



# Mass Benchmarks

A JOURNAL OF THE MASSACHUSETTS ECONOMY

The Economic Evolution of  
Massachusetts: Current Trends  
and Future Challenges

What Keeps You Up at Night?  
A *MassBenchmarks* Twentieth  
Anniversary Panel Discussion



MassBenchmarks, published by the University of Massachusetts in cooperation with the Federal Reserve Bank of Boston, provides timely information about the Massachusetts economy, including reports, commentary, and key data about the state's regions and industry sectors that comprise them.

The editors invite queries and articles on current topics involving the Massachusetts economy, regional economic development, and key growth industries from researchers, academic or professional economists, and others. A topical outline and brief biography of the author should be sent to [info@donahue.umassp.edu](mailto:info@donahue.umassp.edu).

A complete list of past issues, latest news, updates, and additional research on the Massachusetts economy can be found at [www.massbenchmarks.org](http://www.massbenchmarks.org).



4



12



16

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# Contents

---

## **2 Letter from the President**

*Martin T. Meehan*

## **4 The Economic Evolution of Massachusetts: Current Trends and Future Challenges**

*Alan Clayton-Matthews and Robert Nakosteen*

While Massachusetts continues to thrive with its dynamic mix of high-technology and education-intensive industries, it must come to terms with significant challenges. These include a slackening labor supply and disparities in a geographically imbalanced economy dominated by Greater Boston's world-class competitiveness.

## **12 What Keeps You Up at Night?: A *MassBenchmarks* Twentieth Anniversary Panel Discussion**

*Lou Wigdor*

In a wide-ranging panel discussion, members of *MassBenchmarks*' editorial board explored diverse policy issues, including strategic investments in middle- and low-skill education and training and the influence of prospective federal taxation and immigration policies on the state's economy. Panelists also explored growing labor market scarcities and striking economic disparities among the state's citizenry.

## **16 The *MassBenchmarks* Editorial Board**

Representing academe, industry, and the Federal Reserve Bank of Boston, *MassBenchmarks*' nineteen editorial board members bring diverse policy perspectives to the table. Through their ongoing research and information sharing—including periodic roundtable discussions—they ensure that *MassBenchmarks* covers all the bases in its timely dissection of the Bay State's economy.

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# 20

## MassBenchmarks

20TH ANNIVERSARY



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### FROM THE PRESIDENT

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Over the past two decades, *MassBenchmarks* has been a stalwart feature of our efforts to support economic development. Since its founding in 1997, a dedicated team of faculty and staff, working in collaboration with our valued colleagues from the Federal Reserve Bank of Boston, have made *MassBenchmarks* *the* source for timely research and analysis on the condition of and prospects for the Massachusetts economy.

Twenty-five years ago, former Governor William Weld turned to the University of Massachusetts system for support in developing a statewide economic strategy. The plan came to be known as “Choosing to Compete,” and when it became clear that state and regional leaders lacked access to the data and analyses needed to implement the strategy, then Vice President for Economic Development, Thomas Chmura; Lynn Griesemer, Associate Vice President for Economic Development and Executive Director of the UMass Donahue Institute; and Professor Robert Nakosteen, UMass Amherst Isenberg School of Management, conceptualized an economic journal for the Commonwealth. Upon presenting this concept to the Governor’s Economic Council, UMass President Michael Hooker and Boston Fed President Catherine Minehan agreed to work together in a collaboration that became *MassBenchmarks*.

In the years since, the journal has grown in influence to become more than just a publication. In 2002, in response to the need for more timely information in between journal releases, *MassBenchmarks* began releasing its Current and Leading Economic Indices on a quarterly basis. These indicators, which were created by and have been produced since by former UMass Boston Professor and now Northeastern University Professor Alan Clayton-Matthews, quickly became *the* barometer for state economic performance. Several years later, inspired by the Federal Reserve Board’s “Beige Book” releases, *MassBenchmarks*’ highly regarded editorial board began releasing quarterly assessments of state economic conditions. The innovations greatly enhanced the impact of the journal and now represent a commitment to ensuring that *MassBenchmarks* remains a timely and valued source of information on economic conditions in the Commonwealth.



The UMass President's Office and the UMass Donahue Institute have overseen the journal's production since the first issue, and there have been contributors without whom it is difficult to imagine *MassBenchmarks* being nearly as successful or impactful. While it is impossible to acknowledge everyone who has left their mark on *MassBenchmarks*, some deserve special thanks:

- UMass Presidents Michael Hooker, William Bulger, Jack Wilson and Robert Caret, as well as Lynn Griesemer from the UMass Donahue Institute, who have provided invaluable support throughout the history of the journal.
- UMass Amherst Professor Robert Nakosteen, who has served as executive editor from day one and without whom *MassBenchmarks* would not exist.
- Northeastern University Professor Alan Clayton-Matthews, senior contributing editor, who has served as a lead analyst and thought-leader for *MassBenchmarks* since the beginning.
- UMass Dartmouth Professor Michael Goodman, who has helped extend the reach and impact of *MassBenchmarks*, first as managing editor from 2001-09 and as a co-editor since joining the faculty.
- All past and present Editorial Board members for their contributions to quarterly meetings and ongoing insights, further strengthening the journal and its releases.
- The UMass Donahue Institute's Rebecca Loveland, now managing editor, who has been intimately involved in the production of every issue, and Mark Melnik, serving as senior managing editor.
- Faculty throughout the UMass system who have become experts in the regional economies that surround the campuses they serve.
- Our partners at the Federal Reserve Bank of Boston, including Presidents Catherine Minehan and Eric Rosengren, and former and current co-editors Lynn Browne, Yolanda Kodrzycki and Katharine Bradbury.

In these uncertain times, Massachusetts needs *MassBenchmarks* as much if not more today than it did two decades ago. Then as now, the University of Massachusetts stands ready to support the economic development efforts of our Commonwealth and we look forward to *MassBenchmarks* being a central part of those efforts for many years to come.

Martin T. Meehan, President  
University of Massachusetts

THE STATE OF THE STATE ECONOMY

# ECONOMIC CURRENTS



## **MASSBENCHMARKS CELEBRATED FOR 20 YEARS OF SERVICE TO THE MASSACHUSETTS ECONOMY**

September 26 marked a significant anniversary for *MassBenchmarks*, which has shed light on the state's economy for two decades. An initiative of the University of Massachusetts Donahue Institute's Economic & Public Policy Research group and the Federal Reserve Bank of Boston, *MassBenchmarks* mobilizes economic policy and data experts in its timely distribution of reports, commentary, and analysis.

The celebration featured welcoming statements by UMass President Marty Meehan and Housing and Economic Development Secretary Jay Ash. *MassBenchmarks'* executive editor, Robert Nakosteen, and its senior contributing editor, Alan Clayton-Matthews, dissected recent state economic trends. And members of the *MassBenchmarks* Editorial Board discussed a host of economic issues exploring "What keeps you up at night?"

# The Economic Evolution of Massachusetts: Current Trends and Future Challenges

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PROFESSORS CLAYTON-MATTHEWS AND NAKOSTEEN IDENTIFY TWO MAJOR ECONOMIC THEMES EMERGING OVER TWENTY YEARS. MULTIPLE INDICATORS POINT TO A SLACKENING LABOR SUPPLY DRIVEN BY RETIRING WORKERS, HIGH COSTS OF LIVING AND RESTRICTIONS ON IMMIGRATION. THE STATE MUST ALSO FACE DISPARITIES IN A GEOGRAPHICALLY IMBALANCED ECONOMY DOMINATED BY GREATER BOSTON, BEYOND WHICH MANY COMMUNITIES LACK POSITIVE ECONOMIC DRIVERS.

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ALAN CLAYTON-MATTHEWS AND ROBERT NAKOSTEEN

## INTRODUCTION

Massachusetts has gained stature on the domestic and international stages over the past twenty years as a technological and economic powerhouse. Today, numerous composite rankings and indicators point to the Commonwealth as the national leader in researching, developing, and assimilating new technologies. These capabilities have been nourished by Massachusetts' historical emphasis on education. Currently, 42 percent of adults in the state hold a bachelor's degree or higher, far above the 31 percent national average. The Commonwealth is arguably the leading world hub for the life sciences industry and a center of finance. It has become a leading destination for overseas visitors. Today, Massachusetts' \$500 billion economy is 50 percent larger than it was, in real terms, in 1997. Since 1997, Massachusetts has become the second wealthiest state in terms of per capita income, with growth only exceeded by a handful of much smaller, mostly energy-focused states.

The dynamism of the Massachusetts economy has produced strong job growth, particularly since the trough of the 2009 recession. That said, the structure of the economy has changed from 1997 on, with a higher share of workers in healthcare, professional services, education,

and accommodations and food services. While those industries expanded jobs, fewer are working in manufacturing and finance than in 1997. Note that, due to productivity improvements, both manufacturing and finance are producing more value-added goods and services now than in 1997.

The evolving state economy along with shifting trends in the national and global economies have created new labor market realities for the Commonwealth. In his discussion, Alan Clayton-Matthews, co-author and long-time Massachusetts economy researcher, explores whether after many years of expansion, the state is running out of slack in the labor market, and facing worker shortages in the future.

While Massachusetts' economic expansion is enviable, its prosperity has not been evenly distributed, regionally and between different income groups. In his accompanying analysis, Robert Nakosteen describes the geographic dimension of this divergence. The industry mix in the metropolitan Boston area is robustly representative of the high-technology education-intensive economy. Unendowed with these dynamic industries, the remainder of the state will continue to face uphill challenges.

**THE STATE OF THE LABOR MARKET**  
**How Much Slack Is Left and Demographic Constraints to Future Labor Force Growth**

The unemployment rate in the state now stands at 3.3 percent. While this is good news for workers and signals a healthy state economy, employers may be facing difficulties in finding qualified workers to hire. The downside of a “hot” labor market can be shortages of available qualified workers.

Since the end of the Great Recession in the state around August of 2009, the unemployment rate has fallen from a high of 8.8 percent. Over the same period, total employment has grown by 355,600, the working age population has increased by 326,700, and the labor force has grown by 208,100. In other words, employment in Massachusetts has grown considerably faster than the working age population, and almost twice as fast as the labor force. The problem for employers, of course, is that at some point the labor force constraint will become binding.

To what extent is a pending or ongoing labor shortage supported by the data? We start with data showing the percentage of state residents working full time, defined as at least 35 hours per week. The benchmark is comparable data for the nation. Over the time interval covered, the state percentage working full time is consistently lower

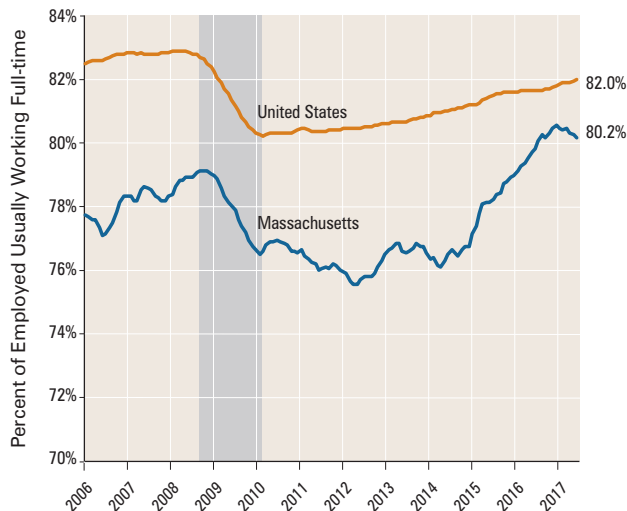
than the national percentage. However, the gap has been closing, with the state number almost converged with the national figure, suggesting a diminishing pool of available workers in the state.

Another dimension of the issue is number of hours typically worked by residents. These data, again compared with the national trend of hours worked, show a similar pattern of the disappearance of labor market slack over time.

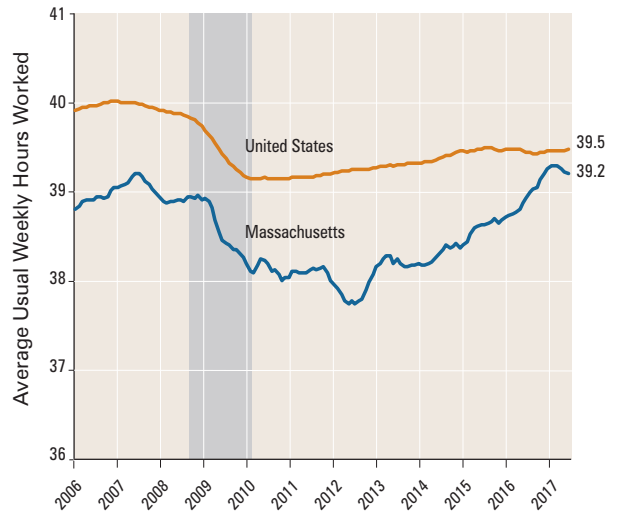
A final way to gauge labor market slack is by examining a comprehensive measure of unemployment/underemployment. The U-6 unemployment rate is based upon the “headline unemployment rate” (termed the U-3 unemployment rate), but adds “marginally attached workers” to the computation. Combined, the unemployed and the marginally attached represent a potential pool of available workers. As figure 3 suggests, this pool, after rising sharply at the onset of the Great Recession, has diminished consistently over time. The state and the nation have exhibited similar patterns.

In the past, it has not been possible to fill positions in these sectors with homegrown talent, so the in-migration of workers is vital. In-migration from domestic origins has long been characterized by significant churning: lots

**Figure 1. Percentage of Employed Residents Usually Working Full-time (35+ hours) Massachusetts and the United States, January 2006 – October 2017**



**Figure 2. Average Usual Weekly Hours of Residents Massachusetts and the United States, January 2006 – October 2017**



Source: U.S. Bureau of Labor Statistics, Current Population Survey (CPS); Shaded bar indicates period of recession. Calculations by Alan Clayton-Matthews.



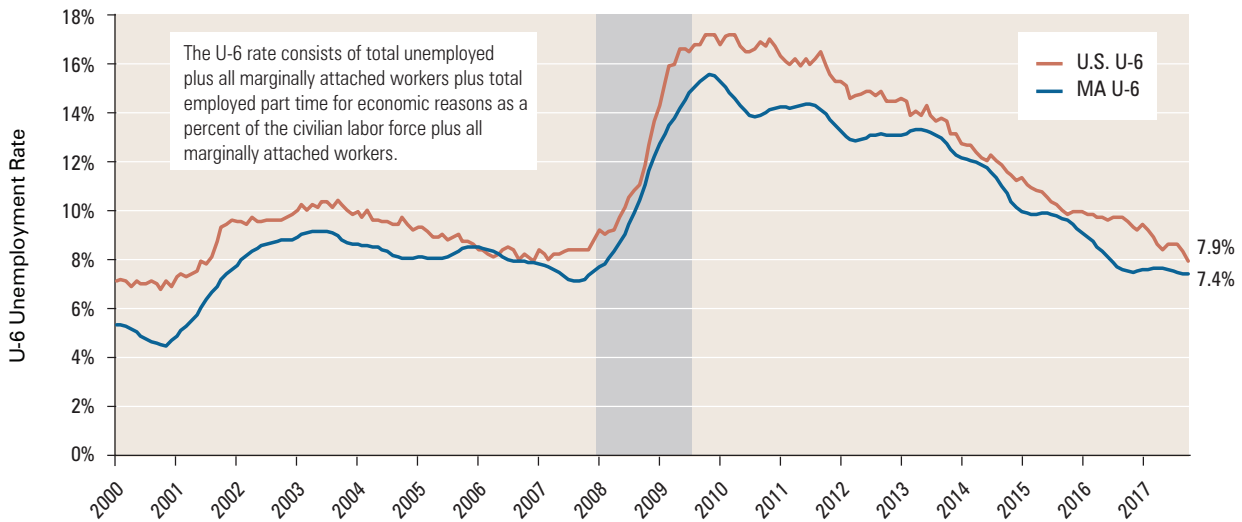
of people coming in and lots of people leaving. It is not uncommon to have college graduates stay in the state to work upon graduation, only to leave once they form families and seek appropriate housing. The cost of housing, especially in the metropolitan Boston area, is clearly implicated in the state's inability to retain young workers and will contribute increasingly to future labor shortages.

Filling the gap left by domestic out-migration has been a consistently positive flow of international immigrants. They have filled jobs in both the education-intensive sectors of the economy and in lower-skilled areas, often in

the hotel and restaurant industries. Impending restrictions on immigration will further contribute to worker shortages. These patterns can be seen in figure 4.

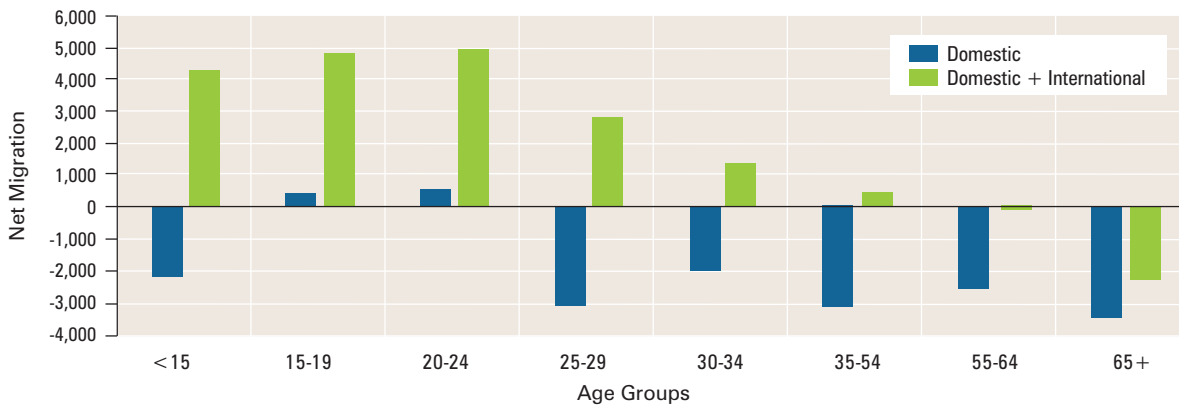
The data reveal that slack in the labor market has been diminishing since the end of the recession. The prospect of labor shortages will only increase over the long term. The state's population is older and growing more slowly than the nation as a whole, with relatively few workers entering the work force and a large group of retirees leaving or poised to leave the work force. This is a problem that will not go away soon.

**Figure 3. U-6 Unemployment Rate, Massachusetts and the United States  
January 2000 – October 2017**



Source: U.S. Bureau of Labor Statistics. The unemployment rate is the official unemployment rate as released by the BLS. The underemployment rate is from the monthly CPS surveys. The Massachusetts underemployment rate is seasonally adjusted and smoothed by Northeastern University. Shaded bar indicates period of recession.

**Figure 4. Average Annual Net Migration by Age  
Massachusetts, 2011 – 2015**



Source: U.S. Census, American Community Survey, PUMS. Calculations by Alan Clayton-Matthews.

**THE TWO ECONOMIES OF MASSACHUSETTS:  
Boston-Cambridge Region and the Rest of the State**

Two themes have figured prominently in *MassBenchmarks* from the beginning—the state’s dynamic mix of high-technology and education-intensive industries; and the uneven sharing across the state of the prosperity generated by those forces.

In the eastern part of the state, an economy has prevailed with tight labor markets, high wages and salaries, high levels of education, and a complex of firms that have spawned and made the most of agglomeration effects. World-class universities and hospitals have also enriched this economic fabric.

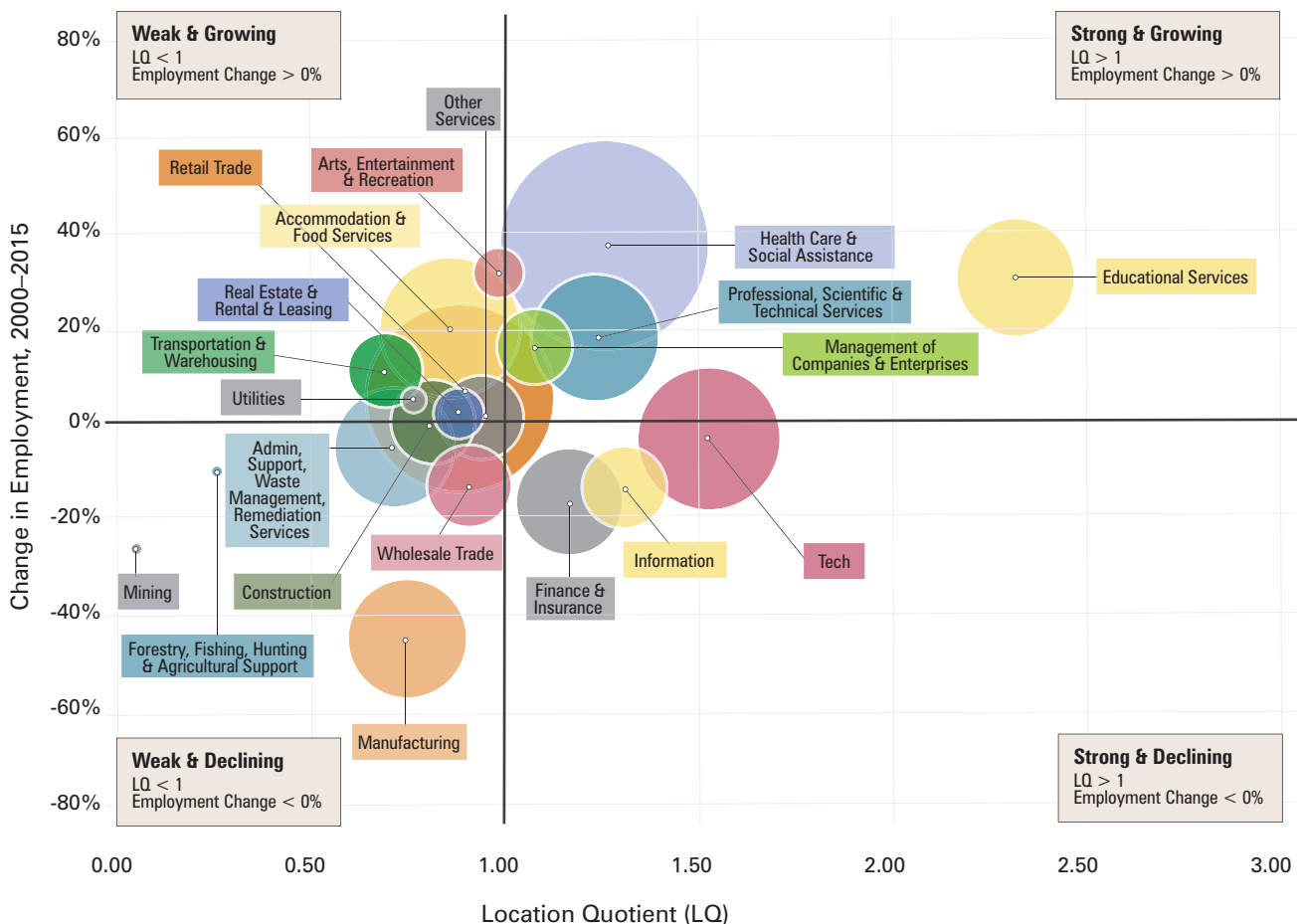
In contrast, many communities beyond metro Boston have come up short on economic dynamism and

prosperity. Their fate has brought stubbornly high unemployment, a dearth of quality jobs and economic opportunities, and an absence of positive economic drivers.

One way to demonstrate this is with Location Quotients, or LQs. An LQ represents the ratio of the percentage of the state’s employment in a given sector to the percentage of national employment in the same sector. For example, if both the state and the nation have 8 percent of their employment in a sector, the LQ will equal one. If the state has a larger percentage of its employment than the nation, the LQ will exceed one.

Employing a bubble graph of LQs depicting employment in specific industries from 2000 to 2015, we can compare Massachusetts’ recent fortunes in those sectors with the U.S. as a whole.

**Figure 5. Sector Concentrations in Massachusetts, 2015**  
*LQs show importance of industry sector relative to the U.S.*



Source: U.S. Census, County Business Patterns; UMDI analysis. Circle size represents the share of that industry’s employment relative to the total employment in that geography in 2015. The concept for the identification of clusters was adapted from PlanSmart NJ’s report *What Will It Take to Support New Jersey’s Industry Clusters?* (April 2013), p. 18 [http://www.plansmartnj.org/wp-content/uploads/2013/05/IndustryClusterFinalReport4\\_30.pdf](http://www.plansmartnj.org/wp-content/uploads/2013/05/IndustryClusterFinalReport4_30.pdf)

The LQs in figure 5 are measured on the horizontal axis; the vertical line is set to indicate LQs equal to one. The second dimension of the graph, on the vertical axis, shows the change in employment in the sector from the year 2000 through 2015. The size of the bubble represents the percentage of employment in the sector relative to total employment in 2015.

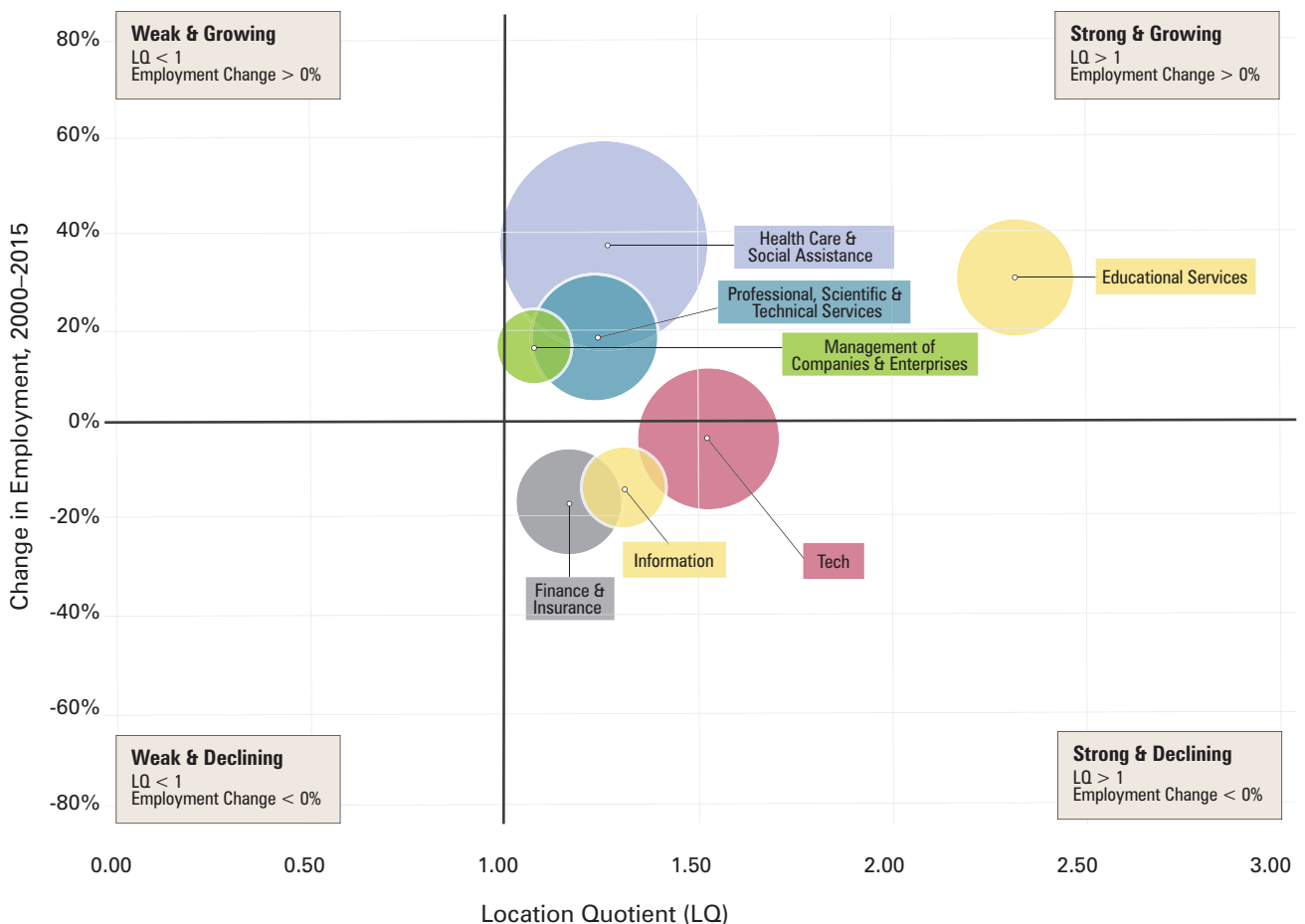
The sweet spot on the graph is in the upper right-hand quadrant. These bubbles represent sectors of the economy that are more prominent in the state than nationally, and that have experienced growth in employment during the indicated period. The sectors in this quadrant represent a sort of honor role of education-intensive and high-technology sectors: health care, educational services, and professional, scientific, and technical services. These industries thrive due to increasingly strong

demand—domestic and global—for their output. As the demand for their output grows, the state becomes better and better positioned to take advantage of this growth.

Sectors that are more prominent in Massachusetts but have declining employment include Tech—an eclectic grouping that includes some high-end manufacturing (note the double counting), telecommunications carriers, software publishers, computer systems designers, among others; and only bordering on the first quadrant. The Information sector, part of which is captured in the Tech definition, is declining (mostly due to the decline of print media), but remains more important here than nationally. The Finance sector, which took a beating during the Great Recession, has also lost jobs in the past.

**Figure 6. Prominent Sectors in Massachusetts, 2015**

*These sectors have a higher concentration of employment relative to the U.S.*



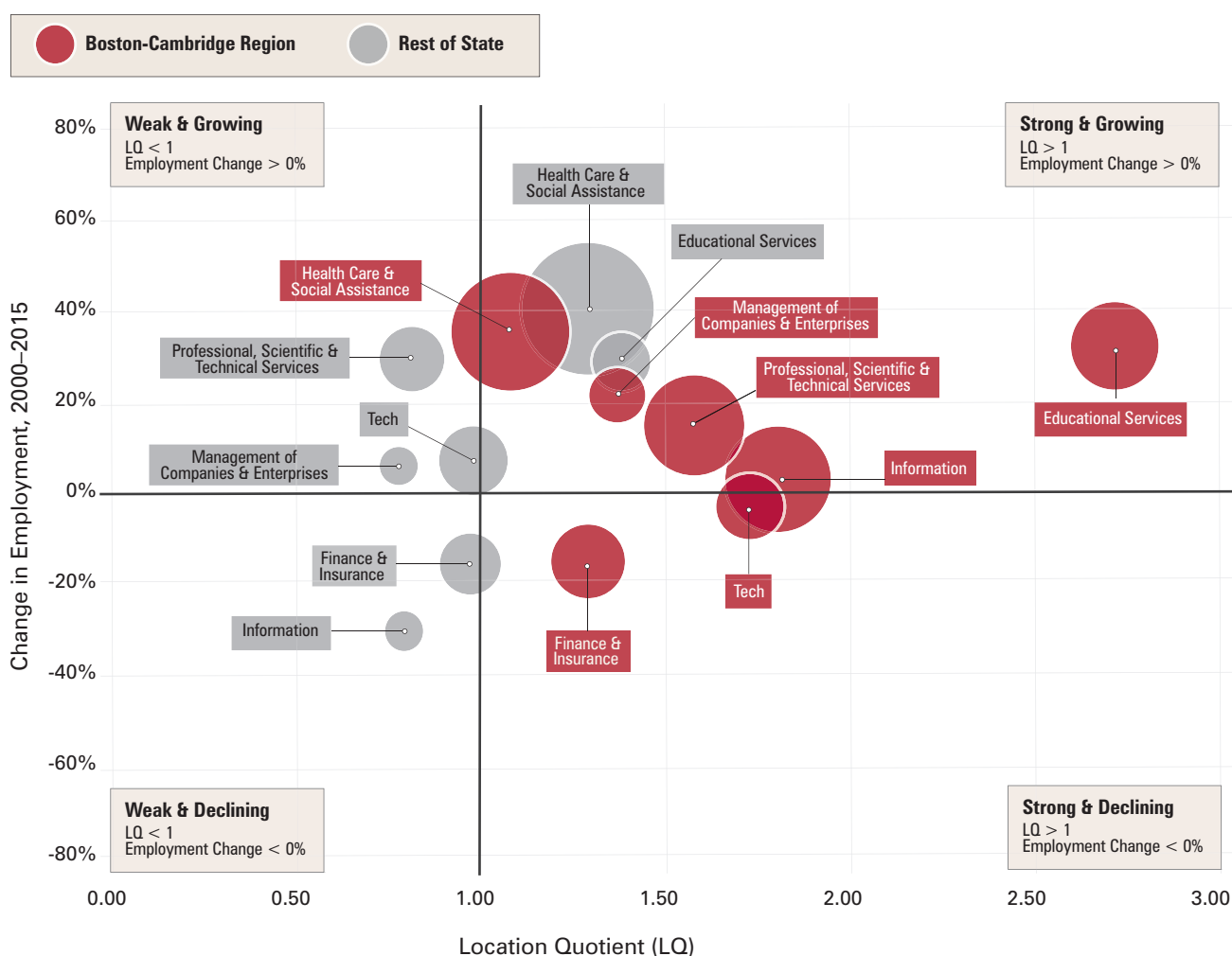
Source: U.S. Census, County Business Patterns; UMDI analysis. Circle size represents the share of that industry’s employment relative to the total employment in that geography in 2015. The concept for the identification of clusters was adapted from PlanSmart NJ’s report *What Will It Take to Support New Jersey’s Industry Clusters?* (April 2013), p. 18 [http://www.plansmartnj.org/wp-content/uploads/2013/05/IndustryClusterFinalReport4\\_30.pdf](http://www.plansmartnj.org/wp-content/uploads/2013/05/IndustryClusterFinalReport4_30.pdf).

It is striking, however, how unevenly these dynamic sectors of the economy spread across the state. Figure 7 illustrates how the Commonwealth's progress is predominantly *Boston-centric*. The figure separates the LQ bubbles geographically, for the Boston-Cambridge region (in red) and for the remainder of the state (in grey). Here, the Boston-Cambridge region is comprised of Suffolk and Middlesex counties. For each of the sectors, the LQ for the Boston-Cambridge region is to the right of the vertical axis of the graph. This means that in each of the sectors, the Boston-Cambridge region has a larger fraction of its employment than does the nation. In each case, in the remainder of the state the LQ is to the left of the vertical axis of the graph, except for the mainstay sectors of educational and health care services. This means that for these vibrant—or at least stable—engines of growth, the state beyond Boston does not benefit to the

same degree. The prosperity generated by these sectors is disproportionately concentrated within a smaller geographic region. Note that the Health Care sector, which is so prominent in Boston, appears more successful in the remainder of the state. In fact, the Boston-Cambridge region is especially strong in specialty hospitals. In contrast, employment in the rest of the state is significantly concentrated in social assistance services as well as in residential care and nursing care facilities.

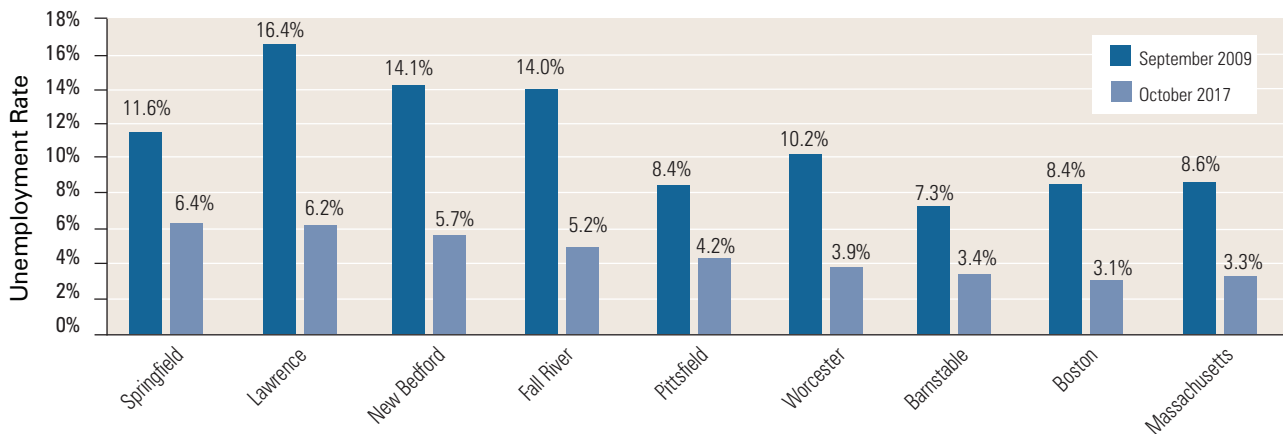
The consequences of this pattern of industry mix are a divergence of economic prosperity in metropolitan Boston compared with the remainder of the state. Unemployment rates are one indicator of this divergence. These have been consistently lower in the Boston area, dramatically so during the Great Recession, and persistently so up to the present.

**Figure 7. Sector Concentrations by Region, 2015**  
Sector strength in the Boston-Cambridge region and the rest of the state



Source: U.S. Census, County Business Patterns; UMDI analysis. Circle size represents the share of that industry's employment relative to the total employment in that geography in 2015. The concept for the identification of clusters was adapted from PlanSmart NJ's report *What Will It Take to Support New Jersey's Industry Clusters?* (April 2013), p. 18 [http://www.plansmartnj.org/wp-content/uploads/2013/05/IndustryClusterFinalReport4\\_30.pdf](http://www.plansmartnj.org/wp-content/uploads/2013/05/IndustryClusterFinalReport4_30.pdf).


**Figure 8. Unemployment Rates by City, Depth of the Recession to October 2017**  
*Not Seasonally Adjusted*



Source: The Massachusetts Executive Office of Labor and Workforce Development (EOLWD)

Taken as a whole, the data paint a portrait of a dynamic, prosperous economy in the Boston-Cambridge region. They reflect the disproportionate presence of education-intensive and high-technology sectors, while the rest of the state offers a very different, less vibrant industry mix, and subsequently less economic vibrancy and prosperity. Viewed against the state's exceptional prosperity, Massachusetts' regional disparities are truly ironic.

## CONCLUSION

The 20th anniversary of *MassBenchmarks* is a landmark event for the publication. From the beginning, we have strived to present and analyze both the strengths and weaknesses of the Bay State's economy. Our goal has always been to achieve a better understanding of the features and consequences of our economic landscape. That is why we will continue to emphasize a robust, multisided narrative. It is our mandate, our responsibility. Looking ahead to the next twenty years, we aim to continuously improve *MassBenchmarks*' analytical value. And be well assured—we will do that for the benefit of *all* who live and work in this state from Boston Harbor to the Berkshires. 

*ALAN CLAYTON-MATTHEWS is an associate professor of economics and public policy at Northeastern University and Senior Contributing Editor of this journal.*

*ROBERT NAKOSTEEN is a professor of economics at the Isenberg School of Management at UMass Amherst and Executive Editor of this journal.*



## What Keeps You Up at Night?: A *MassBenchmarks* Twentieth Anniversary Panel Discussion

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LOU WIGDOR

*At its 20th anniversary celebration, MassBenchmarks editors and members of its editorial board explored policy issues in a wide-ranging panel discussion. The panel captured the spirit and substance of MassBenchmarks' regular "Notes from the Board" feature, gleaned from periodic gatherings of the journal's editorial board members. The panel's eclectic concerns encompassed many highlights. Among those insights, the Bay State must do better in coordinating strategic investments in middle- and low-skill education and training that complements its high-performing sectors. With that said, Boston itself has the highest economic inequality among large American cities. As for stalled wage competition in highly skilled jobs, higher wages will ensue with vanishing slack in the labor supply.*

*Prospective Federal policy on taxation and immigration are wild cards for Massachusetts. Demographic flows from immigration, in fact, are crucial to labor force growth. To date, well-educated professionals in the state's high-reward, high-performing sectors have benefitted greatly, but others are being left behind. In that scenario, leaving 45 to 55 percent of the population behind is unacceptable. In other words, we must plan for an economy where not everyone will earn a four-year college degree.*

## INTRODUCTION

“Inequality of opportunity reduces the economy’s potential.” That pronouncement, by Boston Federal Reserve senior economist and *MassBenchmarks* coeditor **Katharine Bradbury**, gave propulsion and direction to an animated panel discussion by *MassBenchmarks* editorial board members at the journal’s 20th anniversary celebration on September 26. Moderated by Donahue Institute Director of Economic and Public Policy Research and the journal’s senior managing editor **Mark Melnik**, the panel of five economists explored current and future challenges, frequently echoing Dr. Bradbury’s concerns. Their remarks followed Melnik’s question: *What issues keep you up at night?*

Research, Bradbury continued, has repeatedly revealed inequality of opportunity as a culprit in limiting an individual’s prospects, which ultimately hampers the economy’s growth and performance. Compared with children from lower-income and working class families, their higher-income counterparts, she remarked, frequently enjoy access to better prenatal and childhood healthcare. They also gain an edge from their own superior “school readiness,” from supplementary educational “enrichment” activities, and from superior opportunities and connections in their neighborhoods and schools.

Bradbury recounted a conference on inequality of opportunity in 2014 that she and fellow *MassBenchmarks* board member **Robert Triest**, a vice president and senior economist with the Boston Fed, had organized at their employer. The conference, which focused on national conditions, yielded policy lessons that shed light on potentially fruitful initiatives, including high-quality preschools, effective health insurance, food stamps, income tax credits, neighborhood quality, and labor market policies to foster and reward development of marketable skills.

## A DEMAND-SIDE PERSPECTIVE

“The inequality issue in Boston and the Boston metro area is extremely grave,” observed fellow panelist **Peter Doeringer**, Professor Emeritus of economics at Boston University. “Boston,” he remarked, “is the number one ‘unequal’ large city in America [while] broader metro Boston has the 7th most unequal labor market.”

Doeringer felt compelled, he said, to introduce a demand-side lens on the issue to balance presentations preceding the panel by *MassBenchmarks* editors Nakosteen and Clayton-Matthews, who, he noted, had emphasized the supply side of the story. The demand

side, Doeringer explained, includes hiring and training practices as well as job design. “Massachusetts employers tell you that there are skills shortages all the time,” he remarked. But that, he said, is essentially anecdotal evidence that doesn’t square with what economists would expect to see—i.e., wages should be rising; competition in the labor market should be greater.

Instead, he noted, surveys of employers have revealed scarcity for relatively unskilled blue and white-collar jobs—in both prosperous times *and* recessions (you would expect an abundance of such labor during the latter, he commented). And employers, he said, often cite scarcities in the context of seeking cheaper labor or obtaining H1B visas.

Most of our labor shortages, he continued, are short-term because supply/demand adjustments tend to bring labor into balance, except for highly skilled jobs with long training times or those that require extensive experience. Wages are critical in this process because rising wages can tap into all sorts of labor supplies and draw deeper into those reserves. And, as a market signal, they can stimulate additional training.

“So why aren’t employers raising wages in an expanding economy?” he asked. Answering his own question, he observed, “Most have the ability to do so but don’t because it’s more profitable not to.” Economizing on skills, he said, “partly explains why wages have risen slowly while profits have risen more rapidly. So when will wage competition begin? We seem to be exhausting a lot of our ‘slack.’” In the latest U.S. data, job seekers and available jobs, he said, were at about a 1.1 to 1 ratio—“almost in complete balance.” Compare that with the 6.6 to 1 ratio at the bottom of the Great Recession.

## FEDERAL POLICY: A WILD CARD

While endorsing the social equity challenges of the previous panelists, UMass Dartmouth Professor of Public Policy and *MassBenchmarks* coeditor **Michael Goodman** emphasized another source of insomnia: “the big wild card that is federal policy.” Counterproductive restrictions on demographic flows, notably immigration, he said, threaten the Bay State’s critical dependence on permanent and seasonal foreign-born workers. The latter, he added, include temporary employees in the state’s tourism-related industries in the Berkshires, Cape Cod, and the Islands. Those demographic flows, he underscored, are a key to “making our labor force grow.”

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*“Inequality of opportunity reduces the economy’s potential.”*

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A second disturbing prospect, he continued, involves major proposed changes in federal Medicaid policy. “Massachusetts,” he remarked, “is a Medicaid expansion state, where healthcare expenditures have eaten up an increasing share of the budget.” That has “crowded out lots of investment in other inequality-reducing programs.” For Massachusetts, the stakes of federal cuts to Medicaid, he said, are “profound.”

Proposals involving federal tax policies, he added, have also proved taxing. Current propositions to repeal federal deductions on state and local tax payments would in effect pose a tax increase on the state’s moderate, middle-, and upper-income households, he continued. “We’re already seeing the impact of loose talk about tax policy,” he observed. “It’s part of our unexpected state fiscal shortfall, which can be connected to lower-than-expected capital gains tax receipts.” One source of those shortfalls, he explained, stems from individuals who defer their bonuses and gains from financial investments in anticipation of a more favorable tax climate. “Those activities are not under our control,” Goodman insisted. “We’re controlling what we can in an uncertain, scary world.”

### **MACRO SURPRISES**

“My focus isn’t on Massachusetts but on national and global trends,” observed **Christopher Probyn**, Chief Economist with State Street Global Advisors in Boston. “And I am sleeping reasonably well because global economic conditions have improved.” At the year’s onset, “We were expecting more of the same—a ‘blah’ economic outlook,” he recalled. Growth, he noted, had lately failed to measure up to the long-term averages. But, he continued, “We have seen upside surprises, some in places where you’d least expect them.” That, he said, includes Eurozone growth, which at 2 percent “has accelerated to the best [performance] since 2011.” Japan, he noted, has also experienced growth this year—1.5 percent versus its longer-term trend of 0.6 percent. That has driven Japan’s unemployment rate down to 2.8 percent.

Unfortunately, the U.S. and the UK “have not taken their full part in this recovery,” he lamented. The U.S.,

he said, continues to “plod along” at a little over 2 percent growth, with a hoped-for fiscal stimulus not yet materializing. Still, a rebound in oil prices has helped the U.S. economy. The fracking boom, for example, has helped investment and production. Witness renewed orders by drillers for drill bits from their manufacturers. The bottom line: “Even with no fiscal kick, we have some momentum here.”

### **RECASTING TRAINING**

In its shift from manufacturing to innovation, Massachusetts has been a microcosm of macro trends prevalent in much of the United States, observed **Alicia Sasser-Modestino**, an associate professor in the Department of Economics at Northeastern University. In “taking advantage of an economy of innovation,” we have experienced an accompanying rise in economic inequality, she continued. The well educated in “high-reward, high-performing sectors” have benefitted greatly. But others are being left behind, she said.

“We need to recognize that as a state, we can’t leave the other 45 to 55 percent of the population behind; not everyone will get a four-year college degree,” Sasser-Modestino insisted. “There is, though, a need for middle- and low-skill labor that complements its high-skill counterpart.” That might include, for example, lab technicians who support scientists and surgical technicians and home healthcare aids who complement surgeons.

To that end, she said, we must focus on “not just the highest achievers but on those who are not necessarily college bound but who may be looking for vocational training or apprenticeships.” While the state has made some of those investments, it can do a great deal more, recognizing “that our one natural competitive resource is people,” she emphasized. “Where do we get the most talented people?” she asked. One source is domestic migration, especially when other regions in the country are lagging. But when job growth catches up in those regions, we tend to lose residents. A second source—international immigration—is “a great boon to our state. But immigration policy at the federal level is a big question mark.”

The one thing we can count on, she underscored, is our resident population: “If you grew up in Massachusetts and went to college in Massachusetts, 90 percent of you will stay in Massachusetts. They will be here no matter what. So we may as well equip them with the skills to succeed in the innovation economy.”



## ADDITIONAL INSIGHTS

A brief round of questions from the audience spawned additional insights from the panelists. When an audience member asked whether there was sufficient “appetite” in the state—particularly for state funding—for programs to foster vocational education and apprenticeships, Mike Goodman responded: “If you talk to advanced manufacturers and life sciences firms and ask them what they’re looking for, it’s somebody who can be trained, who has experience, and in many cases who has practical skills, both hard and soft.” Our vocational schools, he added, are a significant source for those skills. The past two gubernatorial administrations, in fact, have made substantial investments in contemporary equipment and other resources, which allow for “training up” for high-demand occupations like skilled machinists.

We’ve demonstrated the will to make some of those capital investments, he continued, but some of our “high-stakes educational accountability measures” have challenged our vocational schools, where they have become the most attractive option for students aspiring to four-year colleges. That is because, he said, the local comprehensive school isn’t keeping up. Vocational schools, he explained, can screen admissions so they can pick the students that they want, resulting in the crowding out by four-year college aspirants of young people who aspire to technical careers. Many vocational school administrators, he remarked, overvalue the higher MCAS scores of those college aspirants.


Offering a “contrarian” perspective, Peter Doeringer characterized the emphasis on training for mid-level jobs as an atavistic economic view that if you create a supply of job skills the demand will follow. “I’m skeptical because mid-level jobs have been disappearing all over the country,” he observed. He called instead for an employer-focused perspective for driving job development and job creation incentives and for targeting high-demand mid-level jobs.

“There’s an old middle and a new middle in the job market,” added Alicia Sasser-Modestino. The former, she said, includes production and traditional manufacturing jobs while the latter embrace areas like health care and high-tech—for example, some of the lab technician jobs. Sasser-Modestino agreed that outdated views continue in some of the vocational programs, particularly in some of the community colleges. “In Massachusetts, we really don’t have a community college system; we have fifteen different fiefdoms with different missions,” she observed.

Some, she noted, are stepping stones to four-year college degrees for [among others] minorities; others invest effectively in workforce development. The bottom line: “Until we get a more comprehensive strategy, it’s going to be very difficult to [address] this newer middle [workforce] demand.”

Mike Goodman added, “We’re [Massachusetts] also growing older faster than most parts of the country... our growing job openings due to retirement dwarf new positions by a factor of three or four.” To that end, “we’re looking around the state at tens of thousands of job openings over the next decade in the ‘old’ middle job category.”

## INFORMING PUBLIC POLICY

“Like much of what we strive to do at *MassBenchmarks*, the above discussion exemplifies our mission to leverage economic thought to shed light on public policy,” notes Robert Nakosteen, the journal’s executive editor. “Our aim—so evident in the panel discussion—is to provide *diverse* perspectives that prove useful both to policy makers and an informed citizenry.” 

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*LOU WIGDOR is Director of Communications with the Isenberg School of Management at the University of Massachusetts Amherst.*



## The *Mass*Benchmarks Editorial Board

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REPRESENTING ACADEME, INDUSTRY, AND THE FEDERAL RESERVE BANK OF BOSTON, MASSBENCHMARKS' NINETEEN EDITORIAL BOARD MEMBERS BRING DIVERSE POLICY PERSPECTIVES TO THE TABLE. THROUGH THEIR ONGOING RESEARCH AND INFORMATION SHARING—including PERIODIC ROUNDTABLE DISCUSSIONS—they ensure that MASSBENCHMARKS covers all the BASES IN ITS TIMELY DISSECTION OF THE BAY STATE'S ECONOMY.

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**Katharine Bradbury** is Senior Economist and Policy Advisor at the Federal Reserve Bank of Boston. Her research focuses on income inequality and income mobility, labor force participation and other labor economics topics, state aid to local governments and other issues of state and local public finance, and the New England regional economy. In addition to her editorial role with *MassBenchmarks*, Bradbury is an editorial board member for *Communities and Banking* (a Boston Fed publication). Prior to joining the Bank in 1981, Bradbury worked as a research associate at the Brookings Institution in Washington, D.C. and at the Institute for Research on Poverty at the University of Wisconsin. Bradbury earned her BA from Carleton College and her PhD from the Massachusetts Institute of Technology.

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**Frederick S. Breimyer**, PhD, is a professional economist with an extensive background in macroeconomic modeling, regional economics, and the conduct of monetary policy. He began his career at the Federal Bank of New York, and later became Chief Economist of State Street Corporation. Following his retirement from State Street, he became the New England Regional Economist for the FDIC. He earned his doctorate from Northwestern University with a specialty in Economic History. During his career, Breimyer served as Chairman of the American Bankers' Association's Economic Advisory Committee. He also served for many years on the U.S. Bureau of Labor Statistics' committees concerning BLS data. Locally, he has been president of the Boston Economic Club, and the New England Economic Partnership. He also served on the Commonwealth's Revenue Advisory Board.

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**Lynn Browne** worked at the Federal Reserve Bank of Boston for thirty-six years, retiring in 2011 as Executive Vice President and Economic Advisor. For much of her career at the Bank, Browne was an economist specializing in issues pertaining to New England. From 1993 to 2001, she was Director of Research and oversaw the Bank's scholarly research and monetary policy analysis. As Executive Vice President, she was responsible for public and community outreach, public information, and employee communications. Browne led a number of special projects, including the Bank's efforts to prevent foreclosures. Since 2012 she has taught a seminar at Brandeis University on policy challenges facing central banks. She has a PhD in economics from MIT.

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**Mary A. Burke** is Senior Economist in the Research Department at the Federal Reserve Bank of Boston. Before coming to the Boston Fed in 2005, she served as an assistant professor of economics at Florida State University. Her research interests include the economics of education, social norms and their influences on behavior, and regional and national labor market trends, including the rise of the gig economy and declining labor force participation. Burke gives regular briefings on the New England economy to public audiences as well as to senior leaders within the Federal Reserve System.

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**Alan Clayton-Matthews** is an associate professor in the School of Policy and Urban Affairs and the Department of Economics at Northeastern University, where he teaches graduate courses in statistics and research methods. He is a senior contributing editor of *MassBenchmarks*. He is also a director of the New England Economic Partnership (NEEP), a group of economists and professionals from academia, business, and government who study and forecast the New England economy. He serves as the Massachusetts forecast manager for NEEP. Clayton-Matthews' applied research interests focus on regional economic development, including analyzing the Massachusetts economy and its structure, development, and short and long-run growth trends. He has a PhD in economics from Boston College.

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**Peter B. Doeringer** is Professor Emeritus of Economics at Boston University, where he served two terms as Associate Dean for Faculty in the College of Arts and Sciences. He previously taught at Harvard University, the London School of Economics, and the University of Paris. His fields of expertise include regional economic development, labor markets, industry economics, and labor-management relations. He contributes regularly to professional journals; is on the editorial boards of the *International Labour Review* and *MassBenchmarks*; and has published eleven books. He is currently completing a book on garment districts and the future of apparel manufacturing in the United States and Europe. Doeringer is a consultant and adviser on employment, human resources, and industrial development policy to government agencies and to international organizations such as the ILO. He is a practicing labor arbitrator and an elected member of the National Academy of Arbitrators. Doeringer was Director of Research of the *Commonwealth of Massachusetts Blue Ribbon Commission on Older Workers*.

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**Robert Farrant** is Distinguished University Professor of History at the University of Massachusetts Lowell and director of the department's graduate program. A labor and industrial historian, he has received numerous awards, including the UMass President's Award for Public Service, several UMass Creative Economy grants and the Massachusetts History Commendation. He was the first professor from the College of Fine Arts, Humanities & Social Sciences to receive the university's Distinguished Professor designation. Farrant has consulted with the United Nations Industrial Development Organization, the International Labour Organization, the Organization for Economic Cooperation and Development, and the International Metalworkers Federation. A Lawrence History Center board member, he has been principal historian on research projects funded by the National Endowment for the Humanities, the Lowell National Historical Park, and the Massachusetts Foundation for the Humanities. His publications include *The Great Lawrence Textile Strike of 1912: New Scholarship on the Bread & Roses Strike*; *The Big Move: Immigrant Voices From a Mill City*, with Christoph Strobel; and *Metal Fatigue: American Bosch and the Demise of Metalworking in the Connecticut River Valley*.

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**Michael Goodman** is Professor of Public Policy and Executive Director of the Public Policy Center at the University of Massachusetts Dartmouth. A leading analyst of the Massachusetts economy, he has authored or co-authored over fifty professional publications on a wide range of public policy issues, including regional economic development, housing policy, demographic, and other applied social science research topics.

Goodman joined the faculty at UMass Dartmouth in 2009 after serving for eight years as the Director of Economic and Public Policy Research at the UMass Donahue Institute and Managing Editor of *MassBenchmarks*. Since joining the faculty, Professor Goodman has served as a co-editor of *MassBenchmarks*. An economic sociologist, Dr. Goodman is a three-time past president of the New England Economic Partnership (NEEP), a non-profit organization that produces semi-annual economic forecasts for each of the six New England states. He earned his MA and PhD degrees at Boston University.

**Yolanda K. Kodrzycki** is a retired vice president and senior economist with the Federal Reserve Bank of Boston. Capping her long career at the Boston Fed, she served as the director of its New England Public Policy Center. The Center conducts research on key economic and policy issues in New England and engages with regional partners in advancing identified policy options.

Kodrzycki served as a resident representative of the U.S. Treasury and Eastern Europe Advisory Program in Warsaw, Poland. She has taught at the Organization for Economic Cooperation and Development Training Center in Budapest, Hungary and at Amherst College. While at the Boston Fed, Yolanda volunteered as president and board member of the New England Economic Partnership and as the Bank's liaison to the American Economic Association Summer Training Program and Pipeline Conference. Kodrzycki joined the editorial board of *MassBenchmarks* at its inception, and served as co-editor from 2007 until 2015. She received her undergraduate degree at Radcliffe College (Harvard University) and her PhD in economics from the University of Pennsylvania.

**Frank Levy** is Rose Professor Emeritus at MIT, retired from teaching and department meetings but not much else. He is currently a Research Associate in the Department of Health Care Policy, Harvard Medical School, and a Faculty Associate at Duke University Robotics. He is a labor economist whose work focuses on how computers are changing the occupational structure and wages. Before joining MIT in 1992, Levy taught for ten years at Cal-Berkeley and eleven years at the University of Maryland at College Park. He also worked for four years at the Urban Institute in Washington, D.C. Levy received his SB in Economics from MIT and an MA and PhD in Economics from Yale University.

**Mark Melnik** is Director of Economic and Public Policy Research at the University of Massachusetts Donahue Institute. In that role, he is Senior Managing Editor of *MassBenchmarks*. Before joining the Institute, Melnik was deputy director for research at the Boston Redevelopment Authority, where he led research teams in demographic and economic research as well as analyses for public policy advisement and decision making with the Boston Redevelopment Authority (BRA) and the City of Boston. Before joining BRA, Melnik was a research associate at the Dukakis Center for Urban and Regional Policy. He also has extensive teaching experience in urban sociology, statistics, and research methods.

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**Christopher Probyn** is Chief Economist at State Street Global Advisors in Boston. In that role, he is responsible for forecasting and analyzing economic events in the world's major economies, and for evaluating their impacts on financial markets. He regularly briefs fixed-income and equity portfolio managers, as well as other corporate personnel on economic matters. He also frequently interacts with clients, preparing and delivering talks on the global economic environment. Previously, Probyn was Director and Senior Economist at UBS in New York City. He has also worked at Midland Bank International in London, Data Resources in Lexington, Massachusetts, and Salomon Brothers, in both London and New York City. Probyn obtained his BA at Heriot-Watt University, Edinburgh, his MA from the University of Manchester, and his PhD from the London School of Economics.

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Previously, Modestino was a Senior Economist at the Federal Reserve Bank of Boston, where she led numerous research projects on regional economic and policy issues for the New England Public Policy Center. In 2015 she served on a Massachusetts state task force aimed at improving the workforce development system to serve populations with chronically high unemployment. Recently, she was appointed by Governor Baker to serve as a board member of the Massachusetts Housing Partnership. Modestino holds both a master's degree and a PhD in Economics from Harvard University.

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**David G. Terkla** is Dean of the College of Liberal Arts and a Professor in the Economics Department and the School for the Environment at the University of Massachusetts Boston. In addition to his many writings on the New England fishing industry, he has written a book and several articles on non-traditional cost factors in local economic development. He has also written on industry clusters and the location decisions of new Japanese plants in the United States.

Terkla has been involved in projects related to environmental management and local and regional economic development issues. These include valuation of uses of resources in Massachusetts and Cape Cod Bay, analysis of protection policies for water dependent uses on urban waterfronts, analysis of potential conflicts between tourism and fishing industries in Gloucester, and other concerns. Terkla serves on the Scientific Advisory Committee for the Massachusetts Ocean Management Plan and the Boston Harbor Dredging Taskforce. He was awarded the President's Public Service Award in 2009 from the University of Massachusetts.

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**20**  
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