 to 1.56 (50)
- 1.56 and above (50)

Foreign Plant Density, 2010
- 0 to 0.133 (68)
- 0.133 to 0.714 (68)
- 0.714 to 1.403 (69)
- 1.403 and above (69)

Thomas Klier, FRB Chicago
Geography of auto production, ca. 2010

Thomas Klier, Federal Reserve Bank of Chicago; Source: Maptitude, ELM, Company websites
North America kept production

U.S. light vehicle sales by major production region

- NAFTA
- Asia
- Europe

Percent

Mexico gained production share

NAFTA light vehicle production

1985:
- MEX: 3%
- CDN: 14%
- U.S.: 83%

2009:
- MEX: 17%
- CDN: 17%
- U.S.: 65%
D3 production share falls from 96% to 55%
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Geography of recovery

Light vehicle production capacity, 2010

MI and ONT represent 50% of D3 capacity shown.

Virtually no presence of D3 in southern half of auto alley.

At current low capacity utilization rate this footprint can accommodate a substantial volume expansion.
Global perspective

- Growth is elsewhere: In 2010/Q1 GM sold more vehicles in China than in the U.S.

- 2009 light vehicle sales
  - NAFTA 12.6 million units
  - EU 13.2 million units
  - China 13.6 million units
Company effects matter
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After the Perfect Storm
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