

THE ONTARIO AUTOMOTIVE PARTS INDUSTRY

Susan Fitzgibbon

John Holmes

Department of Geography

Queen's University

with

Pradeep Kumar

School of Industrial Relations

Queen's University

Tod Rutherford

Maxwell School

Syracuse University

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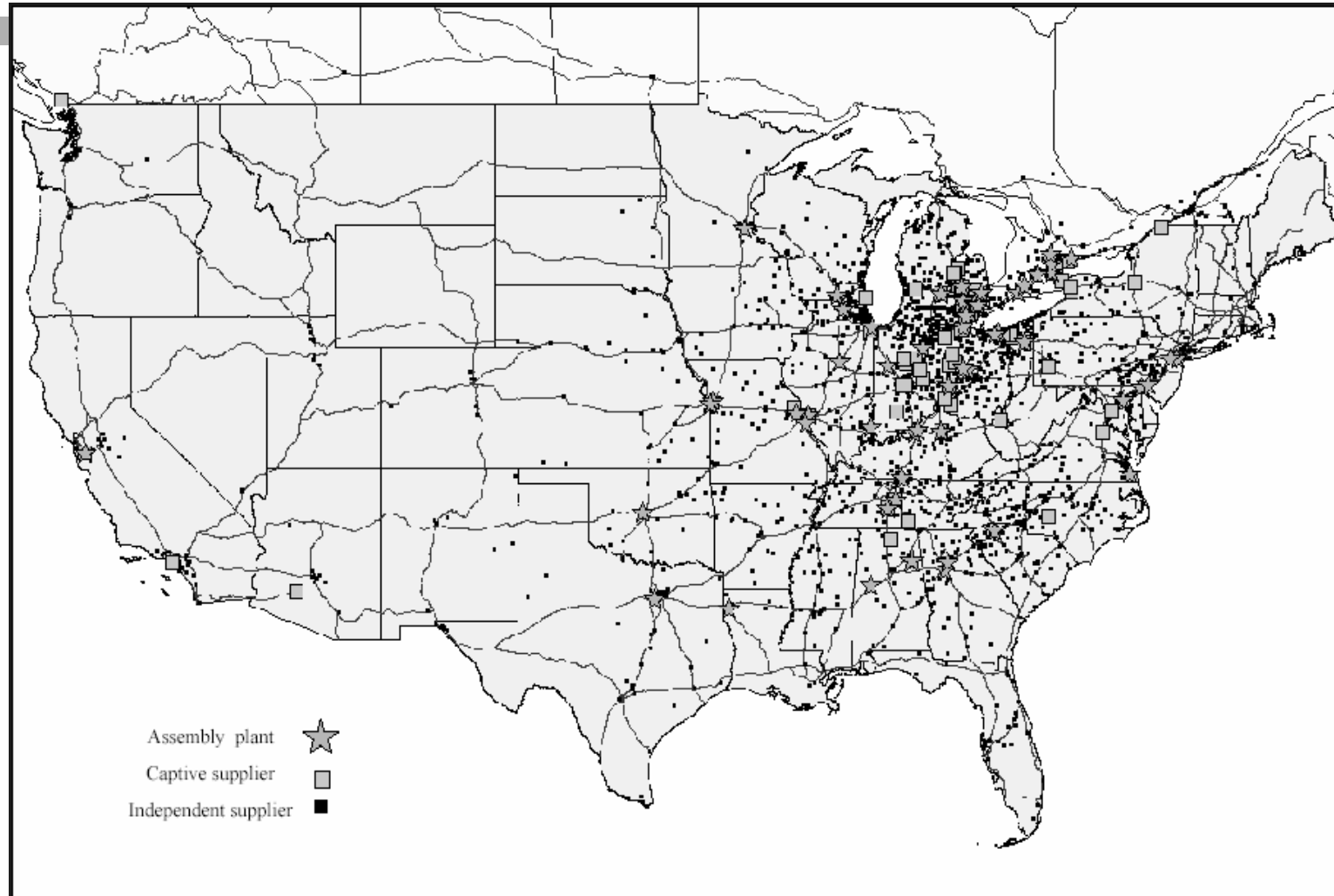
Presentation Outline

- 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

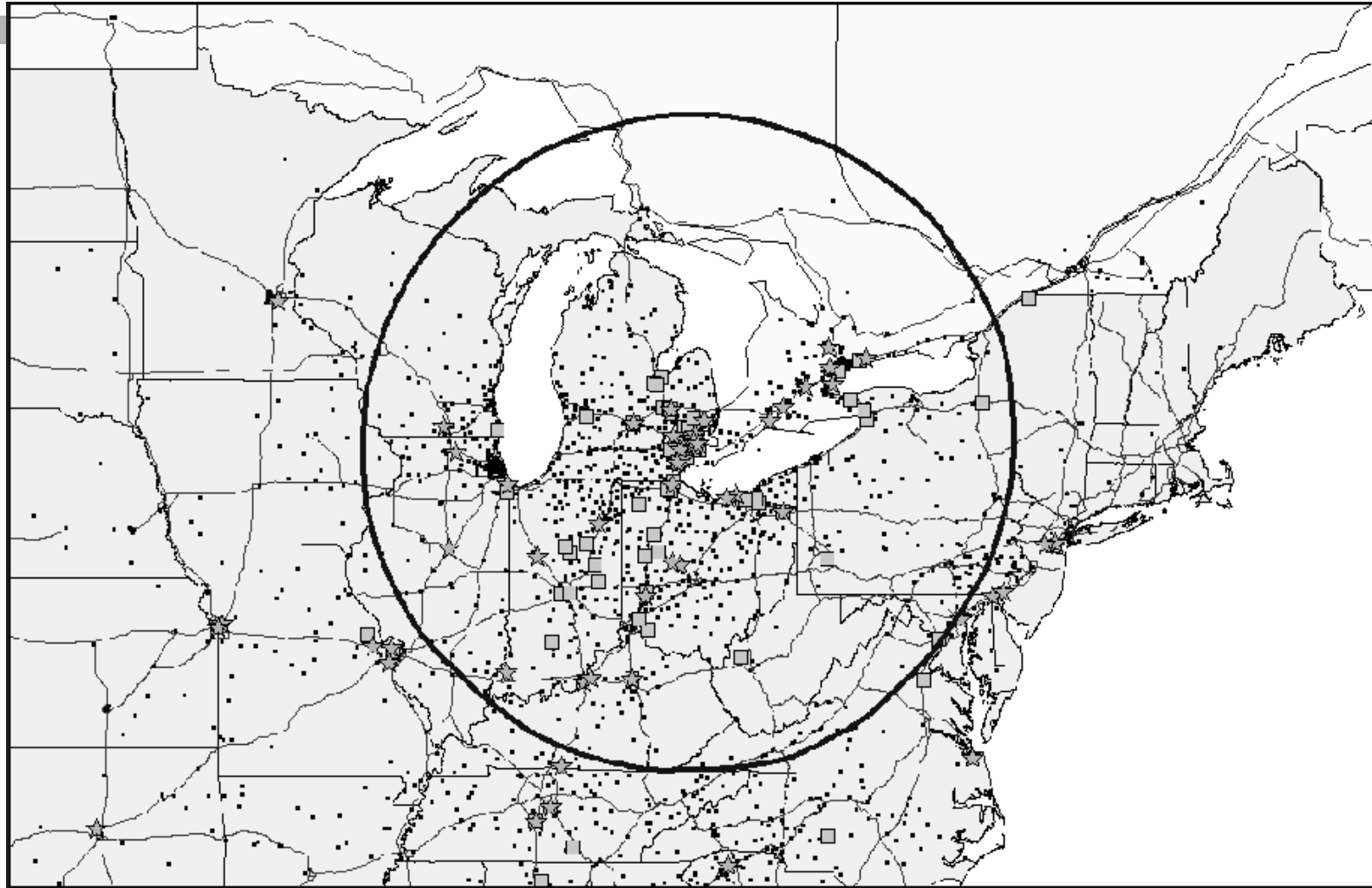
The Geography of the Auto Parts Industry: A 'Cluster' at What Scale?

- 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.



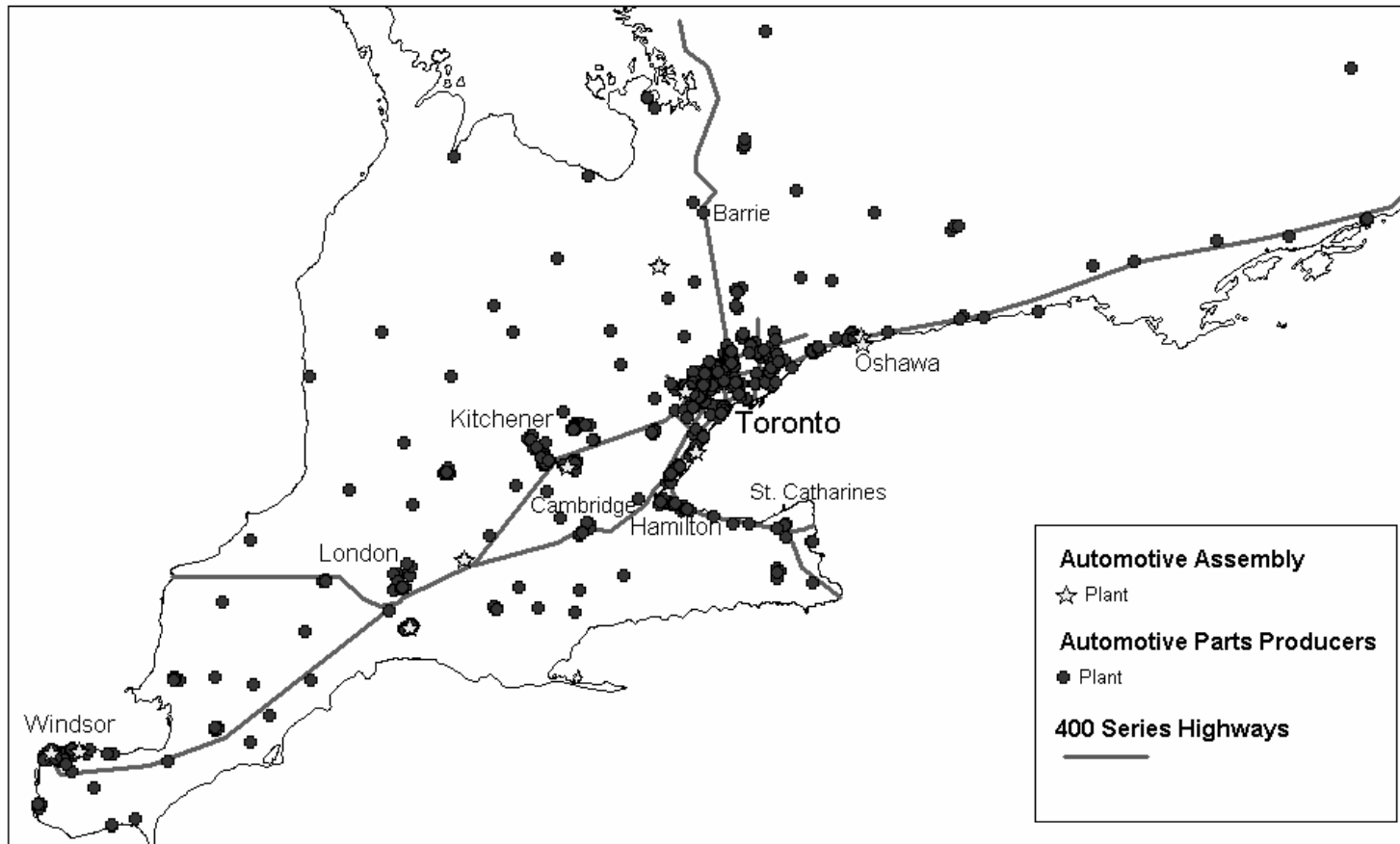
The Great Lakes Auto Cluster



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Source: Thomas Klier (2003)

All Automotive Parts Plants, 2002, Southwestern Ontario



Performance of the Automotive Parts Industry in Canada 1990-2002

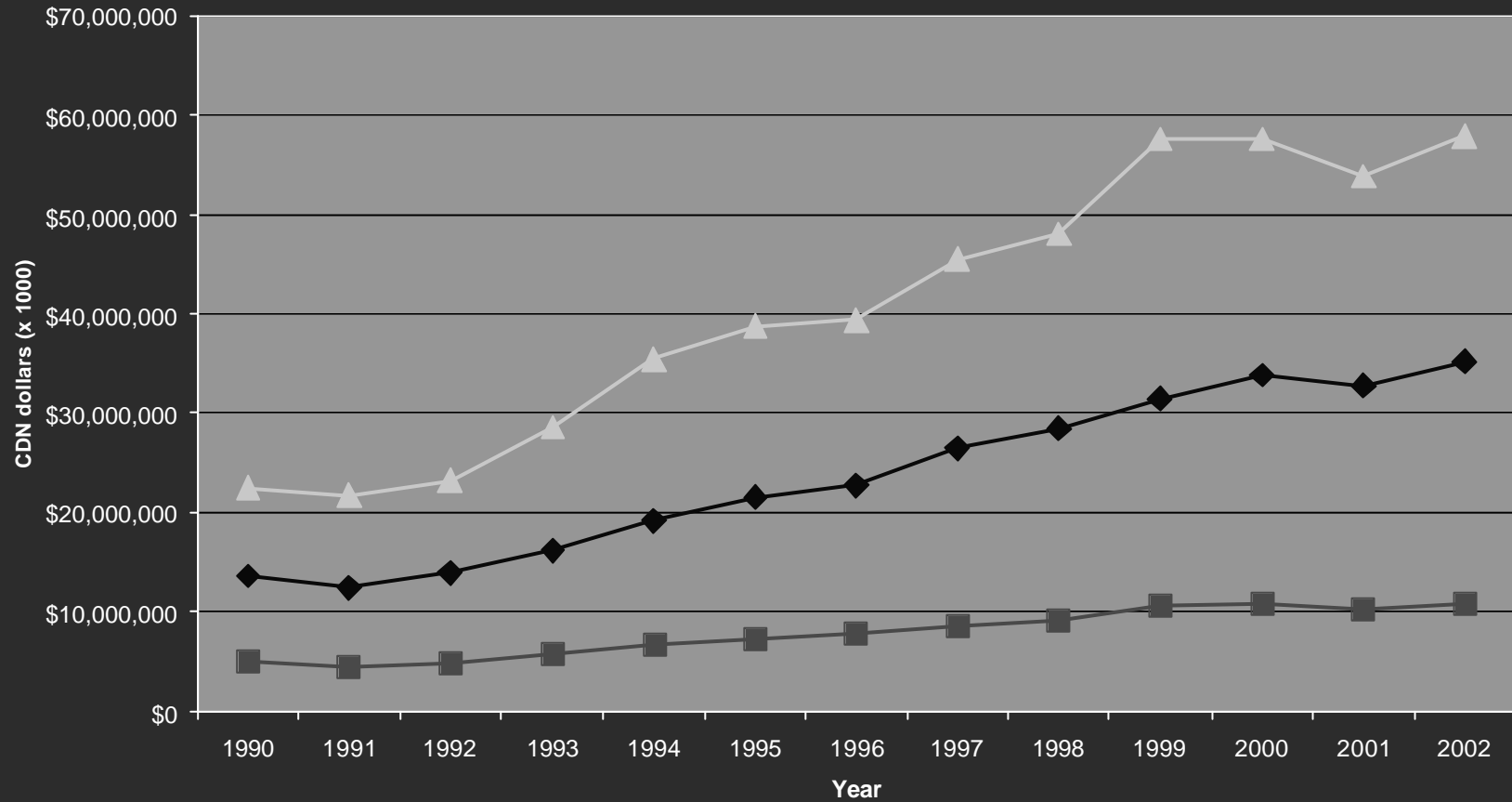
- southern Ontario's prosperity in the 1990s owed more to the automotive industry than to the rise of the 'New Economy'
- along with the vehicle assembly industry, the automotive parts industry in Canada prospered
- the impressive performance of the industry is reflected in almost all key economic indicators

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

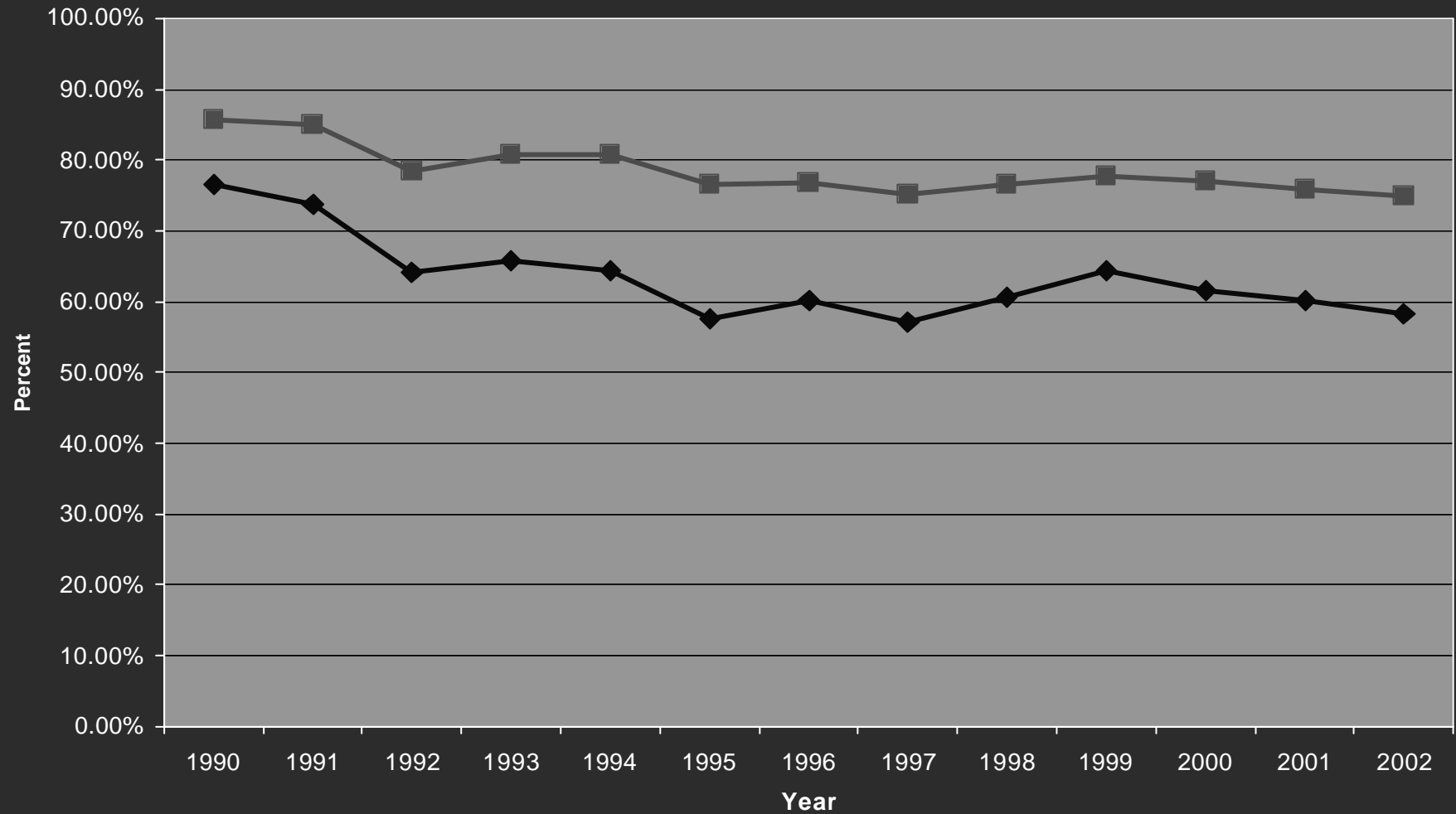
Value of Shipments, GDP (Value Added) and Domestic Market, Automotive Parts Industry, Canada, 1990-2002



Source: Statistics Canada

- ◆ Value of Shipments (current dollars)
- ▲ Domestic Market (shipments+imports-exports)
- GDP (constant 1997\$)

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

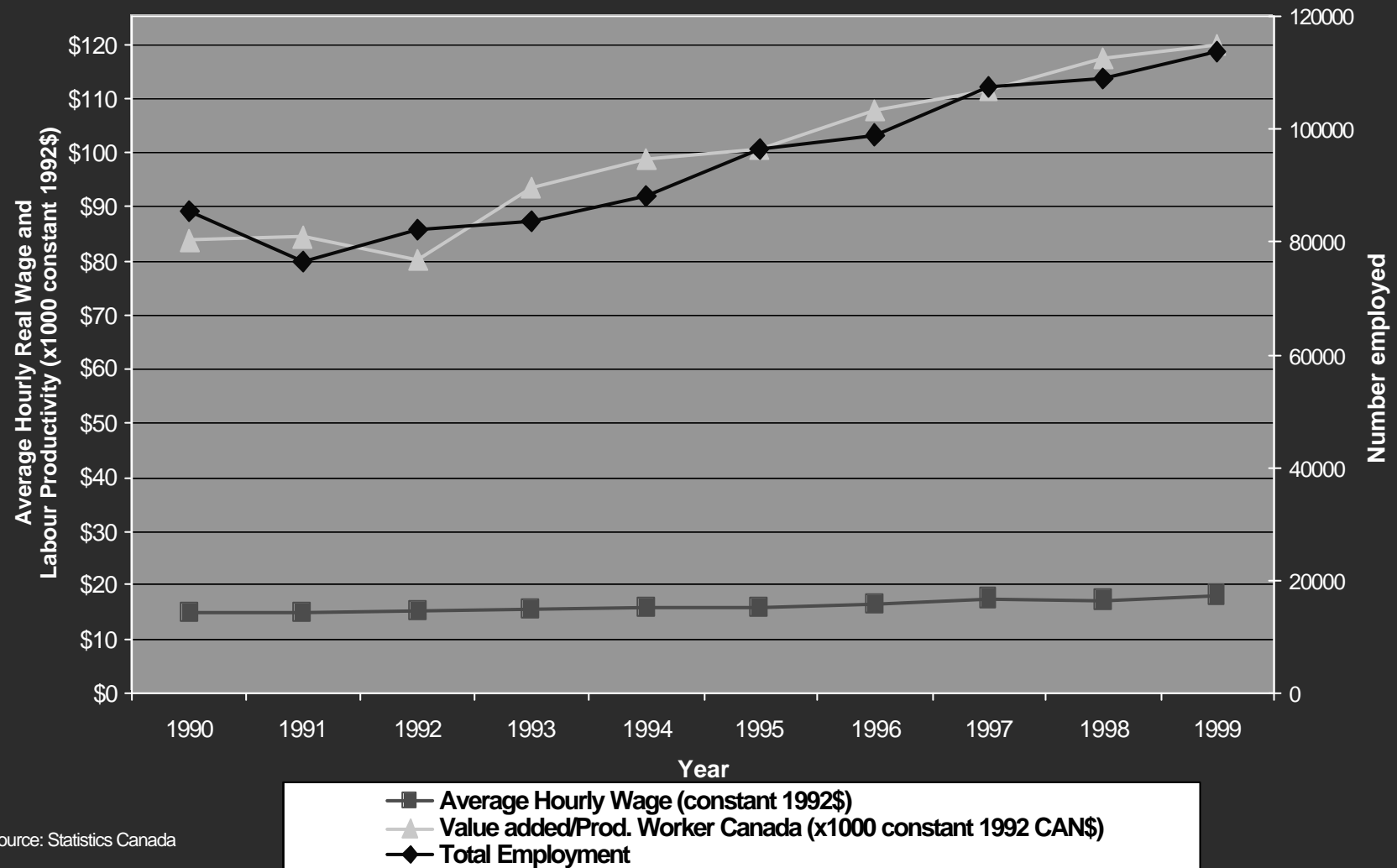


Source: Statistics Canada, special tabulation

◆ Export intensity ■ Import penetration

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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

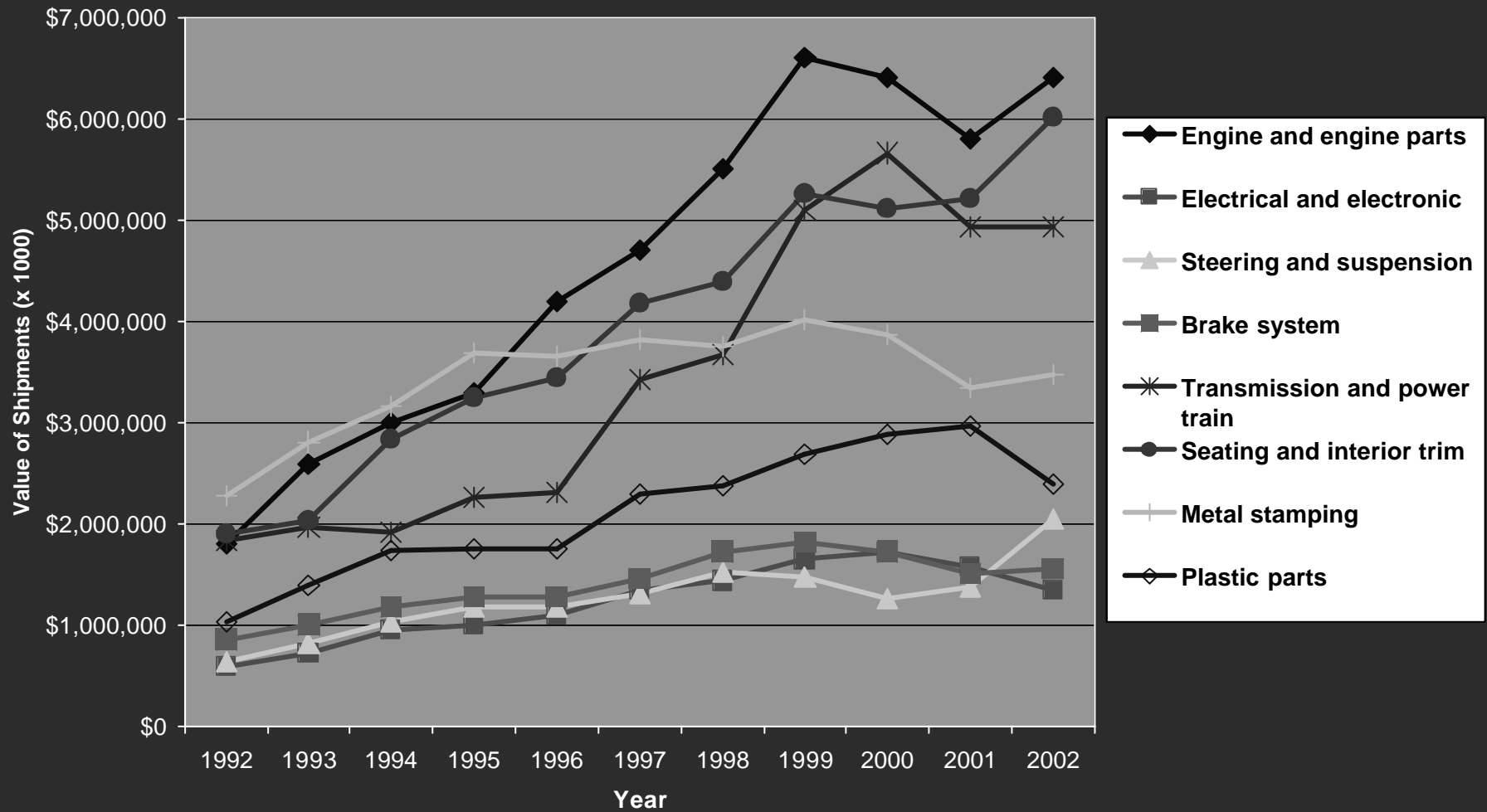
One Industry or Eight? Plants and Employment in 1999

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

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 s
- *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

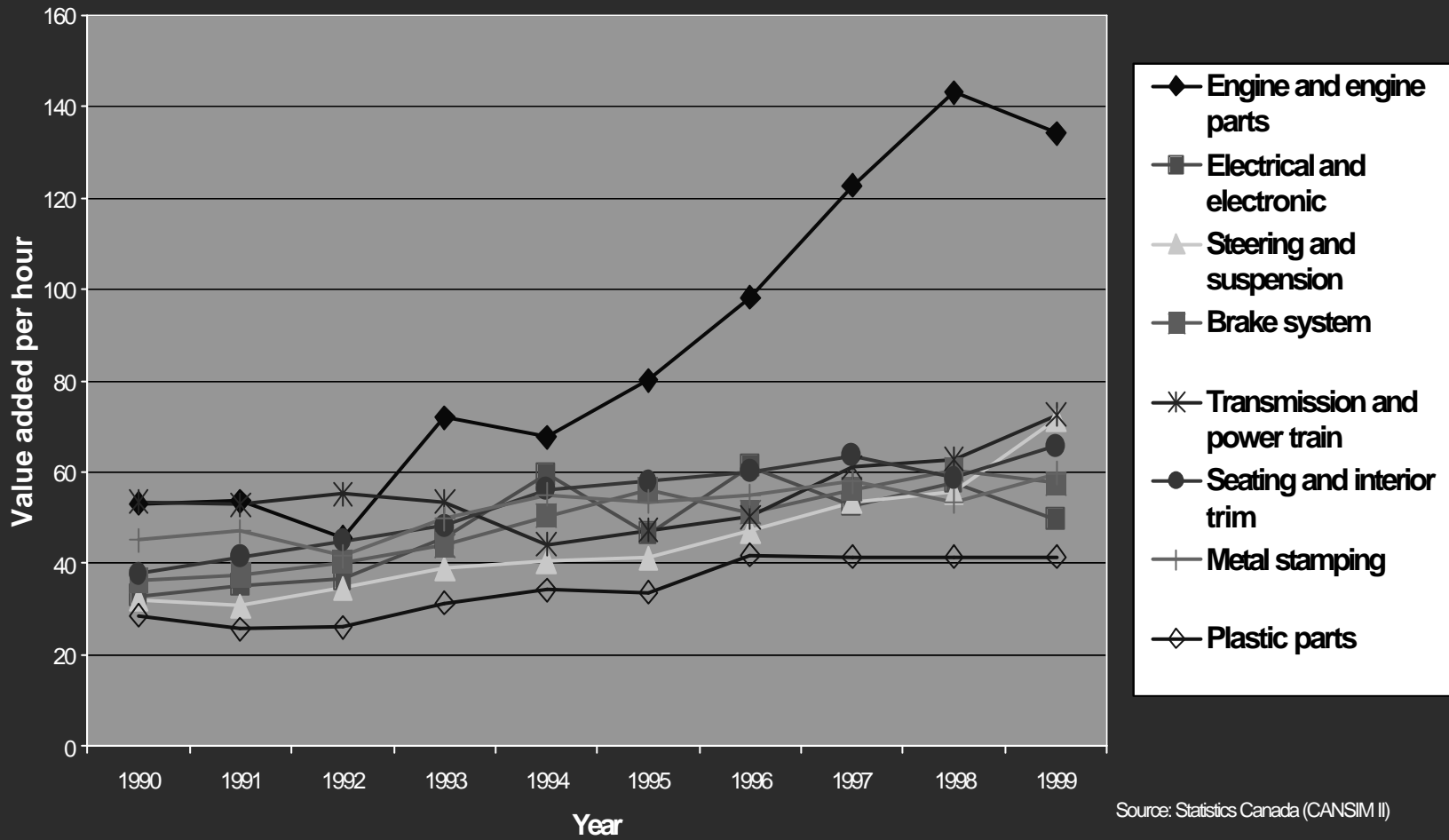


Source: Statistics Canada, special tabulation

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

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- ***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%

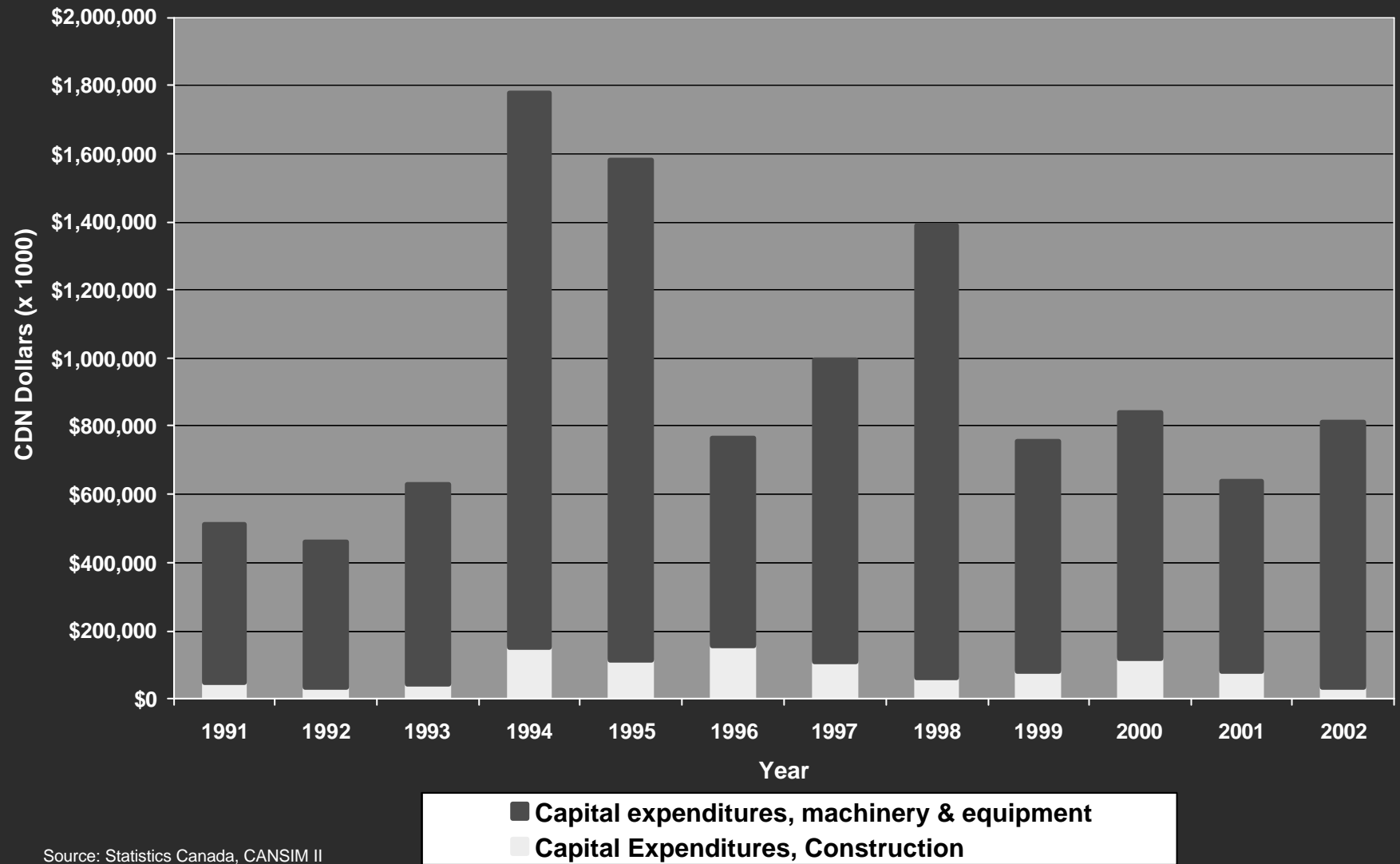
The Source of Growth: Low Value of the Dollar or Restructuring?

- 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



Source: Statistics Canada, CANSIM II

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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

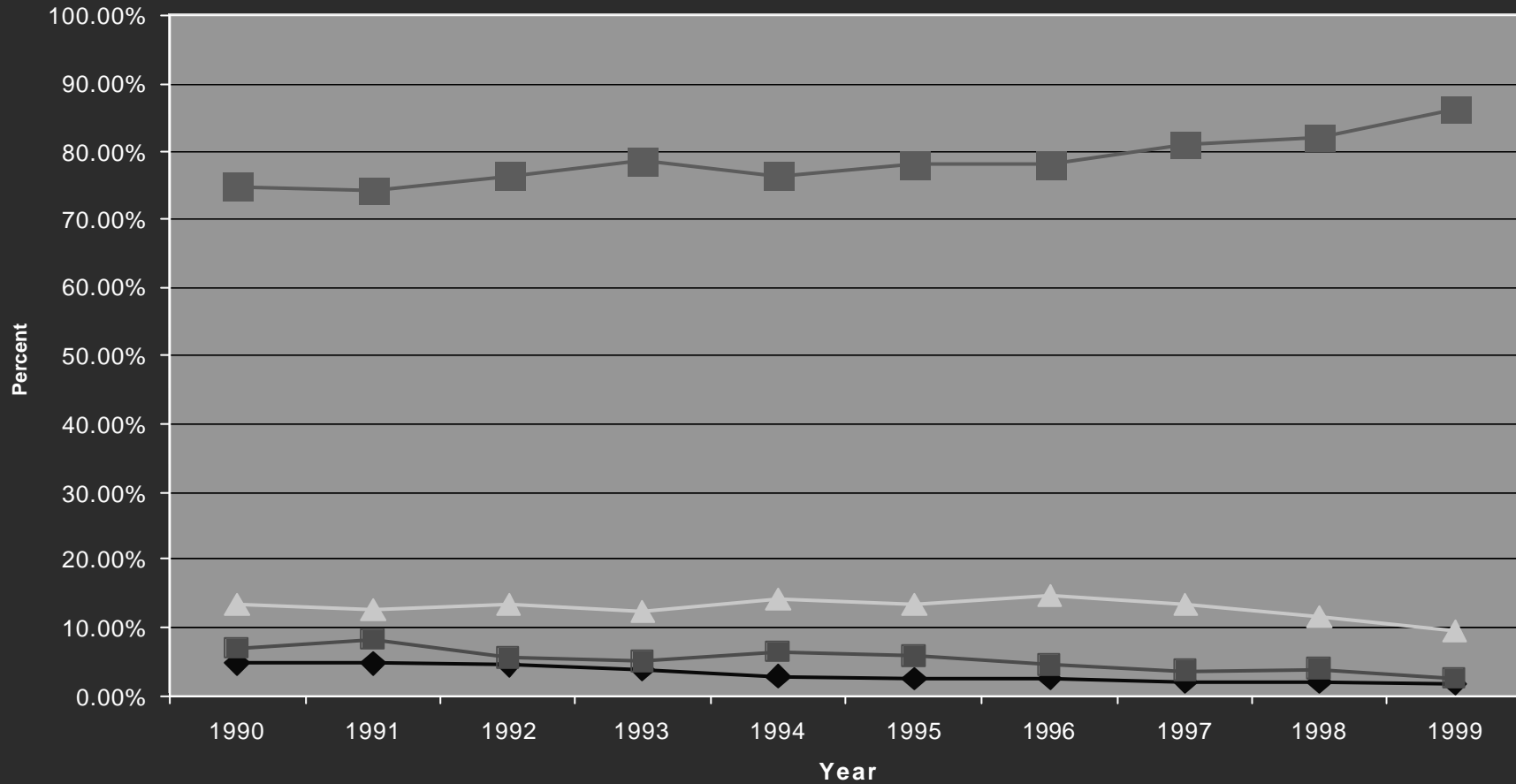
Restructuring of the Industry: Rationalization and Consolidation

- 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*

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

Percent of Total Value of Shipments by Size of Establishment, Automotive Parts Industry, Canada, 1990-99



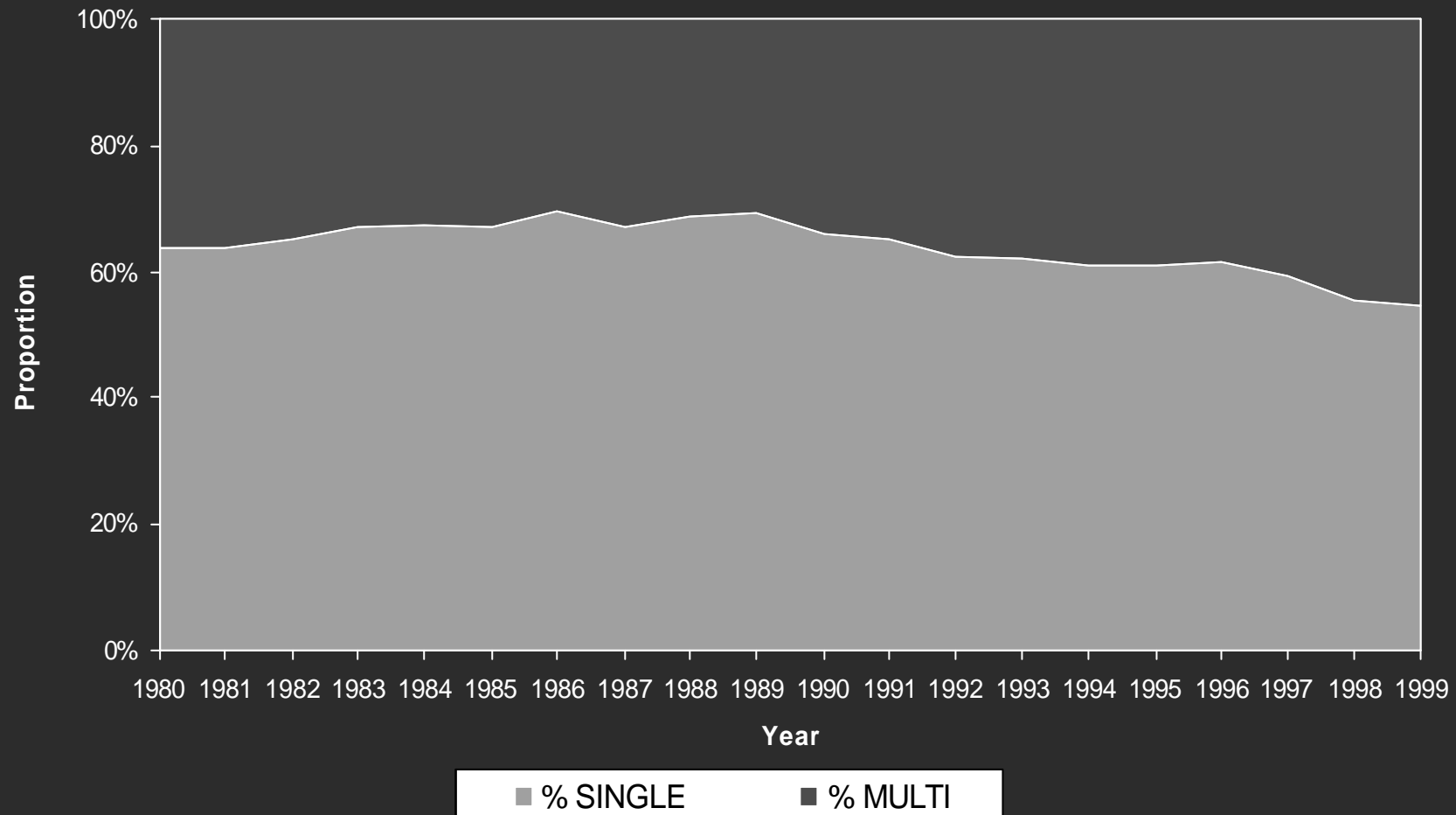
Source: Statistics Canada Special Tabulation

◆ 0-49 ■ 50-99 ▲ 100-199 ■ 200+

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

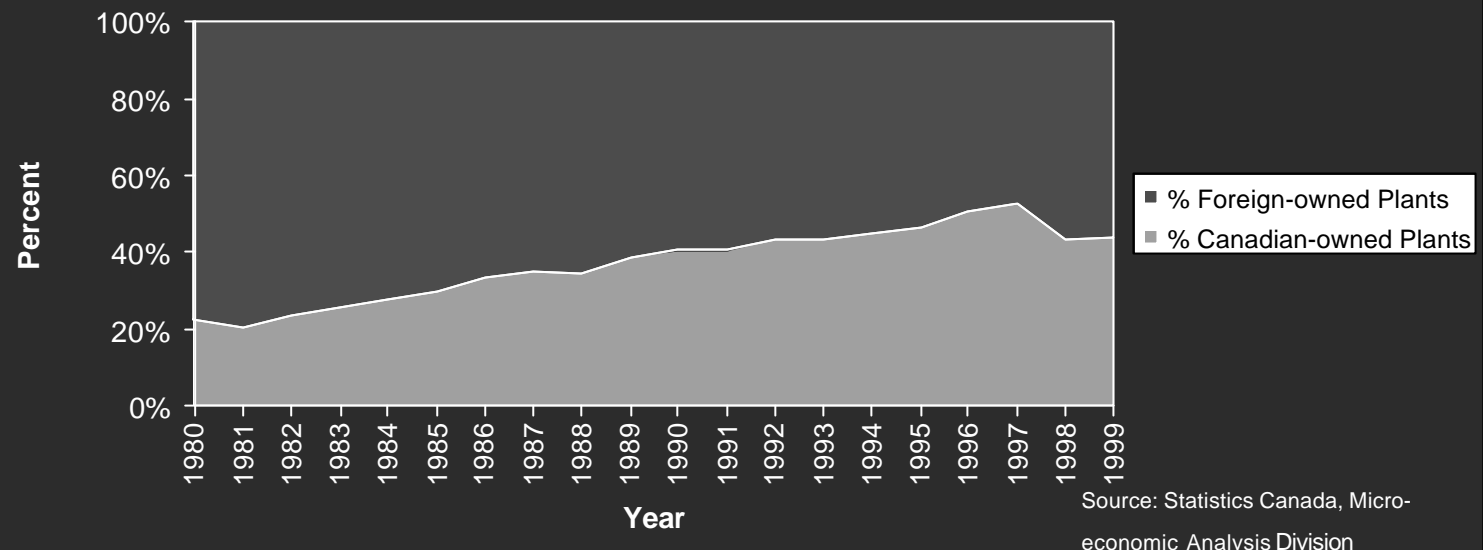


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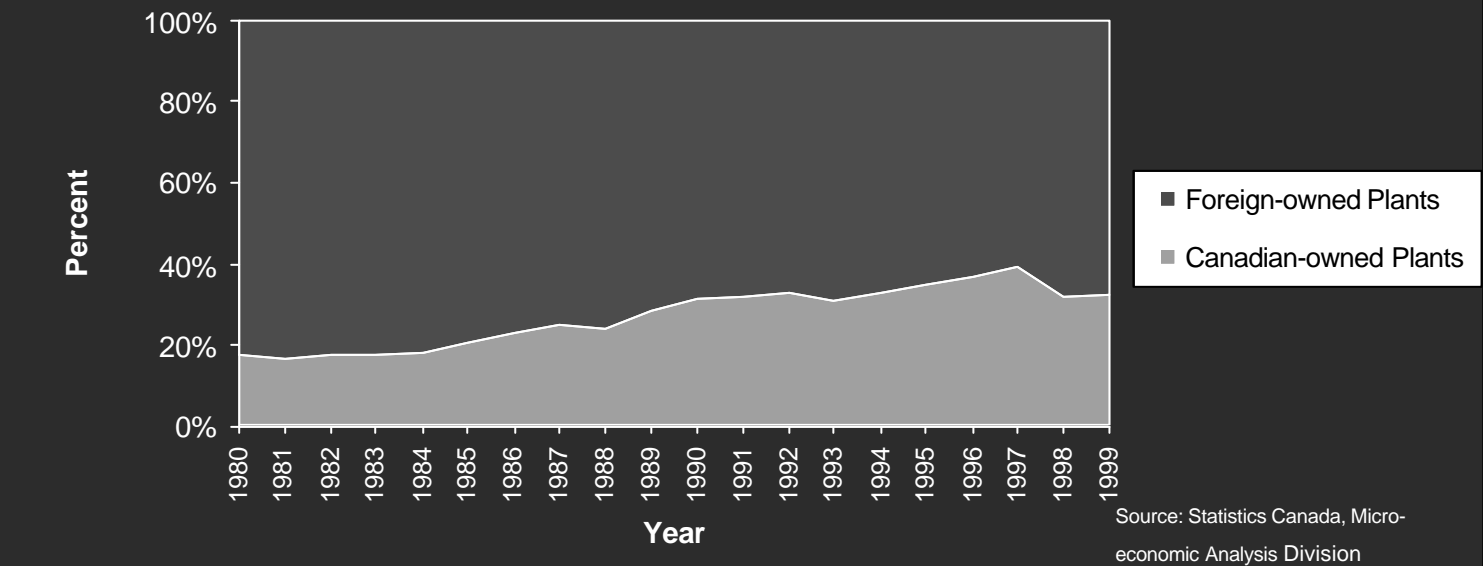
Restructuring of the Industry: 'Canadianization'

- 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

Total Employment, Automotive Parts Industry, Canada, 1980-99



Total Value of Shipments, Automotive Parts Industry, Canada, 1980-99



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

Supplier portal - Covisint

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

Acknowledgments:

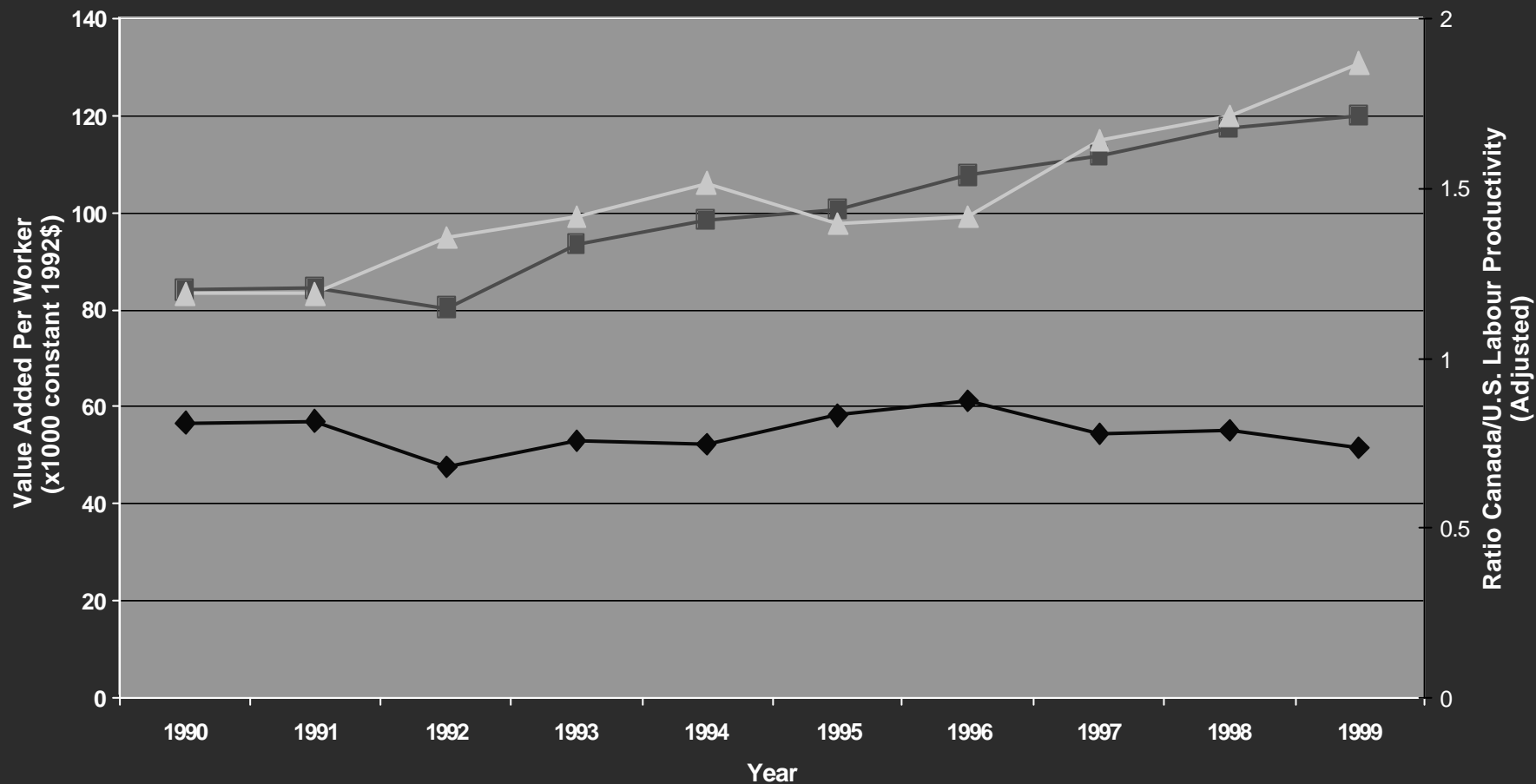
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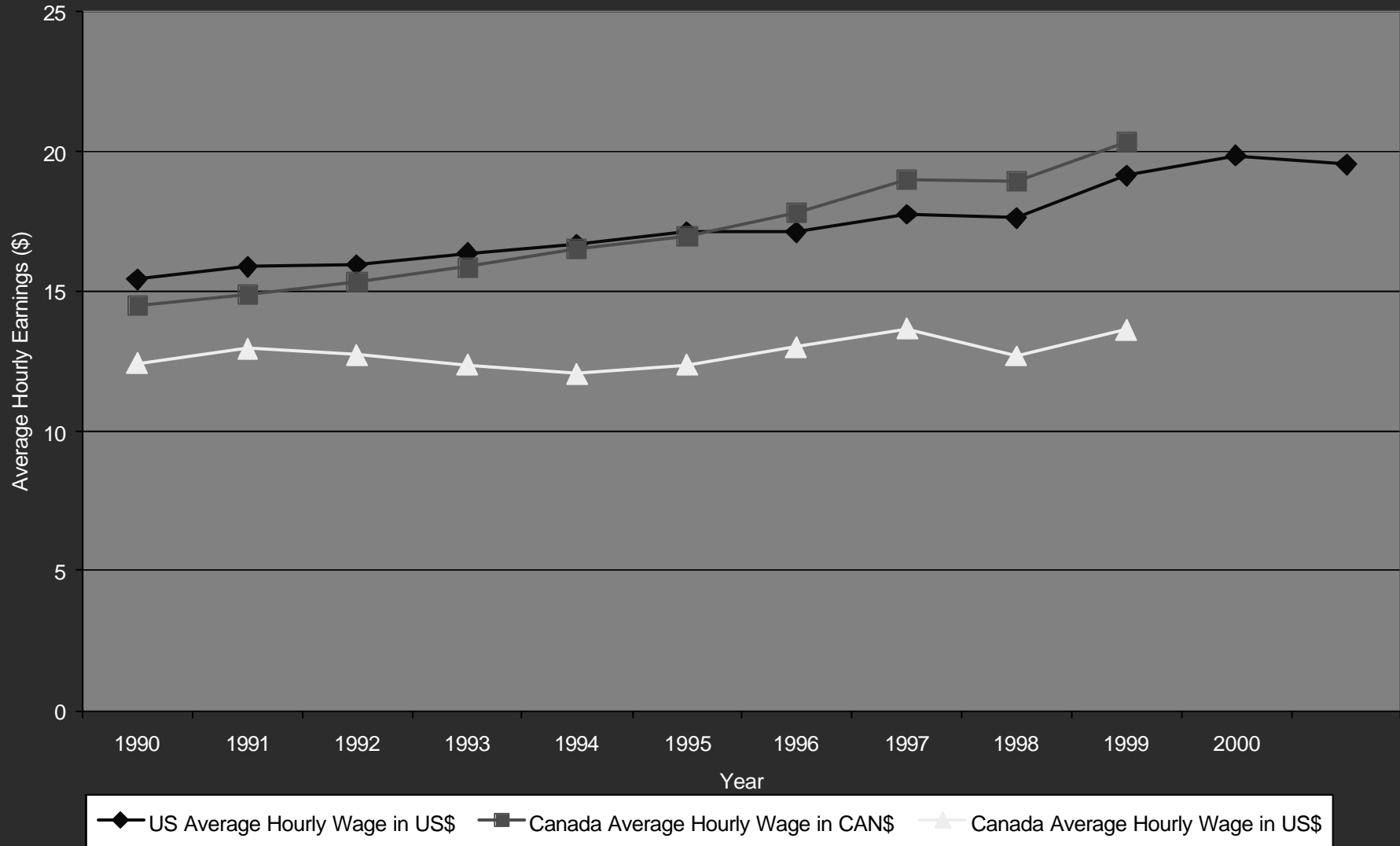
NCE Auto21 (Network of Centres of Excellence for the Automobile of the 21st. Century).

Thanks to Dr. John Baldwin (Director, Micro-economic Analysis Division, Statistics Canada) for help with some of the data analysis.

Comparison of Labour Productivity, Automotive Parts Industry, Canada and United States: 1990-1999

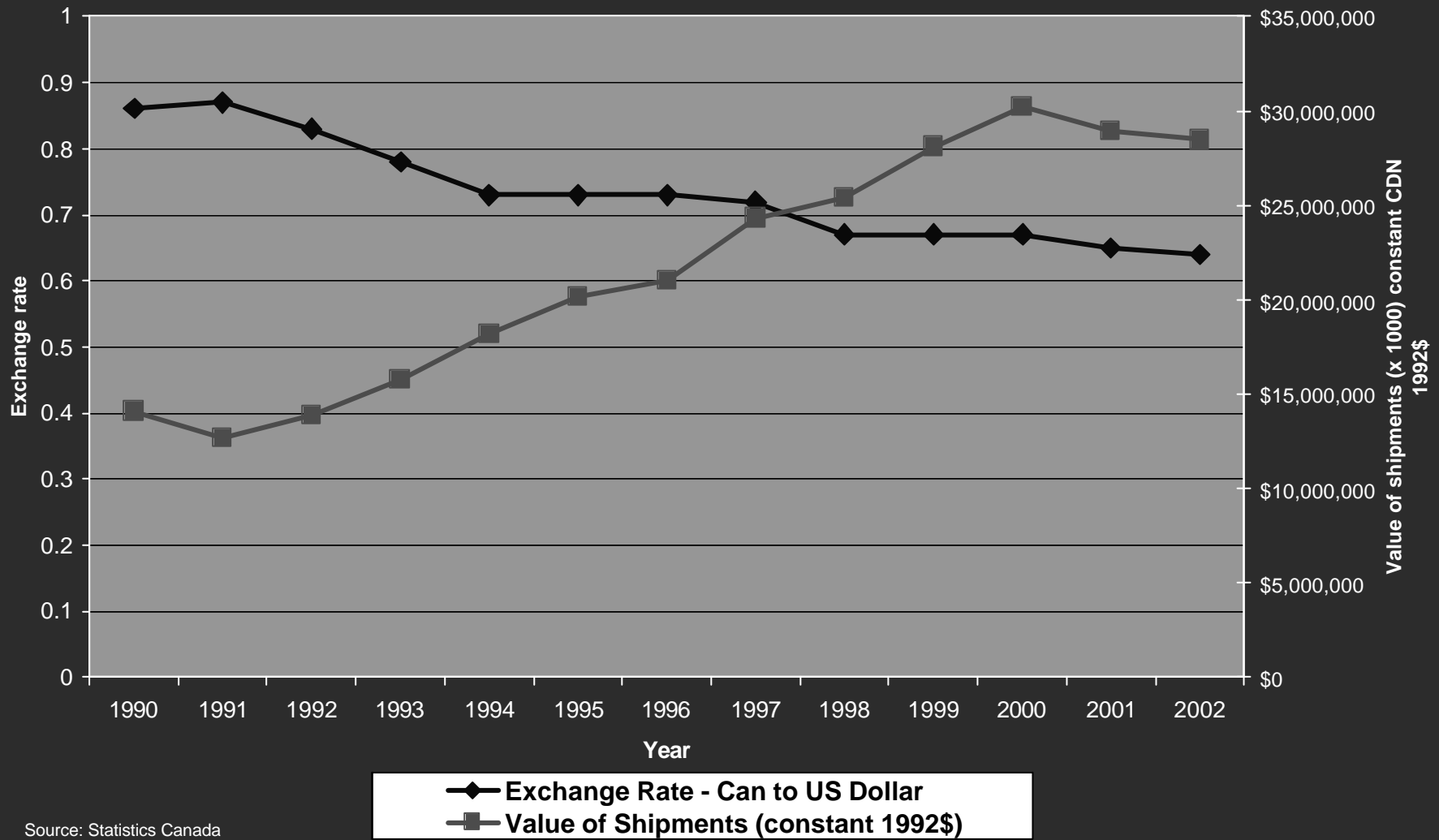


Average Hourly Earnings, Automotive Parts Industry, Canada and United States, 1990-2001



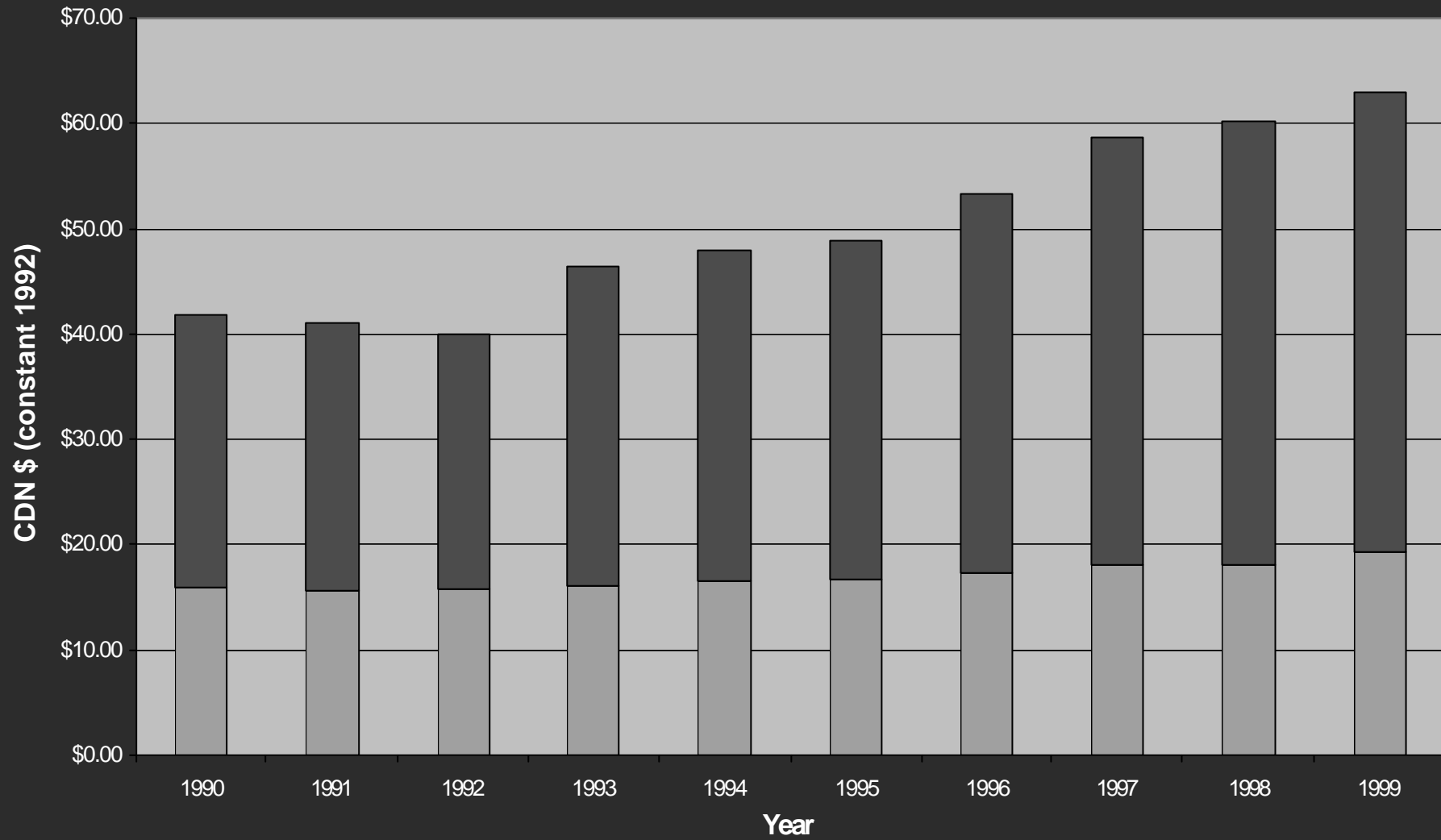
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Canadian/U.S. Dollar Exchange Rate and Value of Shipments, Automotive Parts Industry, Canada, 1990-2002



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Hourly Wage - "Profit" Trends, Automotive Parts Industry, Canada, 1990-99
(Wages + "Profits" = Value Added per Hour in Constant 1992\$)



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