Massachusetts Economic Growth and Challenges

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Massachusetts’ Economic Growth since the Recession

• MA has experienced prolonged economic growth since the end of the recession.

• What is driving economic growth in the state?
  o Cutting-edge, Knowledge-based Industries (e.g., tech, life sciences, etc.)
  o Research & Development
  o Educated Workforce
  o Foreign-born Labor

• MA economic success is not felt the same by everyone

• Current issues facing Massachusetts
Population Growth across the United States

Cumulative Percent Population Change, April 1, 2010 to July 1, 2019 by U.S. State

Percent Change 2010 - 2019

- Orange: < 0.00%
- Forest Green: 5.01% - 10.00%
- Medium Green: 0.01% - 2.50%
- Gray: 2.51% - 5.00%
- Dark Green: > 10.00%

United States: 6.3% growth

Estimated Components of Population Change

- Natural Increase
- International Migration
- Domestic Migration

Graph showing trends from 2000 to 2019.
Massachusetts Population Change, with and without Immigrants

Four states lost population this past decade, and nine more would have lost population without immigration.

Percent change in population, 2010-2019
Source: U.S. Census Bureau, Population Estimates • By The New York Times
Massachusetts is a leader in job growth in the Northeast.

Change in Employment by State, 2010-2018

Unemployment rate is heading to historic low

Monthly Unemployment Rates in Massachusetts and the United States, January 2000-August 2019, Seasonally adjusted

Source: Massachusetts Executive Office of Labor and Workforce Development, Local Area Unemployment Statistics
Massachusetts and U.S. Industry Mix, 2018

<table>
<thead>
<tr>
<th>Industry</th>
<th>Massachusetts</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care and Social Assistance</td>
<td>18.1%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>10.1%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>9.9%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Professional and Technical Services</td>
<td>9.2%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>8.7%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>6.8%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Administrative and Waste Services</td>
<td>5.2%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>4.8%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Construction</td>
<td>4.7%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>3.8%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>3.5%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Other Services, Except Public Administration</td>
<td>3.4%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>3.1%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Information</td>
<td>2.7%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>2.1%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Arts, Entertainment, and Recreation</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>1.3%</td>
<td>1.6%</td>
</tr>
<tr>
<td>All Other</td>
<td>0.7%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

Note: All Other includes: Utilities; Agriculture, Forestry, Fishing, & Hunting; Mining, Quarrying, and Oil & Gas Extraction; and Unclassified industries.
## Top 10 States by Educational Attainment

<table>
<thead>
<tr>
<th>Rank 2018</th>
<th>State</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MASSACHUSETTS</td>
<td>44.5</td>
</tr>
<tr>
<td>2</td>
<td>Colorado</td>
<td>41.7</td>
</tr>
<tr>
<td>3</td>
<td>Maryland</td>
<td>40.8</td>
</tr>
<tr>
<td>4</td>
<td>New Jersey</td>
<td>40.8</td>
</tr>
<tr>
<td>5</td>
<td>Connecticut</td>
<td>39.6</td>
</tr>
<tr>
<td>6</td>
<td>Virginia</td>
<td>39.3</td>
</tr>
<tr>
<td>7</td>
<td>Vermont</td>
<td>38.7</td>
</tr>
<tr>
<td>8</td>
<td>New York</td>
<td>37.2</td>
</tr>
<tr>
<td>9</td>
<td>New Hampshire</td>
<td>36.8</td>
</tr>
<tr>
<td>10</td>
<td>Minnesota</td>
<td>36.7</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey, 2018 1-Year Estimates
NIH Research and Development

Top 5 State Leaders in NIH Funding (in $2018), 1998-2019

Sources: U.S. Department of Health and Human Services, National Institutes of Health (NIH) Research Portfolio Online Reporting Tools (RePORT), NIH Awards by Location & Organization, accessed 10/15/2019; UMDI analysis.
NIH Research and Development Per Capita

Top 5 State Leaders in per capita NIH Funding (in $2018), 1998-2019

Research and Development as a Share of GDP by State

R&D as a Share of GDP by State, 2010-2016

Source: National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (various years), data as of June 2019
Entrepreneurship: Growth in Venture Capital

Massachusetts Venture Capital Funding, 2010-2019 by Quarter

Massachusetts’ High-tech Rank

Massachusetts’ Ranking among Other High Tech States

<table>
<thead>
<tr>
<th>2018 Rank</th>
<th>Research and Development Inputs</th>
<th>Technology Concentration and Dynamism</th>
<th>Technology and Science Workforce</th>
<th>Composite Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Massachusetts</td>
<td>Utah</td>
<td>Maryland</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>2</td>
<td>Maryland</td>
<td>California</td>
<td>Washington</td>
<td>Colorado</td>
</tr>
<tr>
<td>3</td>
<td>Colorado</td>
<td>Massachusetts</td>
<td>Massachusetts</td>
<td>Maryland</td>
</tr>
<tr>
<td>4</td>
<td>California</td>
<td>Washington</td>
<td>Colorado</td>
<td>California</td>
</tr>
<tr>
<td>5</td>
<td>California</td>
<td>Colorado</td>
<td>Delaware</td>
<td>Utah</td>
</tr>
<tr>
<td>6</td>
<td>Connecticut</td>
<td>Georgia</td>
<td>California</td>
<td>Washington</td>
</tr>
<tr>
<td>7</td>
<td>Rhode Island</td>
<td>Virginia</td>
<td>Minnesota</td>
<td>Delaware</td>
</tr>
<tr>
<td>8</td>
<td>Pennsylvania</td>
<td>Texas</td>
<td>Virginia</td>
<td>Minnesota</td>
</tr>
<tr>
<td>9</td>
<td>Delaware</td>
<td>Arizona</td>
<td>Utah</td>
<td>New Hampshire</td>
</tr>
<tr>
<td>10</td>
<td>Washington</td>
<td>North Carolina</td>
<td>Oregon</td>
<td>Oregon</td>
</tr>
</tbody>
</table>

*North Carolina and Massachusetts were tied for fifth place in Technology Concentration and Dynamism.
Logan Airport Passenger Volumes Surging

Overall Passenger Volume in Logan International Compared to Airports of Similar Size, 2010-2018

Source: U.S. Department of Transportation, Federal Aviation Administration Air Carrier Activity Information System (ACAIS), Passenger Boarding (Enplanements) and All-Cargo Data for U.S. Airports; Retrieved from Wikipedia; https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/. Years represent full calendar years (CYs).
Change in International Nonstop Flights Originating from Logan Airport, 2010-2018
Job growth has slowed statewide.

Annual Average Employment in Massachusetts by NAICS Supersector, 1990-2018

The economy slowed in the fall but things have since seemed to stabilize.

AIM Business Confidence Index, December 2018-December 2019

Canada, China, and Mexico are our top trading partners for exports and imports.

Massachusetts’ 2018 Top Trading Partners (in $2018)

Source: WISERTrade; UMDI analysis
The state is performing well overall…

but these impacts are not felt evenly.
Industry Mix in Greater Boston vs. Rest of State

Share of Employment by Industry in Massachusetts Compared to the U.S., 2010 and 2018

Unemployment by Educational Attainment

Unemployment Rates by Educational Attainment, Massachusetts

Source: Current Population Survey

12-Month Moving Average.
Massachusetts Population Growth, 2010-2018

State: 5.1%

Source: UMDI mapping analysis, U.S. Census Bureau, Population Division, April 1, 2010 to July 1, 2018, Annual Estimates of the Resident Population
Greater Boston is driving the state’s population growth.

Population Growth Index, 2010-2018 (2010=1.00)

Source: U.S. Census Bureau; UMDI analysis. Note: Greater Boston is the sum of Suffolk and Middlesex counties.
Massachusetts Employment Growth, 2010-2018

Source: UMDI mapping analysis, Bureau of Labor Statistics (BLS), 2010 to 2018 Quarterly Census of Employment and Wages (QCEW)
Greater Boston is also driving the state’s job growth.

Employment Growth Index, 2010-2018 (2010=1.00)

Home Sale Prices by Region

Source: 2000-2017 Massachusetts Association of Realtors (MAR)
The share of households that were cost burdened increased between 1999 and 2010, and remained elevated among renter households through 2017.

Summary of Current Issues Facing Massachusetts

• Housing affordability
• Aging population & attracting and retaining young workers
• Investment in public education and infrastructure
• Transportation reliability and rising congestion
• Business confidence in the state—tariffs, trade, uncertainty of federal policy
• Geographic and social equity of economic opportunity
Thank you!

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