Regional Competitiveness in the Pioneer Valley

Professor Michael E. Porter
Institute for Strategy and Competitiveness
Harvard Business School

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Further information on Professor Porter’s work and the Institute for Strategy and Competitiveness is available at www.isc.hbs.edu
The most important sources of prosperity are created not inherited.

Productivity does not depend on what industries a region competes in, but on how it competes.

The prosperity of a region depends on the productivity of all its industries.

Innovation is vital for long-term increases in productivity.
Productivity, Innovation, and the Business Environment

**Context for Firm Strategy and Rivalry**
- A local context and rules that encourage **investment** and **sustained upgrading**
  - e.g., Intellectual property protection
- **Meritocratic** incentive systems across all major institutions
- Open and vigorous competition among **locally based rivals**

**Factor (Input) Conditions**
- Presence of high quality, specialized inputs available to firms
  - Human resources
  - Capital resources
  - Physical infrastructure
  - Administrative infrastructure
  - Information infrastructure
  - Scientific and technological infrastructure
  - Natural resources

**Demand Conditions**
- Sophisticated and demanding local customer(s)
- Local customer needs that **anticipate** those elsewhere
- Unusual local demand in specialized segments that can be served nationally and globally

**Related and Supporting Industries**
- Access to capable, locally based suppliers and firms in **related fields**
- Presence of **clusters** instead of isolated industries

• Successful economic development is a process of **successive economic upgrading**, in which the business environment in a nation or region evolves to support and encourage increasingly sophisticated ways of competing.
## Composition of Regional Economies

### United States

<table>
<thead>
<tr>
<th></th>
<th>Traded Clusters</th>
<th>Local Clusters</th>
<th>Natural Resource-Driven Industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of Employment</td>
<td>31.6%</td>
<td>67.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Employment Growth, 1990</td>
<td>1.7%</td>
<td>2.8%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>to 2001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Wage</td>
<td>$46,596</td>
<td>$28,288</td>
<td>$33,245</td>
</tr>
<tr>
<td>Relative Wage</td>
<td>133.8</td>
<td>84.2</td>
<td>99.0</td>
</tr>
<tr>
<td>Wage Growth</td>
<td>5.0%</td>
<td>3.6%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Relative Productivity</td>
<td>144.1</td>
<td>79.3</td>
<td>140.1</td>
</tr>
<tr>
<td>Patents per 10,000</td>
<td>21.3</td>
<td>1.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Employees</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of SIC Industries</td>
<td>590</td>
<td>241</td>
<td>48</td>
</tr>
</tbody>
</table>

Note: 2001 data, except relative productivity which is 1997 data.
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Specialization of Regional Economies
Select U.S. Geographic Areas

- **Seattle-Bellevue-Everett, WA**
  - Aerospace Vehicles and Defense
  - Fishing and Fishing Products
  - Analytical Instruments

- **San Francisco-Oakland-San Jose Bay Area**
  - Communications Equipment
  - Agricultural Products
  - Information Technology

- **Los Angeles Area**
  - Apparel
  - Building Fixtures, Equipment and Services
  - Entertainment

- **San Diego**
  - Leather and Sporting Goods
  - Power Generation
  - Education and Knowledge Creation

- **Chicago**
  - Communications Equipment
  - Processed Food
  - Heavy Machinery

- **Wichita, KS**
  - Aerospace Vehicles and Defense
  - Heavy Machinery

- **Pittsburgh, PA**
  - Construction Materials
  - Metal Manufacturing
  - Education and Knowledge Creation

- **Boston**
  - Analytical Instruments
  - Education and Knowledge Creation

- **San Francisco-Oakland-San Jose Bay Area**
  - Communications Equipment
  - Agricultural Products
  - Information Technology

- **Raleigh-Durham, NC**
  - Communications Equipment
  - Information Technology
  - Education and Knowledge Creation

- **Atlanta, GA**
  - Construction Materials
  - Transportation and Logistics
  - Business Services

- **Kansas City, MO**
  - Aerospace Vehicles and Defense
  - Heavy Machinery

- **San Diego**
  - Leather and Sporting Goods
  - Power Generation
  - Education and Knowledge Creation

- **Houston**
  - Heavy Construction Services
  - Oil and Gas

- **Raleigh-Durham, NC**
  - Communications Equipment
  - Information Technology
  - Education and Knowledge Creation

Note: Clusters listed are the three highest ranking clusters in terms of share of national employment.
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Massachusetts Life Sciences Cluster

- Health and Beauty Products
- Surgical Instruments and Suppliers
- Medical Equipment
- Dental Instruments and Suppliers
- Ophthalmic Goods
- Diagnostic Substances
- Containers
- Analytical Instruments

Health Services Provider

Biological Products

Biopharmaceutical Products

Research Organizations

Cluster Organizations
- MassMedic, MassBio, others

Specialized Business Services
- Banking, Accounting, Legal

Specialized Risk Capital
- VC Firms, Angel Networks

Specialized Research Service Providers
- Laboratory, Clinical Testing

Educational Institutions
- Harvard University, MIT, Tufts University, Boston University, UMass, others
Note: Clusters with overlapping borders or identical shading have at least 20% overlap (by number of industries) in both directions.
The Evolution of Regional Economies
San Diego

- Climate and Geography
- U.S. Military
- Bioscience Research Centers

- 1910
- 1930
- 1950
- 1970
- 1990

- Hospitality and Tourism
- Sporting and Leather Goods
- Transportation and Logistics
- Power Generation
- Communications Equipment
- Information Technology
- Aerospace Vehicles and Defense
- Analytical Instruments
- Education and Knowledge Creation
- Medical Devices
- Biotech / Pharmaceuticals

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Institutions for Collaboration
Selected Massachusetts Organizations. Life Sciences

Life Sciences Industry Associations
- Massachusetts Biotechnology Council
- Massachusetts Medical Device Industry Council
- Massachusetts Hospital Association

University Initiatives
- Harvard Biomedical Community
- MIT Enterprise Forum
- Biotech Club at Harvard Medical School
- Technology Transfer offices

General Industry Associations
- Associated Industries of Massachusetts
- Greater Boston Chamber of Commerce
- High Tech Council of Massachusetts

Informal networks
- Company alumni
- Venture Capital community
- University alumni

Economic Development Initiatives
- Massachusetts Technology Collaborative
- Mass Biomedical Initiatives
- Mass Development
- Massachusetts Alliance for Economic Development

Joint Research Initiatives
- New England Healthcare Institute
- Whitehead Institute For Biomedical Research
- Center for Integration of Medicine and Innovative Technology (CIMIT)
Influences on Competitiveness

Multiple Geographic Levels

1. World Economy
2. Groups of Neighboring Nations
3. Nations
4. States, Provinces
5. Metropolitan Areas
6. Smaller Cities and Counties
Massachusetts Regional Competitiveness Council Regions

Regional Competitiveness Councils and Town/City Borders
Regional Competitiveness
Pioneer Valley

- Foundations of Regional Competitiveness

- Assessing the Competitiveness of the Pioneer Valley

- Action Agenda
Economic Performance
Pioneer Valley

- Wages are below the US average and most Massachusetts regions, and lag both in growth

- Employment has been growing at 1.3% annually over the last five years, far below the US and Massachusetts average

- Pioneer Valley registered by far the lowest rates of establishment growth of all Massachusetts regions
  - Establishment size is above average

- Patenting rates of 6.3 patents per 10,000 employees in 2001 put Pioneer Valley in the lower group of Massachusetts regions
Data: private, non-agricultural employment
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Comparative Performance of Regions
Wage Growth and Wages

CAGR of Average Wage, 1997–2001

Greater Boston

US Average Wage Growth: 4.56%

US Average Wage: $34,669

Represents employment of 250,000 in 2001

Average Wage, 2001

2.0%
3.0%
4.0%
5.0%
6.0%
7.0%
8.0%
9.0%

25,000 30,000 35,000 40,000 45,000 50,000 55,000 60,000

Pioneer Valley

Berkshire

Cape and Islands

Central

Southeast

Northeast
Wages in Traded and Local Industries
Massachusetts Regions

US Average Traded Wage: $44,956
US Average Local Wage: $28,288

Greater Boston
Massachusetts, all regions
Northeast
Pioneer Valley
Southeast
Central
Cape and Islands
Berkshire

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Comparative Performance of Regions
Wage Growth and Employment Growth

CAGR of Employment, 1997–2001

CAGR of Average Wage, 1997–2001

Data: private, non-agricultural employment
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Represents employment of 250,000 in 2001

US Average Wage Growth: 4.56%
US Average Employment Growth: 2.21%

Greater Boston
Northeast
Cape and Islands
Southeast
Central
Pioneer Valley
Berkshire

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Job Creation
Massachusetts Regions

Data: private, non-agricultural employment.  Note: Regional data does not total precisely to statewide data due to omissions for confidentiality in the regions.
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

Net job creation in traded clusters, 1997-2001: +535
Net job creation in local clusters, 1997-2001: +10,274
Comparative Performance of Regions
Establishment Formation in Traded Clusters

CAGR of Traded Establishments, 1997–2001

US Average Rate of Traded Establishment Formation: 2.79%

US Average Employees per Traded Establishment: 23.8

Represents 4,000 traded establishments in 2001

Greater Boston

Northeast

Central

Southeast

Berkshire

Cape and Islands

Pioneer Valley

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
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Comparative Performance of Regions
Wages and Patenting Rates

US Average Patenting Rate: 7.71 per 10,000 Workers

US Average Wage: 34,669

Greater Boston
Northeast
Central
Southeast
Pioneer Valley
Cape and Islands
Berkshire

Average Wage, 2001
Patents per 10,000 Workers, 2001

Represents 500 patents in 2001

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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## Patents by Organization
### Pioneer Valley Region

<table>
<thead>
<tr>
<th>Organization</th>
<th>Patents Issued from 1997 to 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SPALDING SPORTS WORLDWIDE, INC.</td>
<td>83</td>
</tr>
<tr>
<td>2. LISCO, INC.</td>
<td>39</td>
</tr>
<tr>
<td>3. REXHAM GRAPHICS INC.</td>
<td>28</td>
</tr>
<tr>
<td>4. UNIVERSITY OF MASSACHUSETTS</td>
<td>26</td>
</tr>
<tr>
<td>5. SMITH &amp; WESSON CORP.</td>
<td>14</td>
</tr>
<tr>
<td>6. UNITED TECHNOLOGIES CORPORATION</td>
<td>13</td>
</tr>
<tr>
<td>7. BAYER CORPORATION</td>
<td>12</td>
</tr>
<tr>
<td>8. COMBUSTION ENGINEERING INC.</td>
<td>11</td>
</tr>
<tr>
<td>9. MONSANTO COMPANY, INC.</td>
<td>9</td>
</tr>
<tr>
<td>10. RESEARCH CORPORATION TECHNOLOGIES, INC.</td>
<td>8</td>
</tr>
<tr>
<td>11. AVERY DENNISON CORPORATION</td>
<td>6</td>
</tr>
<tr>
<td>12. SOLUTIA INC.</td>
<td>6</td>
</tr>
<tr>
<td>13. SPECIALTY LOOSE LEAF, INC.</td>
<td>6</td>
</tr>
<tr>
<td>14. TAPESWITCH CORPORATION OF AMERICA</td>
<td>6</td>
</tr>
<tr>
<td>15. OTIS ELEVATOR COMPANY</td>
<td>5</td>
</tr>
<tr>
<td>16. DIESEL ENGINE RETARDERS, INC.</td>
<td>4</td>
</tr>
<tr>
<td>17. PRESSTEK, INC.</td>
<td>4</td>
</tr>
<tr>
<td>18. HARDIGG INDUSTRIES, INC.</td>
<td>4</td>
</tr>
<tr>
<td>19. THOMCAST COMMUNICATIONS, INC.</td>
<td>4</td>
</tr>
<tr>
<td>20. NEW ENGLAND SCIENCE &amp; SPECIALTY PRODUCTS, INC.</td>
<td>4</td>
</tr>
<tr>
<td>21. MILLA COMPANY INC</td>
<td>4</td>
</tr>
<tr>
<td>22. KOLLMORGEN CORPORATION</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note: The USPTO assigns location based on the inventor’s address rather than that of the institutional owner.*

*Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School*
Composition
Pioneer Valley

- Pioneer Valley has a very strong position in *sporting, recreational, and children’s goods* and in *leather and related products*, with national employment shares up to ten times higher than expected given the region’s size
  - Other significant clusters include publishing and printing, plastics, production technology, and education and knowledge creation

- The Pioneer Valley is strengthening its position in a number of its strong clusters, especially in *building fixtures* and in *leather and related products*
  - More than 60% of employees in clusters with a higher than expected presence in the region and above national average wages are in clusters growing share

- Wages in the region *lag* the state average across all clusters with significant employment
Specialization By Traded Cluster
Pioneer Valley Region

Share of National Cluster Employment in 2001

Change in Share, 1997–2001

-0.4% -0.2% 0.0% 0.2% 0.4% 0.6% 0.8%

Regional Share of National Employment: 0.205%

- Sporting, Recreational and Children’s Goods
- Leather and Related Products
- Publishing and Printing
- Forest Products
- Production Technology
- Plastics
- Building Fixtures, Equipment & Services

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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**Specialization By Traded Cluster**

**Pioneer Valley Region**

![Graph showing specialization by traded cluster in the Pioneer Valley Region.](image)

- **Change in Share, 1997–2001**
  - Blue circles: 0–499
  - Green circles: 500–2,499
  - Orange circles: 2,500–7,999
  - Red circle: 8,000+

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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Employment By Traded Cluster
Pioneer Valley Region

Financial Services
Education and Knowledge Creation
Publishing and Printing
Business Services
Plastics
Hospitality and Tourism
Metal Manufacturing
Sporting, Recreational and Children's Goods
Production Technology
Forest Products
Processed Food
Building Fixtures, Equipment and Services
Distribution Services
Heavy Construction Services
Leather and Related Products
Transportation and Logistics
Entertainment
Communications Equipment
Analytical Instruments
Automotive
Information Technology
Apparel
Chemical Products
Aerospace Engines
Construction Materials
Textiles
Motor Driven Products
Lighting and Electrical Equipment
Medical Devices
Aerospace Vehicles and Defense
Biopharmaceuticals
Furniture
Heavy Machinery
Agricultural Products
Jewelry and Precious Metals
Tobacco
Prefabricated Enclosures
Power Generation and Transmission
Oil and Gas Products and Services
Footwear
Fishing and Fishing Products

Rank in MA

- Indicates expected employment at rates in the state benchmark for traded clusters. Rank is across 7 state regions.
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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Job Creation By Traded Cluster
Pioneer Valley Region

Net job creation in traded clusters from 1997-2001: +535

Job Creation, 1997-2001

Indicates expected job creation at rates achieved in national benchmark clusters, i.e. % change in national benchmark times initial employment

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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Relative Cluster Performance
Pioneer Valley Region

0.205% of U.S. Employment

26.4% of traded employment
16.9% in clusters gaining share
9.5% in clusters losing share

Note: US wage and employment benchmarks
Data points that fall outside the graph are placed on the borders with their values given in parentheses (Employment, Wage)
Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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Job Creation By Local Cluster
Pioneer Valley Region

Net job creation in local clusters, 1997-2001: +10,274

- Indicates expected job creation at rates achieved in national benchmark clusters, i.e. % change in national benchmark times initial employment

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Wages By Traded Cluster
Pioneer Valley Region with State Benchmarks

Region’s average traded wage: $41,569

- Indicates Massachusetts average wage in the cluster.

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School

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## Leading Sub-Clusters by Location Quotient
### Pioneer Valley Region, 2001

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Subcluster</th>
<th>Location Quotient</th>
<th>Share of National Employment</th>
<th>Rank among Massachusetts Regions</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
<td>Insurance Products</td>
<td>1.95</td>
<td>0.40%</td>
<td>3</td>
<td>4,791</td>
</tr>
<tr>
<td>Education and Knowledge Creation</td>
<td>Educational Institutions</td>
<td>2.26</td>
<td>0.46%</td>
<td>2</td>
<td>7,597</td>
</tr>
<tr>
<td>Publishing and Printing</td>
<td>Paper Products</td>
<td>14.74</td>
<td>3.02%</td>
<td>1</td>
<td>2,642</td>
</tr>
<tr>
<td></td>
<td>Specialty Paper Products</td>
<td>2.91</td>
<td>0.60%</td>
<td>1</td>
<td>356</td>
</tr>
<tr>
<td></td>
<td>Photographic Equipment and Supplies</td>
<td>2.52</td>
<td>0.52%</td>
<td>4</td>
<td>255</td>
</tr>
<tr>
<td>Plastics</td>
<td>Plastic Materials and Resins</td>
<td>4.64</td>
<td>0.95%</td>
<td>1</td>
<td>1,491</td>
</tr>
<tr>
<td></td>
<td>Plastic Products</td>
<td>1.76</td>
<td>0.36%</td>
<td>2</td>
<td>2,202</td>
</tr>
<tr>
<td>Hospitality and Tourism</td>
<td>Tourism Attractions</td>
<td>1.99</td>
<td>0.41%</td>
<td>2</td>
<td>1,135</td>
</tr>
<tr>
<td>Metal Manufacturing</td>
<td>Saw Blades and Handsaws</td>
<td>54.48</td>
<td>11.17%</td>
<td>1</td>
<td>941</td>
</tr>
<tr>
<td></td>
<td>Precision Metal Products</td>
<td>2.76</td>
<td>0.57%</td>
<td>2</td>
<td>641</td>
</tr>
<tr>
<td></td>
<td>Metal Processing</td>
<td>1.78</td>
<td>0.36%</td>
<td>3</td>
<td>983</td>
</tr>
<tr>
<td>Sporting, Recreational and Children's Goods</td>
<td>Games, Toys, and Children's Vehicles</td>
<td>44.00</td>
<td>9.02%</td>
<td>1</td>
<td>1,967</td>
</tr>
<tr>
<td></td>
<td>Sporting and Athletic Goods</td>
<td>7.54</td>
<td>1.55%</td>
<td>2</td>
<td>1,023</td>
</tr>
<tr>
<td>Production Technology</td>
<td>Machine Tools and Accessories</td>
<td>8.30</td>
<td>1.70%</td>
<td>1</td>
<td>1,456</td>
</tr>
<tr>
<td></td>
<td>Process Machinery</td>
<td>1.64</td>
<td>0.34%</td>
<td>4</td>
<td>271</td>
</tr>
<tr>
<td>Forest Products</td>
<td>Paper Products</td>
<td>7.95</td>
<td>1.63%</td>
<td>1</td>
<td>1,683</td>
</tr>
<tr>
<td></td>
<td>Paper Industries Machinery</td>
<td>7.18</td>
<td>1.47%</td>
<td>2</td>
<td>194</td>
</tr>
<tr>
<td>Processed Food</td>
<td>Paper Containers and Boxes</td>
<td>2.38</td>
<td>0.49%</td>
<td>1</td>
<td>1,009</td>
</tr>
<tr>
<td></td>
<td>Milk and Frozen Desserts</td>
<td>1.97</td>
<td>0.40%</td>
<td>3</td>
<td>310</td>
</tr>
<tr>
<td>Building Fixtures, Equipment and Services</td>
<td>Fabricated Materials</td>
<td>7.96</td>
<td>1.63%</td>
<td>1</td>
<td>911</td>
</tr>
<tr>
<td></td>
<td>Heating and Lighting</td>
<td>3.22</td>
<td>0.66%</td>
<td>2</td>
<td>272</td>
</tr>
<tr>
<td>Leather Products</td>
<td>Related Products</td>
<td>10.57</td>
<td>2.17%</td>
<td>1</td>
<td>1,678</td>
</tr>
<tr>
<td>Transportation and Logistics</td>
<td>Bus Transportation</td>
<td>4.64</td>
<td>0.95%</td>
<td>1</td>
<td>235</td>
</tr>
<tr>
<td>Communications Equipment</td>
<td>Electrical and Electronic Components</td>
<td>2.10</td>
<td>0.43%</td>
<td>5</td>
<td>694</td>
</tr>
<tr>
<td>Analytical Instruments</td>
<td>Optical Instruments</td>
<td>7.40</td>
<td>1.52%</td>
<td>4</td>
<td>346</td>
</tr>
<tr>
<td>Automotive</td>
<td>Production Equipment</td>
<td>2.01</td>
<td>0.41%</td>
<td>2</td>
<td>560</td>
</tr>
<tr>
<td>Apparel</td>
<td>Knitting and Finishing Mills</td>
<td>1.53</td>
<td>0.31%</td>
<td>4</td>
<td>273</td>
</tr>
<tr>
<td>Chemical Products</td>
<td>Special Packaging</td>
<td>7.94</td>
<td>1.63%</td>
<td>1</td>
<td>175</td>
</tr>
<tr>
<td>Aerospace Engines</td>
<td>Aircraft Engines</td>
<td>1.97</td>
<td>0.41%</td>
<td>2</td>
<td>325</td>
</tr>
<tr>
<td>Construction Materials</td>
<td>Wood Products</td>
<td>2.18</td>
<td>0.45%</td>
<td>1</td>
<td>255</td>
</tr>
<tr>
<td>Textiles</td>
<td>Specialty Apparel Components</td>
<td>4.66</td>
<td>0.95%</td>
<td>3</td>
<td>266</td>
</tr>
<tr>
<td>Motor Driven Products</td>
<td>Appliances</td>
<td>2.00</td>
<td>0.41%</td>
<td>1</td>
<td>232</td>
</tr>
<tr>
<td>Biopharmaceuticals</td>
<td>Containers</td>
<td>1.75</td>
<td>0.36%</td>
<td>2</td>
<td>128</td>
</tr>
</tbody>
</table>

Source: Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
Sole Proprietorship Employment and Growth

Pioneer Valley Region

Sole Proprietorship Employment 2001

Professional, scientific, and technical services
Health care and social assistance
Retail trade
Wholesale trade
Manufacturing

Compound Annual Growth Rate (CAGR) of Sole Proprietorship Employment, 1998–2001

Note: Data available on county basis only; the allocation to Massachusetts regions is only approximate.
Source: U.S. Census Bureau, Nonemployer Statistics

Sole proprietorships: 37,648
as % of total emp: 13.0%
CAGR 1998-2001: 0.51%
Business Environment

Pioneer Valley

- Pioneer Valley compares favorably to the Massachusetts state average on most dimensions of the business environment
  - Particular strengths include the low cost of living and doing business, and the quality of the transportation infrastructure
  - Skill availability gets average grades, with room for improvement especially in vocational schools

- Despite their satisfaction with most elements of the business environment, business leaders in the Pioneer Valley are critical towards the overall attractiveness of their region

- A key concern is the responsiveness and overall role of the state in economic development
  - Pioneer Valley executives see the lack of business-friendly policies as key barrier to growth, and report regulations and the lack of policy predictability as a key concern
## Regional Comparisons

### Availability of Inputs

<table>
<thead>
<tr>
<th>Statement</th>
<th>Berkshire</th>
<th>Cape and Islands</th>
<th>Central</th>
<th>Greater Boston</th>
<th>Northeast</th>
<th>Pioneer Valley</th>
<th>Southeast</th>
<th>Massachusetts</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall quality of life in your region makes recruitment and retention of employees easy</td>
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<tr>
<td>The communications infrastructure in your local region fully satisfies your business needs</td>
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<tr>
<td>Advanced educational programs provide your business with high quality employees</td>
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<td>Specialized facilities for research are readily available</td>
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<tr>
<td>The cost of living in your region makes recruitment and retention of employees easy</td>
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<tr>
<td>Qualified scientists and engineers in your local region are in ample supply</td>
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<tr>
<td>The overall quality of transportation is very good relative to other regions</td>
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<tr>
<td>The overall quality of the K-12 education system is high</td>
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<tr>
<td>The available pool of skilled workers in your region is sufficient to meet your growth needs</td>
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<tr>
<td>Basic education and English language instruction for immigrant workers meet the needs of my organization</td>
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<tr>
<td>The cost of doing business is low relative to other regions</td>
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<tr>
<td>Access to risk capital (e.g. venture capital, angel capital) is easy</td>
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<tr>
<td>The institutions in your local region that perform basic research frequently transfer knowledge to your industry</td>
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</tbody>
</table>

**Source:** Professor Michael E. Porter and Monitor Group
Regional Comparisons
Institutions & Education

How satisfied are you with the impact of the following institutions, in your region, on your company?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Mean Agreement</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

- Community Colleges
- Universities
- Industry or Cluster Trade Associations
- Business Assistance Centers
- Business Incubators
- Public or Private Research Organizations

How would you best describe the quality of new workers from these sources?

<table>
<thead>
<tr>
<th>Inadequate</th>
<th>Mean Rating</th>
<th>Superior</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

- Private universities
- Public universities
- Community colleges
- Other private or non-profit training providers
- Vocational schools

Source: Professor Michael E. Porter and Monitor Group

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Regional Comparisons

Regional Strategy & Summary of the Regional Business Environment

Does your local region have a well articulated economic strategy and are you an active participant in it?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Mean Agreement</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>My organization can contribute significant value to an economic development strategy.</td>
<td>( \bigstar )</td>
<td>( \triangle )</td>
</tr>
<tr>
<td>My organization is an active participant in the execution of this strategy.</td>
<td>( \bigstar )</td>
<td>( \triangle )</td>
</tr>
<tr>
<td>Local business and government leaders have articulated a clear strategy for promoting the economic development of the local region.</td>
<td>( \bigstar )</td>
<td>( \triangle )</td>
</tr>
<tr>
<td>The state has articulated a clear strategy for the region.</td>
<td>( \bigstar )</td>
<td>( \triangle )</td>
</tr>
</tbody>
</table>

Summary of the Regional Business Environment

| Overall, this region in Massachusetts is a good place for my company to do business. | \( \bigstar \) |
| Overall, my region has strengths in my industry compared to other regions in Massachusetts. | \( \bigstar \) |

Source: Professor Michael E. Porter and Monitor Group
Regional Comparisons

Future Threats in the Local Business Environment

Percent of Respondents which Ranked Characteristic Among the Top Five Greatest Threats

- Cost of doing business (e.g. real estate, wages, utilities, etc)
- State government's overall responsiveness to the needs of business
- Available pool of skilled workforce
- Predictability of state government policies
- State regulations for production processes and products/services
- State environmental/safety regulations
- Quality of local K-12 schools
- Quality of transportation (e.g. ease of access, traffic)
- Access to capital
- Level of locally-based competition in your industry
- Predictability of local government policies
- Local government's overall responsiveness to the needs of business
- Overall quality of life for employees

Source: Professor Michael E. Porter and Monitor Group

Berkshire   Cape and Islands
Central    Greater Boston
Northeast   Pioneer Valley
Southeast   Massachusetts

RCC Pioneer Valley 10-10-03 CK RB3
### Regional Comparisons

#### Priorities for Government

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Mean Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote world-class primary and secondary education</td>
<td></td>
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<tr>
<td>Simplify compliance procedures for government regulations (e.g. one-stop filing, websites, etc)</td>
<td></td>
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<tr>
<td>Promote specialized education and training programs to upgrade worker skills</td>
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<tr>
<td>Improve state government support for transportation and other physical infrastructure</td>
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<tr>
<td>Improve information and communications infrastructure</td>
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<tr>
<td>Implement tax reform to encourage investment in innovation (e.g. R&amp;D tax credits)</td>
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</tr>
<tr>
<td>Improve local government support for transportation and other physical infrastructure</td>
<td></td>
</tr>
<tr>
<td>Promote universal computer literacy</td>
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</tr>
<tr>
<td>Support the particular needs of start-up companies (access to capital, incubators, management training)</td>
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<tr>
<td>Catalyze partnerships among government agencies, industry and universities</td>
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<tr>
<td>Speed-up regulatory approval process in line with product life-cycles</td>
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<tr>
<td>Assist in attracting suppliers and service providers from other locations</td>
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<tr>
<td>Increase funding for university-based research</td>
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</tr>
<tr>
<td>Increase government support for funding of specialized research institutes, labs, etc.</td>
<td></td>
</tr>
<tr>
<td>Provide services to assist and promote local exports</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Professor Michael E. Porter and Monitor Group
Regional Competitiveness
Pioneer Valley

- Foundations of Regional Competitiveness
- Assessing the Competitiveness of the Pioneer Valley
- Action Agenda
Shifting Responsibilities for Economic Development

**Old Model**
- **Government** drives economic development through policy decisions and incentives

**New Model**
- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration
Role of the Private Sector in Economic Development

- A company’s competitive advantage is partly the result of the **local environment**
- Company membership in a cluster offers **collective benefits**
- Private investment in "**public goods**" is justified
  
  - Take an **active role** in upgrading the local infrastructure
  - Nurture **local suppliers** and attract new supplier investments
  - Work closely with local **educational and research institutions** to upgrade quality and create specialized programs addressing cluster needs
  - Provide government with **information** and **substantive input** on regulatory issues and constraints bearing on cluster development
  - Focus **corporate philanthropy** on enhancing the local business environment

- An important role for **trade associations**
  - Greater influence
  - Cost sharing
Public / Private Cooperation in Cluster Upgrading
Minnesota’s Medical Device Cluster

Context for Firm Strategy and Rivalry

- Aggressive trade associations (Medical Alley Association, High Tech Council)
- Effective global marketing of the cluster and of Minnesota as the “The Great State of Health”
- Full-time “Health Care Industry Specialist” in the department of Trade and Economic Development

Factor (Input) Conditions

- Joint development of vocational-technical college curricula with the medical device industry
- Minnesota Project Outreach exposes businesses to resources available at university and state government agencies
- Active medical technology licensing through University of Minnesota
- State-formed Greater Minnesota Corp. to finance applied research, invest in new products, and assist in technology transfer

Demand Conditions

- State sanctioned reimbursement policies to enable easier adoption and reimbursement for innovative products

Related and Supporting Industries
Towards an Action Agenda for the Pioneer Valley

- Mount cluster development efforts, especially around the region’s strong traded clusters

- Improve the communication between business and government in setting economic policy