The Task Force on Competitiveness, Productivity, and Economic Progress

Presentation to
Western Ontario Smart Growth Panel

by
James Milway, Executive Director

Owen Sound
November 14, 2002
This is a copy of the presentation given by Jim Milway in Owen Sound on November 14th 2002. It was part of a consultation organized by the Institute and the Western Ontario Smart Growth Panel.

This document provides an outline of the presentation and is incomplete without the accompanying oral commentary and discussion. It represents work in progress based on research conducted by the Institute for Competitiveness and Prosperity.

Much of the material is from the Institute’s two Working Papers and the 1st Annual Report which can be viewed at our Web site, www.competeprosper.ca

The Web site also provides more information on the Institute and the Task Force on Competitiveness, Productivity, & Economic Progress.

We ask that you acknowledge the Institute as the source if you use the material from this presentation.
Task Force Mandate

To measure and monitor Ontario’s competitiveness, productivity and economic progress compared to other provinces and the US states and to report to the public on a regular basis.

Long Term Aspiration

We aspire to have a significant influence in increasing Ontario’s competitiveness, productivity and capacity for innovation. This will help ensure continued success in the creation of good jobs, increased prosperity and a high quality of life for all Ontarians.

We will accomplish this by undertaking research, publishing breakthrough reports and proposing significant innovations in public policy which stimulate businesses, governments and educational institutions to take action.
Task Force Members

Roger L. Martin, Chairman
James L. Balsillie, Research in Motion
Timothy D. Dattels, Goldman Sachs
Lisa de Wilde
David Folk, Jefferson Partners
Suzanne Fortier, Queen’s University
Gordon Homer, Scotia Capital
David Johnston, University of Waterloo
David Keddie, National Compressed Air and National Drilling Systems
Mark Mullins, MSG Hedge Corporation
William Orovan, McMaster Medical School
Timothy H. Penner, Procter & Gamble
Belinda Stronach, Magna International
Daniel Trefler, University of Toronto
Our progress to date

• The Institute’s First Working Paper, *A View of Ontario: Ontario’s Clusters of Innovation* released April 29

• Stakeholder consultations with several jurisdictions and industry groups


• The Task Force’s First Annual Report, *Closing the Prosperity Gap* released November 5
Summary of Working Papers

GDP per capita is a key indicator of economic prosperity

- Ontario is a leader in Canada but just one of the pack in North America

*Productivity drives GDP per capita*

*Clusters of traded industries increase competitiveness*

*Ontario’s Clusters of Innovation*
## GDP per Capita at Purchasing Power Parity (PPP) in CDN$ (2000)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>GDP per capita at PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United States</td>
<td>$43,099</td>
</tr>
<tr>
<td>2</td>
<td>Norway</td>
<td>$36,501</td>
</tr>
<tr>
<td>3</td>
<td>Switzerland</td>
<td>$36,467</td>
</tr>
<tr>
<td>4</td>
<td>Ireland</td>
<td>$35,301</td>
</tr>
<tr>
<td>5</td>
<td>Denmark</td>
<td>$35,164</td>
</tr>
<tr>
<td>6</td>
<td>Canada</td>
<td>$33,878</td>
</tr>
<tr>
<td>7</td>
<td>Netherlands</td>
<td>$33,682</td>
</tr>
<tr>
<td>8</td>
<td>Austria</td>
<td>$32,671</td>
</tr>
</tbody>
</table>

Note: Only countries with population of significant size. If all countries were included, Canada would rank 8th.

Source: OECD Main Accounts, National Data; CANSIM
Ontario versus “The Four Motors”

GDP Per Capita, 1999 (PPP)

Source: Statistics Canada; Eurostat
Ontario Fares Well Among Leading Nations

**GDP per Capita at Purchasing Power Parity (PPP) in CDN$ (2000)**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>1</td>
<td>United States</td>
<td>$43,009</td>
</tr>
<tr>
<td></td>
<td>Ontario</td>
<td>$36,808</td>
</tr>
<tr>
<td>2</td>
<td>Norway</td>
<td>$36,501</td>
</tr>
<tr>
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<td>Switzerland</td>
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<td>8</td>
<td>Austria</td>
<td>$32,671</td>
</tr>
</tbody>
</table>

Source: OECD Main Accounts, National Data; CANSIM; Institute for Competitiveness & Prosperity analysis
Select States and Provinces for Comparison

States and Provinces with Population over 6 Million

- California: 33.9
- Texas: 20.9
- New York: 19.0
- Florida: 16.0
- Illinois: 12.4
- Pennsylvania: 12.3
- Ontario: 11.9
- Ohio: 11.4
- Michigan: 9.9
- New Jersey: 8.4
- Georgia: 8.2
- North Carolina: 8.0
- Quebec: 7.4
- Virginia: 7.1
- Massachusetts: 6.3
- Indiana: 6.1

Source: Statistics Canada (Census 2001); US Census Bureau (Census 2000)
Ontario Ranks 14th Among its Peer Group

GDP per Capita for Select States and Province (2000) (CDN$)

Massachusetts: $54,302
New Jersey: $52,213
New York: $50,960
California: $48,034
Illinois: $45,527
Virginia: $44,667
Georgia: $43,771
Texas: $43,073
median: $42,713
North Carolina: $42,352
Pennsylvania: $39,803
Ohio: $39,715
Michigan: $39,615
Indiana: $38,246
Ontario: $36,808
Florida: $35,742
Quebec: $30,313

Note: OECD Main Accounts, National Data; CSNSIM II; US Department of Commerce, BEA (June 2002); Institute for Competitiveness and Prosperity Analysis
The Prosperity Gap is Widening

Real GDP per Capita

Source: OECD; Statistics Canada; US Department of Commerce, BEA; Institute for Competitiveness & Prosperity analysis
Note: 1980 data used for Ontario and Quebec based on 1981 results

<table>
<thead>
<tr>
<th>Year</th>
<th>Ontario Rank</th>
<th>Performance Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>11th</td>
<td>$841</td>
</tr>
<tr>
<td>1985</td>
<td>11th</td>
<td>$1,792</td>
</tr>
<tr>
<td>1990</td>
<td>14th</td>
<td>$2,782</td>
</tr>
<tr>
<td>1995</td>
<td>14th</td>
<td>$2,793</td>
</tr>
<tr>
<td>2000</td>
<td>14th</td>
<td>$5,905</td>
</tr>
</tbody>
</table>

Leader (+50%), Median (+54%), Ontario (+36%)
Summary of Working Papers

GDP per capita is a key indicator of economic prosperity

Productivity drives GDP per capita

Clusters of traded industries increase competitiveness

Ontario’s Clusters of Innovation
Component Parts of GDP per Capita

GDP Per Capita:

\[
\frac{\text{Potential labour force}}{\text{Population}} \times \frac{\text{Jobs}}{\text{Potential labour force}} \times \frac{\text{Hrs Worked}}{\text{Jobs}} \times \frac{\text{GDP}}{\text{Hrs Worked}}
\]

Profile  Utilization  Intensity  Productivity

- Participation
- Employment
- Cluster mix
- Cluster content
- Urbanization
- Effectiveness

Productivity Key to Prosperity Gap

$Per Capita, 2000

Median GDP per capita
Profile Participation Employment Intensity Mix of clusters Urbanization Effectiveness
Profile Utilization Intensity Productivity

Prosperity Gap: $5,905 or 13.8% of median GDP/capita

Source: Statistics Canada, Bureau of Economic Analysis, Institute for Competitiveness and Prosperity
Note: Median comprises 16 North American jurisdictions with populations that exceed 6 million
Urbanization and Productivity

Per cent of Population in Urban Areas vs. Labour Productivity
(1997, Ontario labour productivity = 100)

Impact of Ontario’s Low Urbanization

Per cent of Population in Urban Areas vs. Labour Productivity
(1997, Ontario labour productivity = 100)

A shift to median urbanization improves productivity by 8.7% - this translates directly to GDP per capita

Summary of Working Papers

GDP per capita is a key indicator of economic prosperity

Productivity drives GDP per capita

Clusters of traded industries increase competitiveness

Ontario’s Clusters of Innovation
# Mix of Clusters: US Clusters

## Identifying 41 Clusters of Traded Industries

### Upstream Materials and Products
- Metals and Materials
  - Construction Materials
  - Metal Manufacturing
- Forest Products
  - Forest Products
- Petroleum/Chemicals
  - Oil and Gas
  - Chemical Products
  - Plastics
- Semiconductors/Computer
  - Information Technology

### Industrial and Supporting Functions
- Multiple Business
  - Education and Knowledge Creation
  - Business Services
  - Heavy Machinery
  - Financial Services
  - Motor Driven Products
  - Prefabricated Enclosures
  - Production Technology
  - Analytical Instruments
  - Heavy Construction Services
- Transportation and Logistics
  - Automotive
  - Distribution Services
  - Transportation and Logistics
- Power
  - Power Generation
  - Power Transmission and Distribution
- Office
  - Publishing and Printing
- Telecommunications
  - Communications Equipment
- Defense
  - Aerospace Engines
  - Aerospace Vehicles and Defense

### Final Consumption Goods and Services
- Food/Beverages
  - Agricultural Products
  - Processed Foods
  - Fishing and Fishing Products
- Housing/Household
  - Building Fixtures, Equipment & Services
  - Lighting and Electrical Equipment
  - Furniture
- Textiles/Apparel
  - Textiles
  - Apparel
  - Footwear
- Health Care
  - Medical Devices
  - Pharmaceuticals and Biotechnology
- Personal
  - Leather and Sporting Goods
  - Jewelry and Precious Metals
  - Tobacco
- Entertainment/Leisure
  - Entertainment
  - Hospitality and Tourism

The Economics of Traded Clusters and Local Industries

Share of Employment

- Traded Clusters: 32%
- Local Industries: 67%
- Natural Resources: 1%

Share of Income

- Traded Clusters: 43%
- Local Industries: 56%
- Natural Resources: 1%

Average Wage ($US thousands)

- Traded Clusters: $42
- Local Industries: $26
- Natural Resources: $31

Patents per 10,000 employees

- Traded Clusters: 20.48
- Local Industries: 1.38
- Natural Resources: 6.40

Distribution of Traded Cluster Employment

Share of Employment in Traded Clusters

US
- Traded Clusters: 32%
- Local Industries: 67%
- Natural Resources: 1%

Ontario
- Traded Clusters: 40%
- Local Industries: 59%
- Natural Resources: 1%

London
- Traded Clusters: 36%
- Local Industries: 63%
- Natural Resources: 1%

Windsor
- Traded Clusters: 47%
- Local Industries: 52%
- Natural Resources: 1%

Note: US Statistics are for 1999; Canadian Statistics are for 2000.
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Dynamics of a Cluster: Pressure and Support


- The underlying inputs firms draw on in competing
  - natural (physical) resources
  - human resources
  - capital resources
  - physical infrastructure
  - administrative infrastructure
  - information infrastructure
  - scientific and technological infrastructure

- The context shaping the types of strategies employed and the nature of local rivalry

- The availability and quality of local suppliers and related industries

- The nature of home demand for products and services

Competitive vs. Uncompetitive Clusters

Competitive Clusters:
May rely on any part of the full diamond

Uncompetitive Clusters:
Usually only rely on factor conditions

Cluster Overlap in the US Economy

Note: Clusters with borders or identical colors/shading except gray have at least 20% overlap of industries by number in both directions.

Summary of Working Papers

GDP per capita is a key indicator of economic prosperity

Productivity drives GDP per capita

Clusters of traded industries increase competitiveness

Ontario’s Clusters of Innovation
  • We have strength and diversity
Ontario and Traded Clusters

Share of Employment in Traded Clusters
Canada and the US, and Select States and Provinces

Note: US Statistics are for 1999; Canadian Statistics are for 2000
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity analysis
A First Look at Ontario’s Clusters

Traded Cluster (Rank in Ontario)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Services</td>
<td>1</td>
</tr>
<tr>
<td>Financial Services</td>
<td>2</td>
</tr>
<tr>
<td>Automotive</td>
<td>3</td>
</tr>
<tr>
<td>Education and Knowledge Creation</td>
<td>4</td>
</tr>
<tr>
<td>Hospitality and Tourism</td>
<td>5</td>
</tr>
<tr>
<td>Metal Manufacturing</td>
<td>6</td>
</tr>
<tr>
<td>Transportation and Logistics</td>
<td>7</td>
</tr>
<tr>
<td>Distribution Services</td>
<td>8</td>
</tr>
<tr>
<td>Heavy Construction Services</td>
<td>9</td>
</tr>
<tr>
<td>Publishing and Printing</td>
<td>10</td>
</tr>
<tr>
<td>Processed Food</td>
<td>11</td>
</tr>
<tr>
<td>Entertainment</td>
<td>12</td>
</tr>
<tr>
<td>Building Fixtures, Equipment and Services</td>
<td>13</td>
</tr>
<tr>
<td>Production Technology</td>
<td>14</td>
</tr>
<tr>
<td>Jewelry and Precious Metals</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity analysis
Ontario’s Leading Clusters Relative to Michigan

Traded Cluster (Rank in Ontario, Rank in Michigan)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Ontario Rank</th>
<th>Michigan Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Services</td>
<td>1, 2</td>
<td>1, 2</td>
</tr>
<tr>
<td>Financial Services</td>
<td>2, 4</td>
<td>2, 4</td>
</tr>
<tr>
<td>Automotive</td>
<td>3, 1</td>
<td>3, 1</td>
</tr>
<tr>
<td>Education and Knowledge Creation</td>
<td>4, 9</td>
<td>4, 9</td>
</tr>
<tr>
<td>Hospitality and Tourism</td>
<td>5, 6</td>
<td>5, 6</td>
</tr>
<tr>
<td>Metal Manufacturing</td>
<td>6, 3</td>
<td>6, 3</td>
</tr>
<tr>
<td>Transportation and Logistics</td>
<td>7, 10</td>
<td>7, 10</td>
</tr>
<tr>
<td>Distribution Services</td>
<td>8, 11</td>
<td>8, 11</td>
</tr>
<tr>
<td>Heavy Construction Services</td>
<td>9, 7</td>
<td>9, 7</td>
</tr>
<tr>
<td>Publishing and Printing</td>
<td>10, 13</td>
<td>10, 13</td>
</tr>
<tr>
<td>Plastics</td>
<td>19, 5</td>
<td>19, 5</td>
</tr>
</tbody>
</table>

Note: US Statistics are for 1999; Canadian Statistics are for 2000
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
# London’s Leading Clusters

## Leading Clusters by Share of Traded Cluster Employment (2000)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial Services</td>
<td>15,130</td>
</tr>
<tr>
<td>2</td>
<td>Automotive</td>
<td>9,205</td>
</tr>
<tr>
<td>3</td>
<td>Education and Knowledge Creation</td>
<td>7,680</td>
</tr>
<tr>
<td>4</td>
<td>Transportation and Logistics</td>
<td>7,616</td>
</tr>
<tr>
<td>5</td>
<td>Business Services</td>
<td>5,434</td>
</tr>
<tr>
<td>6</td>
<td>Processed Foods</td>
<td>3,972</td>
</tr>
<tr>
<td>7</td>
<td>Metal Manufacturing</td>
<td>3,333</td>
</tr>
<tr>
<td>8</td>
<td>Distribution Services</td>
<td>2,656</td>
</tr>
<tr>
<td>9</td>
<td>Hospitality and Tourism</td>
<td>2,638</td>
</tr>
<tr>
<td>10</td>
<td>Heavy Construction Services</td>
<td>2,574</td>
</tr>
</tbody>
</table>

Note: * indicates that the location quotient is a Canadian quotient. The other quotients are North American quotients.

Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
## Windsor’s Leading Clusters

### Leading Clusters by Share of Traded Cluster Employment (2000)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Automotive</td>
<td>21,999</td>
<td>11.29</td>
</tr>
<tr>
<td>2 Metal Manufacturing</td>
<td>6,969</td>
<td>3.43</td>
</tr>
<tr>
<td>3 Hospitality and Tourism</td>
<td>4,985</td>
<td>1.35</td>
</tr>
<tr>
<td>4 Financial Services</td>
<td>6,026</td>
<td>1.34</td>
</tr>
<tr>
<td>5 Production Technology</td>
<td>4,056</td>
<td>4.11</td>
</tr>
<tr>
<td>6 Education and Knowledge Creation</td>
<td>3,985</td>
<td>1.23</td>
</tr>
<tr>
<td>7 Business Services</td>
<td>3,720</td>
<td>0.59</td>
</tr>
<tr>
<td>8 Heavy Machinery</td>
<td>2,266</td>
<td>3.62</td>
</tr>
<tr>
<td>9 Transportation and Logistics</td>
<td>2,097</td>
<td>0.88</td>
</tr>
<tr>
<td>10 Heavy Construction Services</td>
<td>1,993</td>
<td>0.74</td>
</tr>
</tbody>
</table>

Note: * indicates that the location quotient is a Canadian quotient. The other quotients are North American quotients.

Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
The Location Quotient (LQ) Defined

- The location quotient is a ratio measure of the concentration for a cluster in a particular location relative to the North American average.
- An LQ >1 indicates a higher than average concentration in the particular location.
- London’s cluster LQs are calculated as follows:

\[
LQ = \frac{\left(\frac{\text{Employment in the Cluster in London}}{\text{Total London Employment}}\right)}{\left(\frac{\text{Total Employment in the Cluster in North America}}{\text{Total North American Employment}}\right)}
\]
### The Automotive Cluster

#### Leading CMA’s by Traded Cluster Employment (2000)

<table>
<thead>
<tr>
<th>Ontario CMA</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Toronto</td>
<td>53,979</td>
<td>1.66</td>
</tr>
<tr>
<td>2  Oshawa</td>
<td>22,873</td>
<td>12.82</td>
</tr>
<tr>
<td>3  Windsor</td>
<td>21,999</td>
<td>11.29</td>
</tr>
<tr>
<td>4  Kitchener</td>
<td>10,217</td>
<td>3.53</td>
</tr>
<tr>
<td>5  London</td>
<td>9,205</td>
<td>3.36</td>
</tr>
<tr>
<td>6  St. Catharines</td>
<td>7,954</td>
<td>3.28</td>
</tr>
<tr>
<td>7  Hamilton</td>
<td>4,525</td>
<td>0.96</td>
</tr>
<tr>
<td>8  Ottawa</td>
<td>1,431</td>
<td>0.22</td>
</tr>
<tr>
<td>9  Sudbury</td>
<td>329</td>
<td>0.34</td>
</tr>
<tr>
<td>10 Thunder Bay</td>
<td>277</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Note: Location quotients are Canadian
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
Components of the Automotive Cluster

- Related Vehicles
- Motor Vehicles
- Automotive Parts
- Flat Glass
- Forgings & Stampings
- Related Equipment
- Production Equipment
- Related Parts
- Other Engines
- Related Machinery
- Metal Processing

14 Narrow Sub Cluster Industries
18 Broad Sub Cluster Industries

### The Financial Services Cluster

#### Leading CMA’s by Traded Cluster Employment (2000)

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<thead>
<tr>
<th>Ontario CMA</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Toronto</td>
<td>167,241</td>
<td>2.27</td>
</tr>
<tr>
<td>2 Ottawa</td>
<td>15,633</td>
<td>1.09</td>
</tr>
<tr>
<td>3 London</td>
<td>15,130</td>
<td>2.40</td>
</tr>
<tr>
<td>4 Hamilton</td>
<td>11,027</td>
<td>1.14</td>
</tr>
<tr>
<td>5 Kitchener</td>
<td>7,960</td>
<td>1.22</td>
</tr>
<tr>
<td>6 Windsor</td>
<td>6,026</td>
<td>1.34</td>
</tr>
<tr>
<td>7 St. Catharines</td>
<td>4,319</td>
<td>0.81</td>
</tr>
<tr>
<td>8 Oshawa</td>
<td>2,952</td>
<td>0.72</td>
</tr>
<tr>
<td>9 Sudbury</td>
<td>1,509</td>
<td>0.69</td>
</tr>
<tr>
<td>10 Thunder Bay</td>
<td>1,026</td>
<td>0.57</td>
</tr>
</tbody>
</table>

*Note: Location quotients are Canadian*

*Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity*
Components of the Financial Services Cluster

### The Education and Knowledge Creation Cluster

#### Leading CMA’s by Traded Cluster Employment (2000)

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<tr>
<th>Ontario CMA</th>
<th>Employment</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1    Toronto</td>
<td>54,523</td>
<td>1.03</td>
</tr>
<tr>
<td>2    Ottawa</td>
<td>23,943</td>
<td>2.31</td>
</tr>
<tr>
<td>3    Hamilton</td>
<td>10,914</td>
<td>1.56</td>
</tr>
<tr>
<td>4    Kitchener</td>
<td>9,904</td>
<td>2.11</td>
</tr>
<tr>
<td>5    London</td>
<td>7,680</td>
<td>1.69</td>
</tr>
<tr>
<td>6    Windsor</td>
<td>3,985</td>
<td>1.23</td>
</tr>
<tr>
<td>7    St. Catharines</td>
<td>3,642</td>
<td>0.95</td>
</tr>
<tr>
<td>8    Sudbury</td>
<td>2,482</td>
<td>1.57</td>
</tr>
<tr>
<td>9    Thunder Bay</td>
<td>2,181</td>
<td>1.69</td>
</tr>
<tr>
<td>10   Oshawa</td>
<td>1,502</td>
<td>0.51</td>
</tr>
</tbody>
</table>

Note: Location quotients are North American
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
Components of the Education and Knowledge Creation Cluster

10 Narrow Sub Cluster Industries
30 Broad Sub Cluster Industries

# The Transportation and Logistics Cluster

## Leading CMA’s by Traded Cluster Employment (2000)

<table>
<thead>
<tr>
<th>Ontario CMA</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Toronto</td>
<td>57,534</td>
<td>1.47</td>
</tr>
<tr>
<td>2  Ottawa</td>
<td>8,034</td>
<td>1.05</td>
</tr>
<tr>
<td>3  London</td>
<td>7,616</td>
<td>2.28</td>
</tr>
<tr>
<td>4  Hamilton</td>
<td>3,679</td>
<td>0.72</td>
</tr>
<tr>
<td>5  St. Catharines</td>
<td>3,301</td>
<td>1.17</td>
</tr>
<tr>
<td>6  Kitchener</td>
<td>3,266</td>
<td>0.95</td>
</tr>
<tr>
<td>7  Windsor</td>
<td>2,097</td>
<td>0.88</td>
</tr>
<tr>
<td>8  Thunder Bay</td>
<td>1,970</td>
<td>2.08</td>
</tr>
<tr>
<td>9  Oshawa</td>
<td>1,731</td>
<td>0.79</td>
</tr>
<tr>
<td>10 Sudbury</td>
<td>647</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Note: Location quotients are Canadian
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
Components of the Transportation and Logistics Cluster

- Communication Equipment and Services
- Bus Transportation
- Ship Building
- Marine Transportation Carriers
- Handling and Storage
- Airports
- Transportation Arrangement
- Financial Services
- Passenger Transportation
- Air Transportation Carriers
- Bus Terminals
- Computer Services and Equipment

17 Narrow Sub Cluster Industries
12 Broad Sub Cluster Industries

## The Metal Manufacturing Cluster

### Leading CMA’s by Traded Cluster Employment (2000)

<table>
<thead>
<tr>
<th>Ontario CMA</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Toronto</td>
<td>42,578</td>
<td>1.28</td>
</tr>
<tr>
<td>2 Hamilton</td>
<td>23,848</td>
<td>5.43</td>
</tr>
<tr>
<td>3 Kitchener</td>
<td>7,389</td>
<td>2.51</td>
</tr>
<tr>
<td>4 St. Catharines</td>
<td>7,004</td>
<td>2.91</td>
</tr>
<tr>
<td>5 Windsor</td>
<td>6,969</td>
<td>3.43</td>
</tr>
<tr>
<td>6 London</td>
<td>3,333</td>
<td>1.17</td>
</tr>
<tr>
<td>7 Oshawa</td>
<td>1,939</td>
<td>1.04</td>
</tr>
<tr>
<td>8 Ottawa</td>
<td>1,138</td>
<td>0.17</td>
</tr>
<tr>
<td>9 Thunder Bay</td>
<td>728</td>
<td>0.90</td>
</tr>
<tr>
<td>10 Sudbury</td>
<td>244</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Note: Location quotients are Canadian
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
Components of the Metal Manufacturing Cluster

- Specialized Equipment
- Metal Products
- Processing Inputs
- Wire and Springs
- Fasteners
- Nonferrous Metals
- Metal Equipment
- Iron and Steel Mills and Foundries
- Metal Processing
- Related Machinery
- Related Metal Products
- Metal Furniture
- Related Processing
- Metal Armaments
- Related Metal Equipment
- Automotive Parts and Equipment
- Nonferrous Mills and Foundries
- Metal Machine Tools

43 Narrow Sub Cluster Industries
24 Broad Sub Cluster Industries

### Leading CMA’s by Traded Cluster Employment (2000)

<table>
<thead>
<tr>
<th>Ontario CMA</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Toronto</td>
<td>47,965</td>
<td>0.79</td>
</tr>
<tr>
<td>2 Ottawa</td>
<td>12,714</td>
<td>1.07</td>
</tr>
<tr>
<td>3 St. Catharines</td>
<td>10,930</td>
<td>2.50</td>
</tr>
<tr>
<td>4 Windsor</td>
<td>4,985</td>
<td>1.35</td>
</tr>
<tr>
<td>5 Hamilton</td>
<td>4,658</td>
<td>0.58</td>
</tr>
<tr>
<td>6 Kitchener</td>
<td>3,025</td>
<td>0.57</td>
</tr>
<tr>
<td>7 London</td>
<td>2,638</td>
<td>0.51</td>
</tr>
<tr>
<td>8 Sudbury</td>
<td>2,321</td>
<td>1.29</td>
</tr>
<tr>
<td>9 Thunder Bay</td>
<td>1,951</td>
<td>1.33</td>
</tr>
<tr>
<td>10 Oshawa</td>
<td>1,611</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Note: Location quotients are North American
Source: Statistics Canada, Canadian Business Patterns (June 2000); Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Institute for Competitiveness & Prosperity
Components of the Hospitality and Tourism Cluster

- Related Transportation
  - Related Professional Services
    - Support Services
    - Accomodations
  - Tour Services
  - Tourism Attractions
  - Other Attractions
    - Specialized Inputs
    - Local Transportation
    - Air Services
    - Vehicle Distribution
    - Other Support Services

22 Narrow Sub Cluster Industries
12 Broad Sub Cluster Industries

What can Canadian businesses do?

- **Strategy**
  - Focus on the global peak
  - Set aspirations and goals accordingly
  - Compete globally, serving the most sophisticated and demanding customers
  - Compete on the basis of unique products and processes

- **Cluster Building**
  - Be a demanding and sophisticated customer...
  - But, encourage local suppliers to meet global standards and follow you globally
  - Collaborate with competitors and governments to create specialized infrastructure and education...
  - But, compete vigorously with the same competitors
What can Canadian Governments do?

- Encourage an Environment of Pressure...
  - Create an environment in which customer sophistication can flourish
    - Where possible, act as a sophisticated and demanding buyer
    - Maintain an environment that features intense rivalry
  - While Balancing it with Critical Elements of Support
    - Invest heavily in the university research infrastructure
      - Scientific research
      - Business research
    - Invest in the key pieces of infrastructure
    - Encourage and celebrate innovation
    - Encourage and celebrate global competitiveness
    - Promote clustering rather than dispersion
What can Canadian Universities do?

- **Aspirations**
  - Focus on the global peak and set goals accordingly
  - Compete globally for faculty and students
  - Seek unique and differentiated positioning

- **Connectedness**
  - Seek to collaborate with proximate businesses
  - Be guided in part by their needs
  - And seek to guide them with your research-based insights
Some Questions to Consider

Based on your knowledge of the Cities of London and Windsor and the Region of Western Ontario, what industry clusters do you see as most critical to its competitiveness and prosperity?

What are the three or four most important factors for the growth and competitiveness of the region and its clusters?

What are the greatest strengths of the business environment for enhancing the competitiveness of businesses or industries in the region? What are the greatest challenges?

How should universities and colleges contribute to the economic development of London, Windsor, and Western Ontario?

Do individuals, firms and governments have global aspirations for the industry clusters in Western Ontario?
Overview of Annual Report

• Closing the Prosperity Gap
• Productivity for Prosperity
• AIMS for Opportunities
• Actions for Productivity and Prosperity
AIMS for Opportunities

Factors driving innovation and upgrading

Attitudes → Structures → Motivations → Investment

→

to strengthen the elements and generate prosperity

Productivity → Intensity → Utilization → Profile

→

GDP/Capita

Source: Institute for Competitiveness and Prosperity
AIMS - Attitudes

Factors driving innovation and upgrading

- Aspirations
- Competitiveness
- Entrepreneurship
- Creativity

Source: Institute for Competitiveness and Prosperity
Aspirations, Competitiveness and Prosperity

Aspirations and Goals

Where to Play

How to Win

Incompatible with Global Competitiveness
- National competitiveness
- Sustainable advantage over local competition
- Primarily in home country
- Broad participation
- Serving most easily satisfied customers
- Replication with low cost labour/raw materials
- Minimal R&D
- Weak branding

Compatible with Global Competitiveness
- Global competitiveness
- Sustainable advantage over global competition
- Globally in focused product niche
- Serving demanding customers at home and abroad
- Unique product/process
- High R&D
- Global distribution
- Branding
Key Florida/Gertler Results on Creativity

Ontario cities rank well on “melting pot/mosaic” and “bohemian” indices – compared to similar-sized US cities

Most Ontario cities rank near top in melting pot/mosaic index

Bohemian results vary more by city size:
- Toronto 4th; Ottawa-Hull near top quartile
- Kitchener, London in top quartile for their peer group
- Hamilton, St Catharines-Niagara, Oshawa closer to middle of pack
- Windsor, Thunder Bay, Sudbury below average for cities of their size

Task Force conclusion: Ontario has the creative class necessary to compete; but aspirations, entrepreneurship, and attitudes towards competitiveness may be holding us back
AIMS - Investments

Factors driving innovation and upgrading

- Education, particularly post secondary
- Machinery & equipment

Source: Institute for Competitiveness and Prosperity
Education Spending as % of GDP

Expenditure from all sources in Educational Institutions as Percentage of GDP
Ontario & US

Note: U.S. data for 1997-8 are preliminary data for public elementary and secondary schools and estimates for post secondary schools.

Ontario Lagging in Master’s Degrees

Degrees Per 1,000 Population (1997-8)

- **Totals**: Ontario 5.72, US 6.20
- **Bachelor’s**: Ontario 4.80, US 4.42
- **Master’s**: Ontario 0.79, US 1.61
- **PhD**: Ontario 0.13, US 0.17

Per 1,000 population

Ontario Lagging in Business Degrees

BA, MA and PhD Degrees per Thousand Population
(Average 1990-1998)

Number of Degrees

- Business:
  - Ontario: 0.60
  - US: 1.25

- Science and Technology:
  - Ontario: 1.52
  - US: 1.63

- All Other:
  - Ontario: 3.60
  - US: 3.32

Notes: US data based on the IPEDS "Completions" survey; Business includes "Business management and administrative services", "Marketing Operations/Marketing and Distribution" and "Consumer and Personal Services". The Canadian data include "Business", "Commerce" and "Management".

Spending per Capita Lagging US Peer Group

Per Capita Investments in Post-Secondary Education from all sources
Machinery & Equipment Investments Trail US

Investment Spending: Machinery & Equipment as % of GDP

Source: Statistics Canada, CANSIM II Table 384-00002, National Accounts; U.S. Bureau of Economic Analysis, National Accounts data; Institute for Competitiveness and Prosperity.
AIMS - Motivations

Factors driving innovation and upgrading

- Tax rates
- Government policies and programs

Source: Institute for Competitiveness and Prosperity
Ontario’s Tax Rates Exceed Peer Group States

Average Marginal Effective Tax Rate on Labour

- Ontario: 59%
- Michigan: 59%
- Georgia: 57%
- Illinois: 55%
- California: 53%
- Massachusetts: 52%

Effective Rate

Average Marginal Effective Tax Rate on Capital

- Ontario: 31%
- Massachusetts: 26%
- California: 17%
- Illinois: 17%
- Michigan: 17%
- Georgia: 16%

Effective Rate

Note: Tax as a percentage of After Tax Labour Costs and Pre-Tax Capital Costs; all rates are net of subsidies such as healthcare, education, infrastructure, and R&D.

Source: Unpublished research by Jack Mintz and Sergio Traviza for the Institute for Competitiveness and Prosperity.
Factors driving innovation and upgrading

- Healthy market structures, as evidenced by vibrant clusters of traded industries
- Other supporting structures

Source: Institute for Competitiveness and Prosperity
Government Share of the Economy and Prosperity

GDP and Government Receipts, 1999

GDP per Capita

Government Revenue as % of GDP

Quebec

Ontario

Florida

Michigan

Pennsylvania

Ohio

Indiana

Virginia

Texas

North Carolina

Georgia

California

Illinois

New York

New Jersey

Massachusetts

GDP and Government Receipts, 1999

Quebec

Ontario

Florida

Michigan

Pennsylvania

Ohio

Indiana

Virginia

Texas

North Carolina

Georgia

California

Illinois

New York

New Jersey

Massachusetts
Four Sets of Recommendations

1) Heighten aspirations across Ontario
2) Increase productivity-enhancing investments for future prosperity
3) Adopt tax reforms that strengthen motivations
4) Strengthen market structures
Aspire to move from laggard to leader – achieving median prosperity by 2012 as first step:

- Individuals – aspirations for personal upgrading
- Firms – aspirations for global competitiveness
- Governments – aspirations to invigorate environment to encourage individuals and firms
- All – celebrate winners who set and meet high aspirations
Increase Productivity-Enhancing Investments

All stakeholders should increase productivity-enhancing investments, particularly post-secondary education:

- **Individuals** – commit to life-long learning, contribute to alma mater, support unfreezing of tuition

- **Firms** – continue partnerships with employees in formal training and education, support educational institutions financially

- **Provincial government** – long-term strategy for sustainable funding taking into account roles of individuals, firms, and other private institutions

Further study into role of business education and prosperity
Adopt Tax Reforms that Strengthen Motivations

- Provincial and federal governments to collaborate to explore breakthrough tax reform
- Assess how government spending promotes economic prosperity
- Ontario government to continue work in exploring ways to strengthen Ontario cities

- Local governments and stakeholders to collaborate on revitalizing urban cores and attracting and retaining knowledge workers
Proposed Research Plan

**Attitudes:**
- Measure aspiration on global competitiveness and strength of entrepreneurship (Ontario versus Peer Group)
- Follow-up on Florida/Gertler work

**Investments:**
- Consumption/investment trade-offs
- Continue post-secondary research; expand into primary and secondary

**Motivations:**
- Regulatory processes

**Structures:**
- Intra-cluster assessment – “Hollowing out”
- Peer group best practices on urban governance
- Optimal size of government; spending structure choices of peer group