THE ONTARIO AUTOMOTIVE PARTS INDUSTRY

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Presentation Outline

• Introduction: The Auto Parts Industry
• Industry Performance Since 1990
  • Overall Performance: Output, Trade, Employment, Productivity
  • Canada – United States Competitiveness
• Changing Structure of the Industry
  • Modernization
  • Rationalization and Consolidation
  • ‘Canadianization’
• Challenges Facing the Industry
• Restructuring the Supply Chain
• Summary and Research Challenges
The Geography of the Auto Parts Industry: A ‘Cluster’ at What Scale?

- Canadian industry is part of the Great Lakes/mid-West regional auto concentration
- close to 90 percent of all plants and employment in the Canadian industry are located in southern Ontario
- within Ontario there are a number of sub-regional clusters:
  - the GTA
  - Windsor
  - K-W, Cambridge, Guelph
  - Niagara Peninsula
  - London
The Geography of the Automotive Industry in Canada and the U.S.

The Great Lakes Auto Cluster
All Automotive Parts Plants, 2002, Southwestern Ontario

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Performance of the Automotive Parts Industry in Canada 1990-2002

- southern Ontario’s prosperity in the 1990s owed more to the automotive industry than to the rise of the ‘New Economy’

- along with the vehicle assembly industry, the automotive parts industry in Canada prospered

- the impressive performance of the industry is reflected in almost all key economic indicators
Performance of the Automotive Parts Industry in Canada 1990-2002

“For two decades, the bland landscape between Toronto and Windsor has been home to a great wealth-creation machine: Canada’s auto players…. An industry that looks grubby and quaintly old-fashioned from the outside has in reality been a hotbed of job growth, innovation, and capital spending. Its success has allowed Canada to skirt recession as other industries implode.”

Eric Reguly, *ROB Magazine*, May 2003
Value of Shipments, GDP (Value Added) and Domestic Market, Automotive Parts Industry, Canada, 1990-2002

Source: Statistics Canada
Export Intensity (exports/shipments) and Import Penetration (imports/domestic market), Automotive Parts Industry, Canada, 1990-2002

Source: Statistics Canada, special tabulation
Total Employment, Average Hourly Wage, and Labour Productivity, Automotive Parts Industry, Canada, 1990-99

Source: Statistics Canada
Performance by Sub-industry in the 1990s

- **Plants**: plastic parts, engines and engine parts, and metal stampings account for over 50% of the total number of plants

- **Employment**: strong growth in employment in the metal stamping, plastic parts, and seating/interior trim
# One Industry or Eight? Plants and Employment in 1999

<table>
<thead>
<tr>
<th>Sub-industry</th>
<th>NAICS Code</th>
<th>Number of Plants</th>
<th>Total Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine and Parts</td>
<td>33631</td>
<td>89</td>
<td>10,707</td>
</tr>
<tr>
<td>Electrical/Electronic Equipment</td>
<td>33632</td>
<td>50</td>
<td>6,811</td>
</tr>
<tr>
<td>Steering and Suspension Components</td>
<td>33633</td>
<td>25</td>
<td>5,530</td>
</tr>
<tr>
<td>Brake Systems</td>
<td>33634</td>
<td>47</td>
<td>7,512</td>
</tr>
<tr>
<td>Transmission and Power Train</td>
<td>33635</td>
<td>53</td>
<td>12,554</td>
</tr>
<tr>
<td>Seating and Interior Trim</td>
<td>33636</td>
<td>56</td>
<td>12,760</td>
</tr>
<tr>
<td>Automotive Metal Stamping</td>
<td>33637</td>
<td>87</td>
<td>18,166</td>
</tr>
<tr>
<td>Other</td>
<td>33639</td>
<td>137</td>
<td>22,119</td>
</tr>
<tr>
<td>Plastic Parts</td>
<td>326193</td>
<td>93</td>
<td>17,753</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3363 + 326193</td>
<td>637</td>
<td>113,912</td>
</tr>
</tbody>
</table>
Performance by Sub-industry in the 1990s

- **Output**: largest increases in value of shipments occurred in the engines/engine parts, seating/interior trim, transmission and power train, and plastic parts.

- **Labour Productivity**: largest increases recorded by the engines/engine parts, seating/interior trim, and transmission and power train sub-industries.
Value of Shipments by NAICS SubIndustry, Automotive Parts Industry, Canada, 1992-2002

- Engine and engine parts
- Electrical and electronic
- Steering and suspension
- Brake system
- Transmission and power train
- Seating and interior trim
- Metal stamping
- Plastic parts

Source: Statistics Canada, special tabulation
Canada-United States Competitiveness

• **Labour Productivity:**
  • productivity growth in the Canadian parts industry kept pace with that in the United States during the 1990s
  • but the gap in labour productivity between the two persisted
  • need to better understand the factors that produce this ‘productivity gap’
Value Added per Hour by NAICS Subindustry, Automotive Parts Industry, Canada, 1990-99

Source: Statistics Canada (CANSIM II)
Canada-United States Competitiveness

- **Labour Productivity:**
  - productivity growth in the Canadian parts industry kept pace with that in the United States during the 1990s
  - but the gap in labour productivity between the two persisted
  - need to better understand the factors that produce this ‘productivity gap’

- **Labour Costs:**
  - average hourly wage in the automotive parts industry rose faster in Canada than in the United States
  - but due to the falling value of the Canadian dollar Canada continued to enjoy a labour cost advantage of approximately 20-25%
The Source of Growth: Low Value of the Dollar or Restructuring?

- some suggest that the growth was due to the decline in the value of the Canadian Dollar

- but empirical evidence suggests that the growth was linked at least as much to the restructuring of the industry

- restructuring involved modernization, rationalization and consolidation as well as the continued ‘Canadianization’ of the industry
Restructuring of the Industry: Modernization

- there was a significant wave of new capital investment into the industry in the mid 1990s
Capital Expenditures, Automotive Parts Industry, Canada, 1991-2002

CDN Dollars (x 1000)

Year


Source: Statistics Canada, CANSIM II

Capital expenditures, machinery & equipment
Capital Expenditures, Construction

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Restructuring of the Industry: Modernization

- there was a significant wave of new capital investment into the industry in the mid 1990s

- the 1998 advanced manufacturing technology diffusion survey conducted by Statistics Canada revealed a significant take-up of new technology within the automotive parts industry
Characteristics of Plants Using Advanced Technologies

- analysis of the differential take-up of new technology by established plants vs. new entrant plants and its impact on productivity growth reveals:
  - *Plant age*: plants ‘born’ in the 1990s were more likely to use new technologies
  - *Plant size*: larger plants use new technologies more often
  - *Firm Structure*: plants owned by multi-plant enterprises are more likely to use new technologies than single plant firms
  - *Location*: plants located on the edge of metropolitan areas use new technology more than others
  - *Ownership*: the degree of technology diffusion is similar between Canadian- and foreign-owned plants
Restructuring of the Industry: Rationalization and Consolidation

- number and proportion of large plants (>200 employees) increased significantly during the 1990s

- sharpest decline in the number of plants employing less than 100 workers

- by 2000, large plants (>200 employees) still accounted for less than 30% of total plants but over 85% of shipments and value-added and over 75% of the employment
Distribution of Plants by Size, Auto Parts Industry (NAICS 3363), Canada: 1990, 1994, 1999

<table>
<thead>
<tr>
<th>Size Range of Plants</th>
<th>No. of Plants 1990</th>
<th>No. of Plants 1994</th>
<th>No. of Plants 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-49</td>
<td>326</td>
<td>253</td>
<td>243</td>
</tr>
<tr>
<td>50-99</td>
<td>98</td>
<td>87</td>
<td>61</td>
</tr>
<tr>
<td>100-199</td>
<td>92</td>
<td>104</td>
<td>89</td>
</tr>
<tr>
<td>200 +</td>
<td>84</td>
<td>100</td>
<td>151</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
<td>544</td>
<td>544</td>
</tr>
</tbody>
</table>

Source: Statistics Canada: Special Tabulation
Percent of Total Value of Shipments by Size of Establishment, Automotive Parts Industry, Canada, 1990-99

Source: Statistics Canada Special Tabulation
Restructuring of the Industry: Rationalization and Consolidation

- largest plants had the highest, and fastest growing, rates of labour productivity and also the highest average hourly earnings

- a marked increase in the proportion of plants owned by multi-plant firms

- largest growth in employment and value of shipments during the 1990s occurred in plants belonging to multi-plant firms
Proportion of Single Plant and Multi Plant Firms, SIC 325, Canada, 1980-99

Year
Proportion

% SINGLE % MULTI

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Restructuring of the Industry: ‘Canadianization’

- Canadian-owned plants increased in significance with regard their share of number of plants, employment, and value of shipments

- most of the employment growth in the industry post-1990 came from Canadian-owned plants
Restructuring of the Industry: ‘Canadianization’

- compared to Canadian-owned plants, on average foreign-owned plants:
  - have significantly larger workforces
  - are much more likely to belong to a multi-plant firm
  - have higher levels of labour productivity
  - have higher wage rates
  - have lower wage:total cost ratios
Segmented Structure of the Industry

Globally Competitive Canadian Companies - account for about one-third of total employment and output

Plants Owned by Foreign Globally Competitive Component Manufacturers - account for approximately 50 percent of employment and output

The Rest - the remaining 20 percent of employment and output is accounted for by a large number of small Canadian owned plants and a small number of foreign owned plants in transition

Source: Pilorusso (2002)
Challenges

• While the Canadian parts industry did well through the 1990s, it currently faces these challenges:
  – the demise of the Auto Pact
  – the need to increase its share of transplant OEM market
  – the shifting pattern of assembly investment in North America
  – the competitive pressures generated by OEM focus on streamlining the supply chain
Restructuring the Supply Chain

• In the 1990s, lean production focused on reducing costs within plants
  – work reorganization
  – increased out-sourcing

• By the late 1990s, focus had shifted to achieving cost reductions across the supply chain
  – culling suppliers
  – cutting time and cost of managing the supply chain
Restructuring & Consolidating the Supplier Base

- OEM criteria for retaining Tier 1 status
  - price
  - quality
  - ability to deliver
  - technological capability
  - geographical reach
  - ability to manage Tier 2 suppliers

- reduction in number of Tier 2 suppliers
- increased modular production
- continued pressure to cut component cost
Restructuring the Supplier Base (cont.)

• Tier 1 cull of lower tier suppliers following criteria similar to those by OEMs
• significant merger and acquisition activity
• limits to culling
  – OEM demands for price reductions
  – minimum number of suppliers surviving
• streamlining and expanding supply chain interactions
E-Business and the Supply Chain

- electronic data interchange
- online reverse auctions
- management portals for OEMs
- paperless communication/real time tracking
Supplier Portal - Covisint

Mission statement:

“Covisint is the vehicle to connect the automotive industry in a virtual environment to bring speed to decision-making, eliminate waste and reduce costs while supporting common business processes between manufacturers and their supply chain.”

Covisint Corporate Backgrounder

www.covisint.com
Vision statement:

“Covisint is building an online environment enabling individual enterprises and the automotive industry to achieve the following goals:

• 12-18 month vehicle development cycle
• Compressed order-to-delivery cycles
• Greater asset efficiency and utilization
• Higher profitability with direct impact to the bottom line
• More integrated supply chain planning
• Reduced business process variability”

Covisint Corporate Backgrounder
www.covisint.com
Supplier portals - adoption and impacts

- network externalities
- rapid adoption
- improved competitiveness for firms that can adapt
- further culling of suppliers unable/unwilling to adopt this system of supply chain management
Summary

- parts industry prospered in the 1990s
- remained competitive relative to the U.S.
- rationalization and consolidation had major impact on structure of the industry
- significant growth of Canadian owned plants
- shift in cost cutting from within firms to supply chain
- continued pressure to cut costs having major impact on lower tier suppliers
Research Challenges

• the size and heterogeneity of the industry pose a challenge for interviewing

• what to focus on? – sub-industry or sub-region?

• focus will be on two sub-regional “clusters”
  • Windsor
  • either Kitchener-Waterloo-Guelph or GTA
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Comparison of Labour Productivity, Automotive Parts Industry, Canada and United States: 1990-1999

Value added per worker (x1000 constant 1992 CAN$)

Ratio Canada/U.S. Labour Productivity (Adjusted)

Year

Canadian/U.S. Dollar Exchange Rate and Value of Shipments, Automotive Parts Industry, Canada, 1990-2002

Year

Exchange rate

Value of Shipments (x 1000) constant CDN 1992$

Source: Statistics Canada
Hourly Wage - "Profit" Trends, Automotive Parts Industry, Canada, 1990-99

(Wages + "Profits" = Value Added per Hour in Constant 1992$)

Year

CDN $ (constant 1992)
$0.00 $10.00 $20.00 $30.00 $40.00 $50.00 $60.00 $70.00

"Profits" (Value Added per Hour - Average Hourly Real Wage)
Average Real Hourly Wage