2017 | volume 19 issue 1

Mass Benchmarks

A JOURNAL OF THE MASSACHUSETTS ECONOMY

A publication of the University of Massachusetts in cooperation with the Federal Reserve Bank of Boston

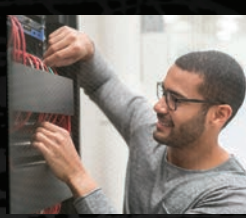
*Mass*Benchmarks

2017 | volume 19 issue 1

*Mass*Benchmarks, 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.

A complete list of past issues, latest news, updates, and additional research on the Massachusetts economy can be found at www.massbenchmarks.org.



Contents

FROM THE PRESIDENT

We are living in a period of considerable economic and political uncertainty. And as it has since its founding nearly two decades ago, *Mass*Benchmarks sheds some much-needed light on some of the most critical challenges facing our Commonwealth in these uncertain times. While it is clear we continue to benefit from our world-class educational and health care institutions and innovation ecosystem that now includes General Electric, which recently broke ground on its new world headquarters in Boston, we continue to face several serious challenges that weigh heavily on our economic outlook.

The issue begins with a comprehensive assessment of the state of the Commonwealth's economy authored by UMass Amherst Professor and *Mass*Benchmarks Executive Editor Robert Nakosteen. In his assessment of current conditions, Professor Nakosteen documents several significant economic strengths across the Commonwealth, including a red-hot job market in Greater Boston and steadily improving labor market conditions in nearly every corner of the state. But he also explores how the Bay State continues to contend with inequality that disadvantages far too many of our communities, regions and fellow citizens, as reflected in noteworthy differences in unemployment rates based on age, education, race and sex. Professor Nakosteen also reminds us of the profoundly high stakes for Massachusetts in ongoing debates in our nation's capital over the future of federal health care as well as fiscal, social and environmental policy.

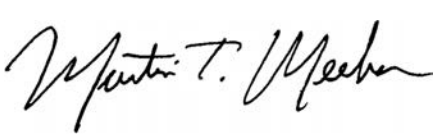
The issue's first feature article examines the potential costs and benefits of bringing paid family and medical leave to the residents of Massachusetts. Co-authored by UMass Boston Professor Randy Albelda and Northeastern University Professor and *Mass*Benchmarks Senior Contributing Editor Alan Clayton-Matthews, this analysis brings hard evidence to bear on an issue that has generated much heat but precious little light. Using a rigorous simulation model, Professors Albelda and Clayton-Matthews generate important insights into what we could expect in the event that Massachusetts adopts a proposed paid leave policy, as four other states and Washington D.C. have done. We would be wise to consider the evidence they have developed and determine how best to address the troubling inequality that plagues our society both here in Massachusetts and across the United States.

The second feature article highlights the significant challenges facing younger workers in Massachusetts. Authored by Mark Melnik, senior managing editor at *Mass*Benchmarks and director of economic and public policy research at the UMass Donahue Institute, and based on a larger report prepared for the Boston Private Industry Council (PIC), this eye-opening analysis underscores the growing challenge of connecting our younger workers to economic and employment opportunities in Massachusetts. As Dr. Melnik concludes, "this is both a quality of life issue for young adults in the state and a call for action in maintaining the economic strength of the Commonwealth in coming years."

*Mass*Benchmarks concludes with some wise words from Raija Vaisanen, two-time UMass Amherst alumna and director of research at the Commonwealth Corporation. In this issue's Endnotes, Ms. Vaisanen provides our policymakers, educators and workforce development professionals with practical lessons drawn from recent economic and labor market trends. She rightly concludes that the Commonwealth's primary competitive advantage is its people and that our society and economy are both well served when we increase access to education and vocational training to our workers and children.

Taken together, the information and insights in this issue of *Mass*Benchmarks underscore several major policy challenges facing the Commonwealth of Massachusetts that concern education and workforce development. They also make it clear that failing to meet these challenges will constrain the ability of our growing employers to expand here, and exacerbate the social and economic inequality resulting from the Great Recession.

While it is clear there is still much work to be done, our mission here at the University of Massachusetts is unchanged. We remain committed to ensuring that residents of the Commonwealth have access to affordable, high-quality educational opportunities and benefit from both our research excellence and enduring commitment to our public service mission. We will continue to support the kind of timely research and insightful analysis that characterizes this issue of *Mass*Benchmarks.



Martin T. Meehan, President
University of Massachusetts

NOTES FROM THE BOARD

The Massachusetts Economy continues to perform well with several economic indicators outperforming pre-recession highs. Concerns about long-range growth center around available labor supply and uncertainty in federal immigration policy.

Overall, the Massachusetts economy is performing quite well. Several key indicators, including total jobs, unemployment, wages, and gross state product, are close to or better than prerecession levels. Similarly, the monthly unemployment figures continue to signal positive news. The January 2017 unemployment rate for Massachusetts was 3.2 percent, 1.6 percentage points lower than the national average. And the current unemployment rate is among the lowest for the state since before the 2001 recession.

Despite these trends, areas of concern persist, mainly involving the state's untapped labor reserve. The U6 unemployment rate, which includes discouraged workers, all other marginally attached workers, and workers who are part-time for purely economic reasons, still exceeds prerecession levels. This suggests that many workers in the state economy lack the skills that employers are currently looking for.

Board members also acknowledged that related, overall labor market tightness raises concerns about long-term economic growth. The most significant room for employment growth, they agreed, is among young adults aged 16-24 and for all with limited educational attainment. While employment rates have recently increased for both [overlapping] groups, there is still significant room for improvement. Over 40 percent of workers under 25 in Massachusetts, for example, work in either retail or food services—industries that offer very limited opportunities for skill acquisition or job advancement.

Another area of concern is the current uncertainty over federal immigration policy. Over the last 30 years, Massachusetts has relied heavily on the foreign born as a key driver of population and labor-force growth. Since 2000, the foreign-born population has accounted for 74 percent of the state's population growth and 67 percent of its the labor force growth. The immigrant labor supply is critical in both Greater Boston and the Gateway Cities. Today, nearly 28 percent of Greater Boston's workers are foreign born. And Greater Boston accounts for about 62 percent of the state's foreign-born workforce.

While some might associate foreign-born labor with low-skill work, the Commonwealth's concentration of colleges and universities coupled with its emerging life sciences, innovation, and technology sectors make the state a magnet for highly skilled immigrants. For example, nearly one-quarter of all workers in the Massachusetts technology sector are foreign born. To that end, Massachusetts and Greater Boston in particular have relied on foreign-born labor through the H-1B visa program to help fill critical job openings in STEM (science, technology, engineering, and math) occupations.

There is some evidence that employers use lower-cost foreign labor in STEM jobs to receive training that ultimately leads to off-shoring of these jobs.

Confusion and uncertainty about future national immigration policies could have a chilling effect on the current immigrant workforce and the future supply of immigrant labor to Massachusetts across a wide variety of industries. There is already some evidence that college applications from international students are decreasing nationally. Besides healthcare and other STEM-driven industries, vulnerable industries include manufacturing and accommodations/food services, where immigrants account for between 25 and 30 percent of the workforce. In the Board's view, the implications of a national policy shift on immigration may yield significant outcomes—both for Massachusetts and its local economies.

Prepared by Senior Manging Editor Mark Melnik
March 3, 2017

THE STATE OF THE STATE ECONOMY

Economic Currents

A Vibrant Economy Faces Uncertainties

Robert Nakosteen

LOWER UNEMPLOYMENT RATES FROM BOSTON TO THE GATEWAY CITIES REFLECT A ROBUST STATE ECONOMY. UNCERTAINTIES ON THE HORIZON INCLUDE SLOW LABOR FORCE GROWTH, A STRONGER DOLLAR'S INFLUENCE ON EXPORTS, SLOWER GROWTH IN CHINA AND EUROPE, AND THE IMPACT OF TRUMP ADMINISTRATION POLICIES.

INTRODUCTION

The latest jobs, GDP, and unemployment data portray a Massachusetts economy with healthy, consistent growth. Especially encouraging is the drop in the unemployment rate across the entire state, as well as across age, race, and educational attainment. For the Gateway Cities, that drop in unemployment has been precipitous. The usual suspects are driving state growth, including professional and business services and the education and health sector. In addition, the construction sector is growing robustly, as is the leisure and hospitality sector. In other words, the Bay State is experiencing strong growth that is broadly based across cities, economic sectors, and demographic groups.

Looming over this scenario are a number of uncertainties. Strikingly low unemployment rates bring into focus the state's enduring slow labor force growth. There is anecdotal evidence that labor shortages are becoming an issue. The new Trump Administration will certainly bring about significant policy changes that may affect the state in both positive and negative ways. Global economic issues are slowing the growth of the international economy. Europe continues to experience anemic growth. China is in the throes of a transition from an

export and investment-led economy to one that gives greater emphasis to consumer expenditures. Slow growth in Europe and China has knock-on effects on the global economy, and ultimately on Massachusetts. While these risks and uncertainties bear watching, they have yet to materially affect the state economy.

STATE OF THE STATE ECONOMY

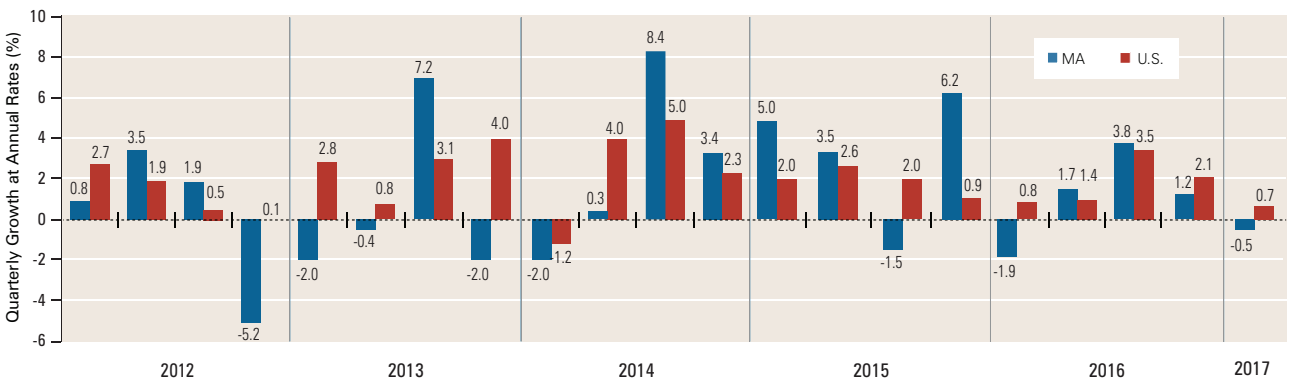
Gross Domestic Product

The gross domestic product (GDP) is the most comprehensive measure of economic activity. By this measure, the state's growth has trended upward since the end of the Great Recession, though not without interruption, including the first quarter of 2017. State GDP data are derived from two sources. The first, for quarters up through 2014, is the Bureau of Economic Analysis, which produces state product data for all states. The second, from that point forward, is the *Mass*Benchmarks Current Economic Index, our current proxy for gross state product. The year just ended started off, in the first quarter, with a decline in GDP. That was followed by consecutive quarters of growth, spilling into 2017.

Unemployment

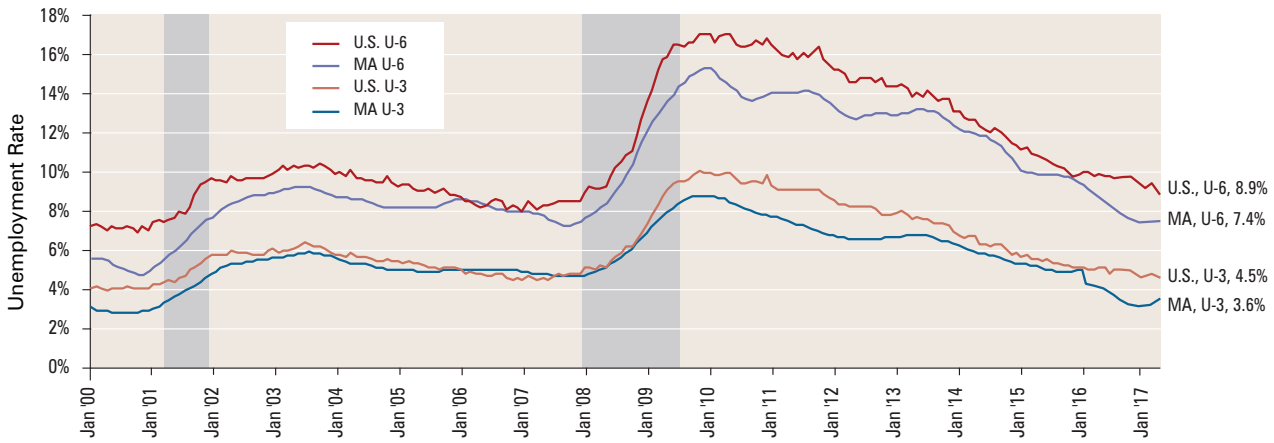
Perhaps most striking about the current status of the state economy is the drop of the unemployment rate to near historical lows. For the state as a whole, unemployment has dropped to 3.6 percent. This is considerably below the national rate of 4.5 percent, which is itself conspicuously low. For both the nation and the state, the

Growth in Real Product, Massachusetts and the United States
2012 Q1 – 2017 Q1



Source: U.S. Bureau of Economic Analysis (BEA); Most current quarter from Dr. Alan Clayton-Matthews

U-3 and U-6 Unemployment Rates, Massachusetts and the United States
January 2000 – March 2017



Source: Massachusetts and United States U-3 from the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), Local Area Unemployment (LAU) Statistics; Massachusetts and United States U-6 rates from Dr. Alan Clayton-Matthews. Shaded areas indicate periods of recession; recession dates were obtained from the National Bureau of Economic Research (NBER).

headline unemployment rate has fallen continually since the end of the recession in 2009. The U-6 unemployment rate, which adds to the headline rate those who are involuntarily working part-time and those who are marginally attached to the labor force, has fallen to 7.4 percent, compared with the national rate of 8.9 percent. The U-6 rate in the state has fallen to its lowest rate since December of 2007, when it was recorded at 7.5 percent.

As dramatic and welcome as the fall in the statewide unemployment rate has been, at least as important has been the convergence to lower rates across cities in the Commonwealth, as well as across important demographic and socioeconomic groups.[1]

Cities: Most conspicuous about the unemployment rates across cities is both how high they had gotten during the recession and how low they have become recently. Just before the state's economic turnaround in August 2009, Lawrence had an unemployment rate of 15.9 percent, and New Bedford, Fall River, Springfield, and Leominster all had double digit rates. The state's unemployment rate was 8.2 percent and Boston's was 8.0 percent. Compare those with the current rates: As of March 2017, all of the cities have fallen below 7 percent with the exception of Fall River, Lawrence, and New Bedford. Even those three cities recorded unemployment rates below 8 percent.

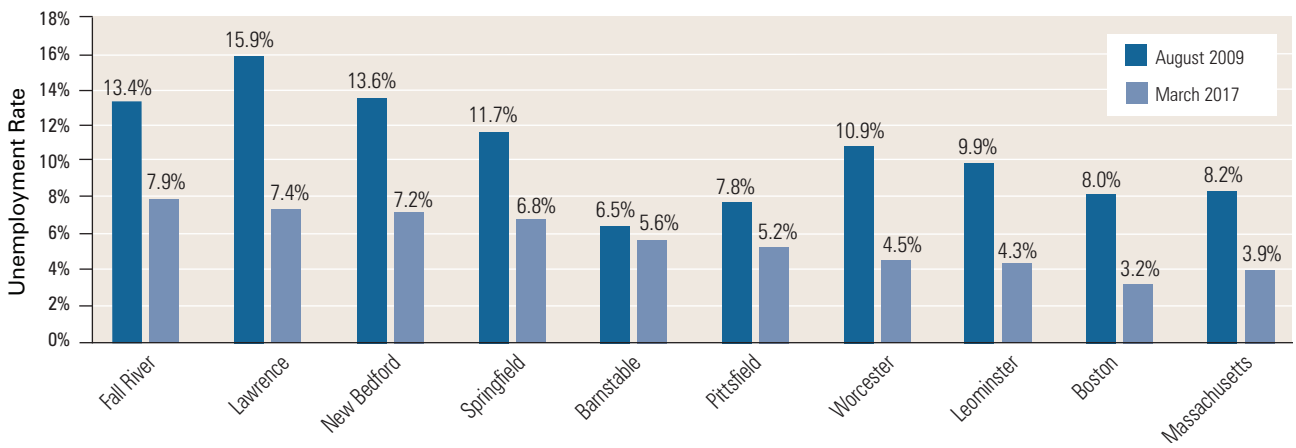
Males and Females: The recession in the state that ended in 2009 has been called a "male recession," as men experienced considerably higher unemployment rates than women. This is largely attributable to the precipitous decline in construction and manufacturing employment, jobs held disproportionately by men. At the low point of the recession, when the state's unemployment rate was at 9.0 percent, the unemployment rate was 10.6 percent for males and 7.7 percent for females. Since then, as overall unemployment has fallen, the unemployment rates for men have declined and converged with those for the entire labor force and for women. In November of 2016, the overall unemployment rate had fallen to 3.8 percent, 4.2 percent for males and 3.4 percent for females. So males continue to suffer higher unemployment then females, but the difference between the two has become negligible.

Race: Non-whites and Hispanics suffered higher unemployment rates than did white non-Hispanics, though the rates for the two groups has converged as they have declined. At the height of the recession, the unemployment rate for non-whites and Hispanics was 12.5 percent compared with 8.2 percent for white non-Hispanics. Though there is still a gap between the two groups, the difference in rates has been considerably compressed. From the most recent reading of the data, the unemployment rate for non-whites and Hispanics stood at 5.3 percent, compared with 3.3 percent for white non-Hispanics.

Age: From early in the century through the recession and up to the present, there has been essentially no daylight between unemployment rates for the two older age groups 25 to 54 years, and 55 years and older. Rates for those groups have risen and fallen in tandem. In contrast, the unemployment rate for younger workers has consistently been considerably higher. While the gap

Unemployment Rates by Massachusetts City, Recession Trough and Latest Available Month

Not seasonally adjusted



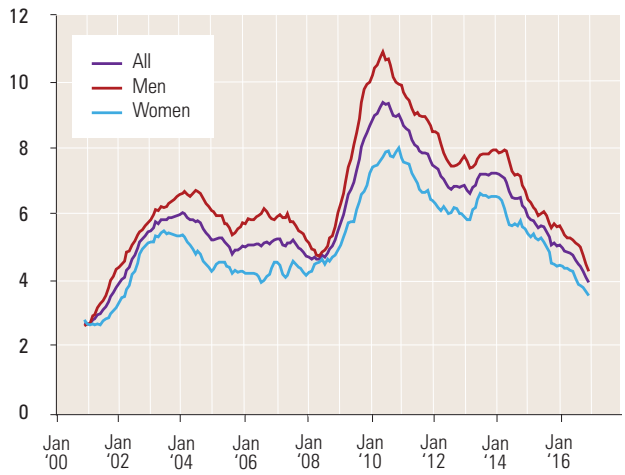
Source: Massachusetts Office of Labor and Workforce Development (OLWD), LAU

between the youngest group of workers and the oldest has diminished, it is still considerable. During the height of the recession, the unemployment rate for the youngest workers stood at over 16 percent, while the rate for the older two groups was near 8 percent. Since then the rates for all three age groups have fallen, and now stand at 6.7 percent for the under 25 group and at 3.5 percent for each of the older groups. The compression of these rates is encouraging, but the fact that the rate for young workers is nearly double that for older workers is worrisome.

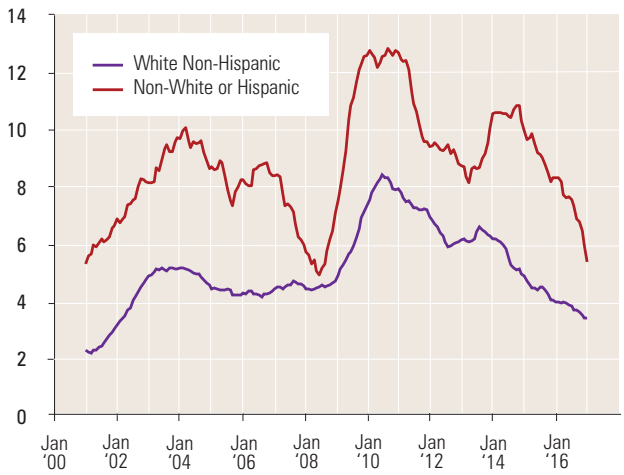
Education: Not surprisingly, a gradation of unemployment rates by educational attainment has persisted over time. Even at their highest, the unemployment rates for those with at least a college degree never exceeded 5 percent. In contrast, for those with less than a high school education, the unemployment rate peaked at over 20 percent. Other groups defined by their educational attainment have unemployment rates sandwiched between these extremes. Over time, unemployment rates have declined and converged. For the most recent data available, the unemployment rate for the college educated has fallen to less than 3 percent, while the rate for those without a high school diploma still exceeds 10 percent. Again, rates for other groups fall between these extremes. While it is encouraging that unemployment rates have fallen for all educational groups, a rate exceeding 10 percent can only indicate considerable distress.

Massachusetts Unemployment Rates by Demographic Characteristics

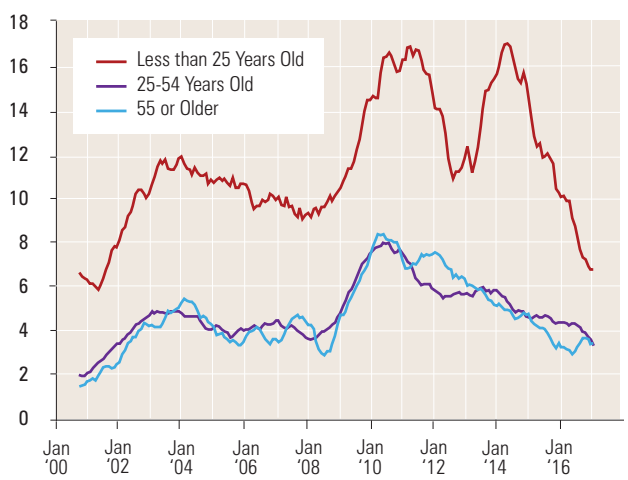
Sex



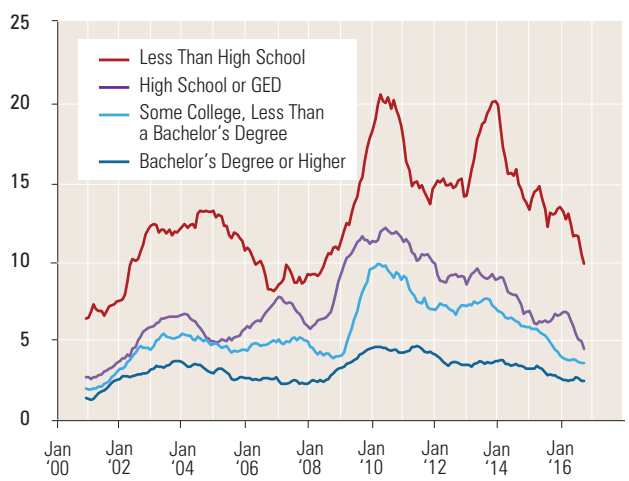
Minority Status



Age



Educational Attainment



Source: Derived from the Current Population Survey by Dr. Alan Clayton-Matthews

ECONOMIC PERFORMANCE BY SECTOR

Since the beginning of the recovery in late 2009, the Bay State has added over 400,000 jobs. Over half of these additions were attributable to Education and Health Services (119,600) and Professional and Business Services (104,500). In terms of percentages, by far the greatest increase was in the Construction industry (39.0 percent, compared with the overall percentage increase of 12.9 percent). The only sectors that have experienced declining employment since the start of the recovery are the very small Natural Resources and Mining sector, with a loss of 200 jobs, and the Manufacturing sector, with a loss of 10,200 jobs.

MERCHANDISE EXPORTS

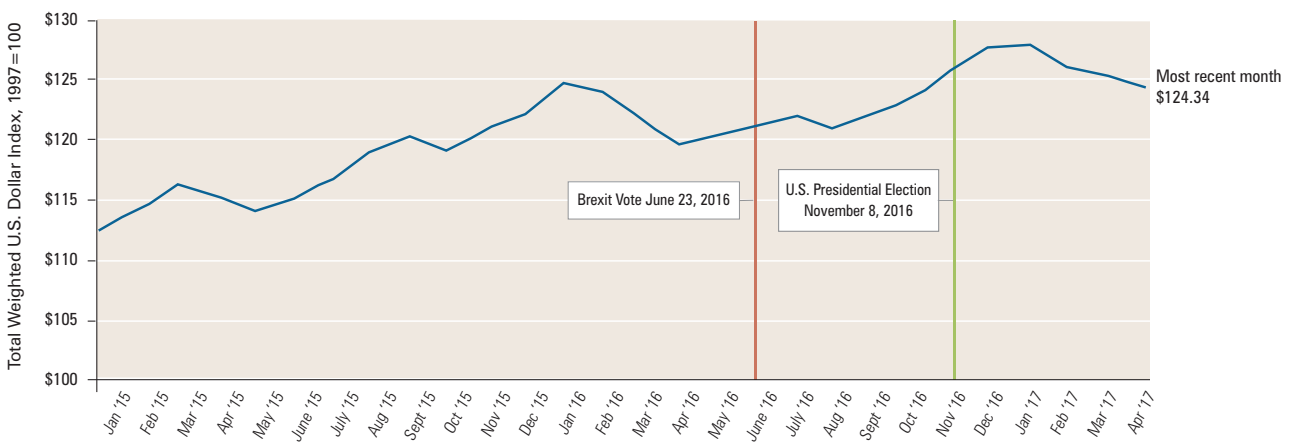
Though it has fallen back recently, the dollar appreciated significantly following two developments: the Brexit vote in the United Kingdom (which will lead to the UK leaving the European Union) and the election of Donald Trump as President of the U.S. The impact of the former

Employment in Massachusetts by Industry
Beginning of the Economic Recovery Compared with Latest Available Month
Seasonally adjusted

Industry Supersectors	Employment at Beginning of Recovery (August 2009)	Employment in Latest Month (March 2017)	Employment Change	Employment Percentage Change
Natural Resources & Mining	1,300	1,100	-200	-15.4%
Construction	108,100	150,300	42,200	39.0%
Manufacturing	253,800	243,600	-10,200	-4.0%
Trade, Transportation & Utilities	538,400	577,100	38,700	7.2%
Information	85,400	90,300	4,900	5.7%
Financial Activities	218,200	229,500	11,300	5.2%
Professional & Business Services	452,900	557,400	104,500	23.1%
Education & Health Services	677,400	797,000	119,600	17.7%
Leisure & Hospitality	300,100	361,700	61,600	20.5%
Other Services, Excluding Public Administration	118,600	137,200	18,600	15.7%
Public Administration	438,000	459,700	21,700	5.0%
Total, All Industries	**3,192,200**	**3,604,900**	**412,700**	**12.9%**

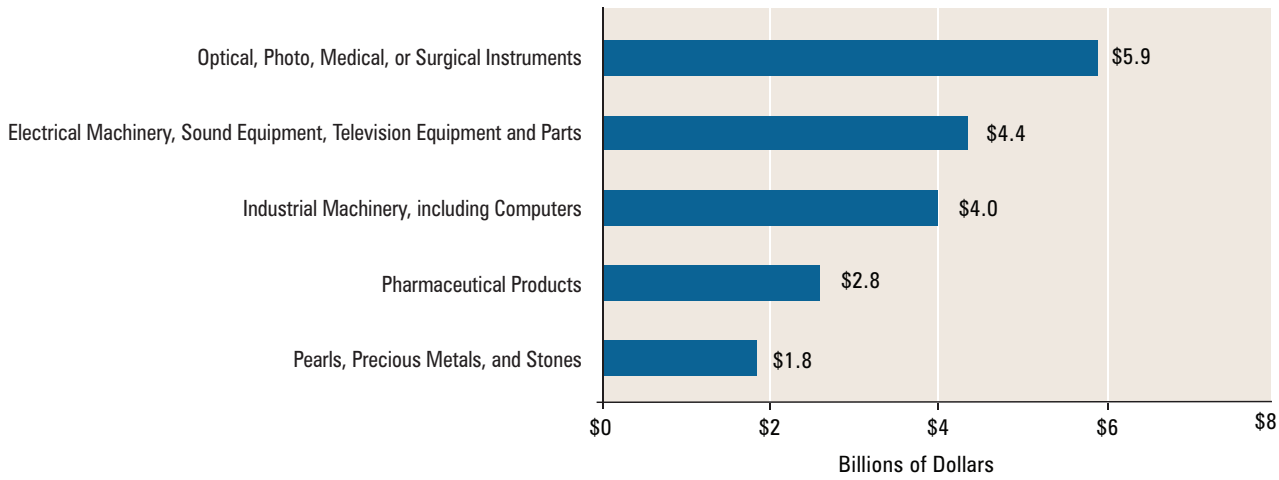
Source: Massachusetts Executive Office of Workforce and Labor Development (EOWLD), Current Employment Statistics (CES-790); Calculations by the authors.

Monthly Trade-Weighted U.S. Dollar Index
January 2015 – April 2017
Not seasonally adjusted



Source: Federal Reserve Bank of St. Louis, FRED Economic Data, Series TWEXB

Top Five Commodities Exported from Massachusetts, 2016



Source: WISERTrade

is widely predicted to weaken both the UK and the European Union economies, leading to a softer British Pound and Euro. The opposite side of those outcomes is a strengthening of the dollar. During the Trump presidential campaign, the candidate promised tax cuts for both individuals and businesses, as well as a sharp increase in infrastructure spending. Trump's election makes those policies more likely, which would lead to a surge in aggregate demand in the U.S. economy. One side effect of that surge, even with the prospect of a surge, is a stronger dollar.

One effect of a stronger dollar is to raise the price of state exports denominated in importers' domestic currencies. Other factors remaining equal, this would dampen demand for exports originating in Massachusetts. Given the complex global supply chains that accompany modern production, a possible countervailing impact on state manufacturing and merchandise exports will be that imported intermediate production inputs will be less expensive, as denominated in dollars, due to the increasing strength of the dollar. Whatever the ultimate outcomes of a stronger dollar, those effects will likely not be immediate. It takes time, sometimes considerable time, for changes in currency exchange rates to have an effect on demand for exports. The accompanying list of the state's top export products suggests where the effects of a rising dollar might be felt.

Note that most of the state's exports actually stay within the U.S. That is, domestic markets are far more important for Massachusetts businesses than international markets. That is to say that by making imports less expensive as denominated in dollars, a stronger dollar can hurt the competitiveness of Bay State businesses even in domestic markets.

HOUSING CONSTRUCTION

Residential construction continues both to grow and to be increasingly concentrated in the metropolitan Boston area. This journal has remarked on this latter trend for some time.

Home prices in Boston, the only area in the state covered by the Case-Shiller Home Price Index, show a steady, though not monotonic, increase starting in early 2012 and continuing to the present. The Case-Shiller index measures changes in home prices by comparing repeat sales of single-family homes over time. The advantage of this method is that the composition of sales over time does not affect the index. Perhaps surprisingly, the rate of increase in home prices in Boston has converged to the 20-city average, and the gap with the national average has closed.

THE IMPACT OF THE TRUMP ADMINISTRATION

There is keen interest in the state, and indeed nationally and globally, about President Trump's policies and their effects. The *Mass*Benchmarks Editorial Board met in early December, prior to the inauguration, to discuss potential consequences of the new Administration's policies. The resulting press release, which summarized those discussions, is reproduced, in part, here:

Infrastructure Investment

President Trump has consistently called for a sizeable investment in the country's infrastructure. Though the magnitude and sources of funding for these investments have yet to be determined, the state could benefit in at least two ways. In the short- to medium-term, there

could be positive employment effects, especially in the construction industry. These benefits could well be distributed across the state. In addition, modernizing the state's infrastructure would boost the productive capacity of the state economy.

Military Spending
The defense industry is one of the leading sectors in the state economy and is the state's largest recipient of federal government contracts. Much of the defense-related activity is concentrated in the state's high-technology industries. These sectors could benefit from an expanding Defense Department budget.

Immigration Policy
For decades, the state has experienced negative net domestic migration. Though the magnitude has varied over the course of business cycles, the net outflow of state residents has been a constant. Countering this pattern has been the steady inflow of international migrants. More restrictive immigration policies may thwart the state's ability to attract these migrants. Note that the President has voiced his support for legal immigration, and the immigration of highly skilled individuals.

Higher Education
Related to immigration, the state's sizeable higher education sector has increasingly enrolled international students. These students may find it more difficult to enter the United States during a Trump Administration, and more may choose not to apply in the first place.

Health Care
The state can be affected by changes in health care policy in more than one dimension. Most obviously, the state has benefitted financially from the Affordable Care Act (ACA), especially in federal government support for the Medicaid expansion. President Trump has promised to repeal the ACA, though the timing and what will replace it remain uncertain, and any changes will have to come through the Congress. The state's prominent positions in medical research, pharmaceuticals, and medical device manufacturing could all be affected by significant discontinuities in federal health care policy.

International Trade
During the presidential campaign, President Trump promised to renegotiate existing international trade relations and impose high tariffs on some imported products. While merchandise exports are a small part of the state economy, they are still important to much of our high-technology sector. Service exports, though less subject to measurement, are more important. Consulting services, higher education, health services, and software and information technology services depend on sales to international customers, patients, and students. A trade war could adversely affect these prominent sectors of the state economy.

CONCLUSION

The most striking development since the last issue of *Mass*Benchmarks has been the precipitous and welcome decline of unemployment in cities around the state, especially cities that had been suffering from stubbornly high unemployment since the end of the recession. This journal has consistently reported and lamented over the uneven distribution of economic prosperity across the state. Most troubling has been the persistently high unemployment rates in the Gateway Cities. While no one is singing "Happy Days Are Here Again" in these cities, the uniformly lower unemployment rates are cause for optimism.

Still, considerable economic and political risk continue to accompany our expansion. Persistently low unemployment rates portend possible labor shortages. Global growth is slowing, with a slowdown in growth in China and continued stagnation in Europe. These developments have knock-on effects on other economies as well. It is hard to know how the policies of the Trump Administration will evolve, and how these policies will affect the Bay State. But there is certainly reason for concern. At the moment, however, the trajectory of the state economy is very positive, and prospects for the future, though not without risk, are encouraging.

Robert Nakosteen is a professor of economics at the Isenberg School of Management at UMass Amherst and Executive Editor of this journal.

Endnote

1.) The data measuring unemployment rate by demographic and socioeconomic groups were provided by Dr. Alan Clayton-Matthews, to whom the author is grateful. Note that these unemployment rates were computed as 12-month moving averages from the Current Population Survey (CPS). The moving average serves to smooth out the monthly fluctuations from the CPS (the official data uses a model to smooth out the differences). Since the data are a 12-month moving average, the peaks and troughs will differ from the monthly data.

Paid Family and Medical Leave in Massachusetts: Costs and Coverage

Randy Albelda
Alan Clayton-Matthews

A SIMULATION MODEL FINDS COSTS OF HYPOTHETICAL PAID FAMILY LEAVE OPTIONS FOR MASSACHUSETTS TO BE LOW. ESTIMATES CONSIDER THE ANNUAL NUMBER AND LENGTH OF LEAVES, COVERAGE ACROSS EMPLOYEES, AND OTHER FACTORS.

INTRODUCTION

A new baby. A cancer diagnosis. A parent or child with a serious illness. These are common events that require a worker to take an extended leave from work. Most everyone at some point will experience a period during which they need time to heal or to care for a loved one. Yet, for many workers, taking time from work means losing wages and, for some, it means losing their job.[1]

The United States remains an outlier when it comes to paid leave. Nearly every other country provides paid maternity leave and most advanced industrial countries offer extended paid medical and parental leaves.[2] In the United States, some, but far from all, employers offer certain forms of wage replacement when workers take a leave for medical or family reasons. In 2015, only 12 percent of all workers had access to paid family leave from their employers, 38 percent had access to short-term disability leave, and 65 percent had paid sick days.[3]

Four states and Washington, DC currently or will soon provide wage replacement for family and medical leaves and many more states are considering legislation to establish statewide programs, including Massachusetts. Extending paid family and medical leave to all employees through a statewide program would share the costs and expand access, level the employment playing field, and reduce inequality among workers. One often-cited obstacle to providing paid family and medical leave is the anticipated cost. We address that concern using a simulation model that provides estimates of the annual number and lengths of leaves, coverage across employees, and the costs associated from leave taking without a paid leave program in place as well as with one. Here we present current costs and coverage in Massachusetts and under a bill to provide paid leave recently considered (but not enacted) by the Massachusetts Legislature.[4]

THE WHAT AND WHY OF PAID FAMILY AND MEDICAL LEAVE

Paid medical and family leave refers to receipt of partial or full-wage replacement when taking a temporary, but extended, leave from work to tend to one's own serious health condition or that of a family member. It may also entail caring for and bonding with a newly born or adopted child. Leaves for one's own health, including pregnancy, are considered medical leaves, while those taken to care for a family member or bond with a newly born or adopted child are often referred to as family and parental leaves. Giving birth can entail a medical as well as a family or parental leave.

Leaving work for medical and family reasons is commonplace. In 2012, the U.S. Department of Labor (DOL) commissioned Abt Associates to conduct a nationwide survey of employees on the use of family and medical leaves over the last 12 months. Abt found that 13.1 percent of employees reported taking a leave for medical or family reasons.[5]

The Family and Medical Leave Act (FMLA), passed in 1993, allows those who work for an employer with 50 or more employees within a 75-mile radius and who have worked 1,250 hours for the same employer over the previous year to take up to 12 weeks of unpaid, job-protected leave to tend to a serious health condition or to care for a new child, or a seriously ill relative once every 12 months. FMLA is watershed legislation that formally recognizes the realities of work and family life by establishing a legal right to take leave. But there are two major gaps. First, 41 percent of workers are not covered by FMLA either because they are ineligible or their employer is not covered by the provisions of the Act.[6] Second, even when workers are covered by FMLA, the law does not require any wage replacement.

Five states (CA, HI, NJ, NY and RI) have had paid medical leave programs (Temporary Disability Insurance) for over 50 years. Since 2004, all of these states but Hawaii have passed legislation to extend these programs to also provide paid family leaves. Washington, DC just enacted a paid family and medical leave program. Many private employers provide workers with paid time for family and medical leave reasons, either voluntarily or through collective bargaining agreements. The 2012 DOL survey found that 65 percent of workers received some wage replacement during their most recent leave (17 percent received partial pay and 48 percent received full pay). Most commonly, workers used accrued sick days and vacation days.[7] Another way workers get wage replacement for their own-health leave is through purchasing short-term disability insurance. The March 2015 National Compensation Survey reports that 37 percent of all workers participate in a short-term disability plan to which they or their employer contributes.[8] The National Compensation Survey reveals that low-wage workers are least likely to receive employer-paid time off for leaves. Indeed, only 17 percent of workers with wages in the lowest quartile of the wage distribution have access to short-term disability programs from their employers and 34 percent have paid sick days.[9]

Paid leave programs, like the one proposed in Massachusetts, act as social insurance, relying on employers and employees to share the economic risk associated with taking leave through payroll contributions. This means that rather than the current system where each employee and employer together bear the cost of taking leave individually when the need arises, the insurance program, through modest payments over time, covers a portion of

Paid leave will reduce the current wage penalty experienced by many caregivers and their families. No paid leave makes it harder for men to share caregiving responsibilities and contributes to women doing more unpaid care work, exacerbating gender-based pay inequality.

wage replacement. Massachusetts already practices this kind of risk sharing through mandated health insurance, auto insurance, workers' compensation, and unemployment insurance. As such, the program levels the employment playing field. A comprehensive program allows eligible workers to take a paid leave regardless of their employer's size or willingness to provide paid time off. Currently, some workers have access while others do not. All employers—especially small business owners who cannot afford wage replacement for every employee who needs a leave—and employees will contribute to this program and potentially reduce the current costs of leave taking. Still, because not all wages are replaced, employees as well as any employers that fill that gap will still bear individual costs.

Because it covers almost all workers, paid family and medical leave becomes an important policy tool for reducing gender, income, and racial inequality. Most women work outside the home and many employed women (and increasingly men) are also caregivers. Paid leave will reduce the current wage penalty experienced by many caregivers and their families. No paid leave makes it harder for men to share caregiving responsibilities and contributes to women doing more unpaid care work, exacerbating gender-based pay inequality. Similarly, workers with lower wages, and Black and Latino/a employees are least likely to get wage replacement for family and medical leaves even though they can least afford to forgo wages. Providing paid leave for these workers reduces the current employer benefit gap. Furthermore, workers without paid leave are more likely to leave the labor force than workers who receive pay.[10] This makes it harder for women, workers of color, and low-wage workers to climb job ladders, which reduces their earnings over time.

Finally, paid leave benefits businesses and all workers. It reduces turnover, which reduces costs.[11] It also reduces employee stress and increases morale, making for a healthier and more productive returning employee. Surveys of employers in California and New Jersey, where there are paid family and medical leave programs, find that employers generally do not find them onerous.[12] Surveys of workers in those states indicate that their paid family leave program filled in for wage losses when on leave and positively affected workers' ability to care for a newly born or adopted child.

THE PAID FAMILY AND MEDICAL LEAVE SIMULATION MODEL

This study presents estimates on the number of family and medical leaves taken currently and with the recently proposed program using the Albelda Clayton-Matthews/Institute for Women's Policy Research (ACM/IWPR) Paid Family and Medical Leave Simulation Model.[13] The simulation model uses information about leave-taking behavior from the previously mentioned 2012 DOL survey to estimate the probability of who needs but does not take a leave, who takes leave, what type of leave is taken, and for how long. These probabilities allow us to simulate leave taking by employees in Massachusetts using the five-year (2010-2014) sample of the American Community Survey (ACS). This allows for estimates on employer and employee characteristics about leave takers as well as those needing a leave. The model simulates the decision to use a program and for how long based on information gleaned from the 2012 DOL survey, shown to influence this decision tailored to the parameters of a paid leave program. They include the generosity of the program compared with employer benefits, length of leave taken, and length of leave covered by the program, eligibility requirements, and employee demographics.

Using the specific sets of policy parameters in a program, such as the maximum length of leave allowed, wage replacement rate, wage replacement cap, job protection provisions, and employer or employee eligibility requirements (e.g., requisite hours or earnings, covered employees), the simulation model estimates the number of total leaves taken and the leaves that likely would be taken using the paid leave program for wage replacement. The simulation model takes into account the length of leave and use of an employer wage-replacement benefit if it provides more than the state program in determining if an employee would use the new program. Because the model uses the 2012 DOL survey, our estimates are already sensitized to national workplace practices of taking leaves. But there are several aspects of leave-taking behavior about which we are unaware and cannot model.

Employers can opt out of the program if they provide employees with coverage equal to or better than the state program.

For example, we do not know if workplace practices vary by state, region of the country, or industry. We do not know how hard or easy it would be to use a statewide program, how many workers will know about the program, or if employers will change their wage replacement policies around family and medical leaves because of the program. To adjust the model for many of these unknowns, we apply various take-up rates—the percentages of leaves using a program among those who the model predicts are eligible and would use a program—for the different type of leaves. To determine appropriate take-up rates, we turned to a careful examination of the number, cost, and distribution of paid leaves in New Jersey and California, the two states with the longest track records of both paid medical (TDI) and family (care/bonding) leaves. We compared actual leave taking in these states with results from the simulation model, using their program parameters to gauge how our model predicts leave taking and length of leave by type of leave.

We find that the best specification in predicting cost and number of leaves for a new program is a 40 percent take-up rate for personal health leaves, a 95 percent take-up rate for leaves associated with pregnancy disability and bonding with a newly born or adopted child, a 5 percent take-up rate for leaves to care for an ill spouse or child, and 5 percent to care for an ill relative. Using different take-up rates other than these will produce different estimates. We anticipate that usage—and with it, costs—may increase when the program becomes more established. The cost estimates here reflect costs associated with wage replacement. Significantly, they do not include the administrative costs associated with implementing and running a program.

THE IMPACT OF A MASSACHUSETTS PROGRAM

We apply the simulation model to the key provisions of a bill that was under consideration by the Massachusetts Legislature in 2016. These provisions are summarized in Table 1. The bill allows for up to 26 weeks of medical leave for eligible personal health (including pregnancy-related) reasons and up to 12 weeks for family leave to bond with a new child or to care for an ill relative. The program is restricted to private sector and state government employees who have worked for any Massachusetts employer for three months over the previous year.

Wage replacement rates are on a sliding scale and vary with wages relative to the statewide average weekly wage, which was $1,256.47 in 2015.[15] In this case, for weekly wages up to 30 percent of the statewide average ($377 in 2015), all workers get 90 percent of their wages replaced. For all amounts above that level, 33 percent of wages will be replaced up to the maximum amount of $650. This results in sliding scale wage replacement rates ranging from 90 percent to 50 percent up to the wage in which the maximum level of benefits is achieved. There is a one-week (five workdays) waiting period. The legislation establishes the Family and Employment Trust Fund, managed by the Treasurer of the Commonwealth and paid for by contributions to the fund made by employers and employees. Employers can opt out of the program if they provide employees with coverage equal to or better than the state program. Because of federal and state laws, the program excludes municipal and federal government workers from participating and is voluntary for

Table 1. Key Provisions of Estimated Paid Family and Medical Leave Program

Waiting Period	Program Benefit	Maximum Leave	Job Protection	Funding	Employment Eligibility
One week	Replaces a portion of average weekly wages up to $650 per week, based on employee income relative to statewide average wage.	26 weeks for medical (own health/ pregnancy-related) leave; 12 weeks for family care	All leaves up to 12 weeks (health benefits also protected); prohibits discrimination and retaliation.	Employer and employee contributions	Has worked at least 3 months (13 weeks) for a Massachusetts employer in the previous 12 months.

Table 2. Annual Total Number of Leaves and Employees Taking Leaves by Leave Type, Currently and with Proposed State Program

	Number of Leaves Taken		Number of Employees Taking Leaves*	
	Currently	With New Program	Currently	With New Program
Own health	313,300	322, 200	223,200	231,100
Pregnancy	36,400	37,400	27,200	28,000
New child	38,800	40,600	32,300	33,900
Ill relative	127,800	128,400	91,200	91,900
Total	**516,300**	**528,600**	**373,900**	**384,900**

Source: by authors, using ACM/IWPR Paid Family and Medical Leave Simulation Model

*Longest leave taken

Note: Numbers have been rounded to the closest 100.

self-employed workers, so we exclude them from our estimates. The 2010-2015 five-year sample of the ACS indicates that there are 3.14 million employees in the covered workforce of private sector and state government employees in Massachusetts.

Table 2 summarizes the estimated total leaves and total number of employees taking leave currently and with the proposed program by type of leave. There are four categories of leaves: non-pregnancy-related own health, pregnancy-related own health, new child (which includes leaves to bond with a newly born or adopted child), and ill relative (which includes leaves to take care of an ill child, spouse, or parent).

Just under 374,000 private and state government workers employed in Massachusetts, or 12.1 percent of the covered work force, currently take 516,300 leaves annually. With a new program, the number of total leaves taken increases by about 12,000 to 528,600 and the number of employees who will take a leave increases by 11,000 (0.3 percent of the work-force) to about 385,000. The distribution of the types of leaves taken at present and with the proposed paid leave program is very similar. Two-thirds (68 percent) of leaves are for a serious personal health condition (including pregnancy-related leaves). The next largest category of leave is for an ill relative (24 percent) and just under 8 percent is for a newly born or adopted child.

We estimate that just under three-quarters (72.6 percent) of all leaves currently taken are covered by some wage replacement from an employer. With a program, the percentage of leaves with any wage replacement increases by 8 percentage points to 80.6 percent. The percentage of workers with any wage replacement with a paid leave program is greater for leaves longer than three weeks (the current median leave length for all leaves) at 85.6 percent.

Table 3 depicts the estimated number of leaves, distribution of leaves, and annual cost by leaves that occur using the proposed program over the course of a calendar (or fiscal) year. To use the program, a worker must have an eligible family or medical leave, meet program eligibility requirements, and successfully apply for benefits. We estimate that 133,700 of the more than half million

Table 3. Program Use by Type of Leave

	Number of Leaves Using Proposed Program	Distribution of Leaves Using Proposed Program	Total Cost of Proposed Program (in Millions)
Own health	81,000	60.6%	$351.1
Pregnancy	24,500	18.3%	$130.7
New child	25,200	18.9%	$74.7
Ill relative	3,000	2.3%	$3.9
Total	**133,700**	**100%**	**$560.4**

Source: by authors, using ACM/IWPR Paid Family and Medical Leave Simulation Model

Note: Numbers have been rounded to the closest 100.

leaves taken would receive wage replacement through the new program.

Note that we estimate only 25 percent of all leaves taken will receive wage replacement through the new program. One important reason is that most leaves are short (currently, over half of all leaves taken are for three weeks—15 days or fewer) and the program calls for a one-week waiting period. Workers who take or foresee a short leave will most likely resort to using sick days complemented by accrued vacation days for near-full replacement wages rather than apply to the program. Some may have better available forms of wage replacement, such as disability insurance or employer pay.[16] For some leaves, the program is less convenient because the length of leave may be difficult to gauge or the nature of the leave may require greater flexibility in taking days off than is provided by the program. Persons undergoing chemotherapy or their caretakers would be good examples. Some workers may be ineligible while others might not know about the program or find applying too cumbersome.

The total annual cost of the program, excluding administrative costs, is $560.4 million. Averaged across the entire covered workforce of private sector and state employees, that amounts to an average annual per worker cost of $179 or a weekly per worker cost of $3.44. The cost would be split between the employer and the employee. Payroll contributions to pay for the program (excluding administrative costs) would be 0.355 percent of the total earnings payroll of covered workers. If earnings subject to contributions are capped at the 2015 FICA limit (used to fund Social Security) of $118,600, the wage replacement costs of the program would be 0.41 percent of payroll earnings.[17] The average weekly benefit received by those using the program would be $468.

Table 4 depicts the annual cost that a full-time, year-round individual employee (or employer) would pay in earning the current Massachusetts minimum wage ($11/hour). It also depicts an earner at the weekly median wage of $778 and at the FICA limit, with annual earnings of $118,500.[18] For a 40-hour per week minimum wage worker, the cost of contributing for both the employee and his or her employer is less than $1 a week. If that worker used the program, the weekly benefit received would be $360 (82 percent of weekly wage). The median worker (and his or her employer) contributes $1.60 a week if the FICA cap were imposed. Using the program, this worker would receive $472 a week (61 percent of weekly wage). Fewer than 10 percent of all workers earn at or above the FICA limit. A worker with annual earnings of $118,500 would be paying almost between $210 and $243 a year ($4.04 or $4.67 a week) and if participating in the program would get the maximum benefit of $650 a week (29 percent of weekly earnings).

REDUCING INEQUALITY

The program increases the percentage of workers who take leaves with any wage replacement from 72.6 percent to 80.6 percent—an 8 percentage point increase. While the proposed program will not guarantee that all leaves will receive wage replacement, it is an important way for eligible workers with only the minimum amount of employer-based wage replacement (five paid sick days) to get wage replacement when on family or medical leave. Table 5 shows the percentages of all covered workers (all private sector and state government workers employed in Massachusetts) by some worker characteristics and employer size. It includes the percentage of leaves taken with wage replacement, currently and with the proposed

Table 4. Annual Cost to Individual Employee (or Employer) by Wage Level

	No Contribution Cap	Cap of $118,500
Employee (or employer) annual contribution for full-time worker earning minimum wage $11/hour	$39.05	$45.12
Employee (or employer) contribution for full-time median worker's earnings ($778 week)	$71.80	$82.98
Employee (or employer) contribution for full-time worker at $118,400	$210.32	$243.05

Source: by authors, using ACM/IWPR Paid Family and Medical Leave Simulation Model

Note: This is the split cost so total cost is doubled.

program (and the difference). Here we can see the ways in which the proposed program begins to fulfill the intended policy goal of leveling the employment playing field and reducing inequality by boosting the percentage of workers with wage replacement who are currently least likely to have any.

For example, black workers comprise 6.8 percent of the covered workforce, and at present 65.4 percent of all leaves taken by black workers receive some wage replacement. However, with the proposed program, we estimate 76 percent of those leaves would receive some wage replacement. Similarly, workers who work in small firms of fewer than 10 employees are 18 percent of all covered workers. An additional 10.8 percent of these workers would receive some wage replacement while on a family and medical leave with this program. Clearly, the proposed program has the potential to provide black, Latina/o, near-poor workers, and those who work in smaller firms with large increases in wage coverage when on leave.

CONCLUSION

The proposed paid leave program fills one important gap in the federal Family and Medical Leave Act while taking into account the reality of work and family life: workers need the time to leave work for their own health reasons and to care for others and receive partial wage replacement while on leave. We find that the changes in the number of total leaves are minor and the costs low because they are spread over the entire workforce. The program boosts wage replacement coverage for all workers, but especially for women, workers of color, low-wage workers, and workers employed in smaller-sized firms.

Our current system of wage replacement is uneven and unequal and contributes to the economic insecurity with which many workers struggle. A statewide paid family and medical leave program will reduce the current wage replacement gap, level the employment playing field for workers and employers, and enhance economic security for many working families across the Commonwealth.

Table 5. Percentage of Leaves Taken with Any Wage Replacement, Currently and with Proposed Program

Percentage point difference in leaves with wage replacement, and distribution of all private sector and state government employees in Massachusetts, by characteristics of leave takers

Characteristic of Leave Takers	Percentage with Wage Replacement, Currently	Percentage with Any Wage Replacement with Program	Percentage Point Increase in Wage Replacement Coverage	Percentage of Private Sector and State Government Workers
Total	72.6%	80.6%	8.0	100%
Gender				
Male	74.3%	81.0%	6.6	50.5%
Female	71.2%	80.3%	9.1	49.5%
Race/Ethnicity				
White (any ethnicity)	74.0%	81.4%	7.4	80.6%
Black (any ethnicity)	65.4%	76.0%	10.6	6.8%
Asian (any ethnicity)	75.3%	82.6%	7.3	6.2%
Latina/o (any race)	60.4%	73.9%	13.5	9.1%
Low-Wage Level				
$15 an hour or less	55.8%	68.9%	13.2	34.1%
More than $15 an hour	79.5%	85.5%	6.0	65.9%
Employer size				
1-9 employees	62.0%	72.8%	10.8	18.0%
10-49 employees	62.0%	73.8%	11.9	14.5%
50-99 employees	75.2%	82.3%	7.2	7.1%
100-499 employees	75.7%	82.7%	7.0	12.8%
500 or more employees	76.9%	83.6%	6.7	47.5%

Source: by authors, using ACM/IWPR Paid Family and Medical Leave Simulation Model

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Endnotes

1.) Material presented here is based on the report *It's About Time: Cost and Coverage of Paid Family and Medical Leave in Massachusetts*, May 2016, published by the Center for Women and Politics and Public Policy and the Center for Social Policy at University of Massachusetts Boston. Cost and coverage estimates vary here because we have updated the ACM/IWPR Simulator Model to better reflect length of time on a program in states with paid family and medical leave and because we are using a more recent version of the American Community Survey.

2.) See the OECD Database (PF2.1 and PF2.3) and Jody Heymann, Hye Jin Rho, John Schmitt, and Alison Earle (2010), "Ensuring a healthy and productive workforce: Comparing the generosity of paid sick day and sick leave policies in 22 countries." *International Journal of Health Services* 40: 1-22.

3.) U.S. Department of Labor, Bureau of Labor Statistics, National Compensation Survey, 2015, Tables 16 and 32. Retrieved January 29, 2016 at http://www.bls.gov/ncs/ebs/benefits/2015/ownership_civilian.htm

4.) The analysis presented here is based on bill H.4371, reported favorably out of the Joint Committee on Health Care Financing on May 31, 2016. A different version of that bill passed the Senate, but was not heard by the House.

5.) Jacob Alex Klerman, Kelly Daley, and Alyssa Pozniak, *Family and Medical Leave in 2012: Technical Report*, Abt Associates, prepared for Department of Labor (2013), exhibit 4.1.5, p. 64. Retrieved November 4, 2014 at http://www.dol.gov/asp/evaluation/fmla/FMLA-2012-Technical-Report.pdf

6.) Klerman et al. *Family and Medical Leave in 2012: Technical Report*, exhibit 4.1.5, p. 64.

7.) Klerman et al., *Family and Medical Leave in 2012*, exhibit 5.3.4, p. 97.

8.) U.S. Department of Labor, Bureau of Labor Statistics, *Employment Benefit Survey*, March 2015, Insurance Benefits: Access, participation, and take-up rates, table 16 at http://www.bls.gov/ncs/ebs/benefits/2015/ownership/civilian/table16a.htm (retrieved December 1, 2015).

9.) U.S. Department of Labor, Bureau of Labor Statistics, *Employment Benefit Survey*, March 2015, table 32 at http://www.bls.gov/ncs/ebs/benefits/2015/ownership/leave_all.pdf (retrieved January 13, 2016).

10.) See for example, Maya Rossin-Slater, Christopher J. Ruhm and Jane Waldfogel. 2013. "The Effects of California's Paid Family Leave Program on Mothers' Leave Taking and Subsequent Labor Market Outcomes." *Journal of Policy Analysis and Management* 32(2): 224-245.

11.) Eileen Appelbaum and Ruth Milkman, *Leaves That Pay: Employer and Worker Experiences with Paid Family Leave in California*, Washington, DC: Center for Economic and Policy Research, 2011.

12.) See Sharon Lerner and Eileen Appelbaum, *Business as Usual: New Jersey Employer Experiences with Family Leave Insurance*, Washington DC: Center for Economic Policy and Research, June 2014; Eileen Appelbaum and Ruth Milkman, *Leaves That Pay*; and Eileen Appelbaum and Ruth Milkman, *Unfinished Business: Paid Leave in California and the Future of U.S. Work-Family Policy*, Ithaca, NY: Cornell University Press, 2014.

13.) For a full description of the model and the methodology used, see Albelda and Clayton-Matthews/Institute for Women's Policy Research Paid Family and Medical Leave Simulator Model Documentation.

14.) The DOL survey asked respondents if they had taken a pregnancy medical leave or a new child/bonding leave with the birth of a new child. Since we know that women can and do take both types of leaves, the simulation (which is based on the survey responses) underestimates the number of leaves for these reasons. To adjust for that underestimation, we use a 95 percent take-up rate. This may overestimate the number of men who take a bonding leave.

15.) This level is set annually by the Commissioner of the Division of Unemployment Assistance.

16.) The simulator model is programmed to push 50 percent of those with full employer wage replacement who take leaves of 20 days (4 weeks) or longer onto the state program for the total length of the eligible leave. The model then assigns the difference between full employer pay and the program wage replacement as "top off" pay in determining employer costs.

17.) RI deducts 1.2 percent from the first $66,300 of wages (in 2016). Workers in New Jersey contribute .25 percent on the first $32,000 for TDI and the employer assessment varies, but ranges from .1 to .75 percent of the first $32,600 in earnings (in 2015). For the paid family program, employees are assessed .08 percent on the first $32,600 (in 2016). In California, the TDI and family leave programs are covered by a .9 percent assessment on employees' wages up to $106,742 (in 2016). These programs vary considerably in length and benefit level from each other and from the proposed Massachusetts program, so comparisons should be made carefully.

18.) For reference, the weighted annual median earnings for all workers in Massachusetts (using the 2010-2014 American Community Survey) was $35,000. Less than 10 percent of all Massachusetts workers earn more than $118,500 annually.

Youth Labor Force Conditions: Employment and Attachment for Young Workers in Massachusetts

Mark Melnik

PARTICIPATION BY YOUNG ADULTS IN THE MASSACHUSETTS LABOR FORCE HAS BEEN TRENDING DOWNWARD, ESPECIALLY SINCE THE GREAT RECESSION. AT THE SAME TIME, EMPLOYMENT RATES BY WORKS AGE 55 AND OLDER HAVE INCREASED, SUGGESTING COMPETITION WITH YOUNGER WORKERS FOR SCARCE EMPLOYMENT OPPORTUNITIES.

INTRODUCTION

Studies have shown that labor force participation rates and employment rates for teenagers and young adults have declined over the last several decades. These declines are attributable to several factors including fewer students working while attending school, more young people attending college, and competition from older and more experienced workers.[1] Previous studies have suggested that youth labor force participation is important for a variety of reasons. Teenagers and young adults participating in the workforce develop occupational employment skills earlier in life than those who do not join the labor force until later. Early participation in the labor force also provides opportunities for networking and developing professional connections, which are particularly important among low-income residents. It has also been shown that disconnected youths[2] are at an increased risk of negative socioeconomic outcomes and that early employment leads to a higher lifelong earning potential.[3] Labor market connectivity is associated with educational attainment, race, nativity, and socioeconomic status. A March 2014 report from The Brookings Institute reported that while employment has been difficult to secure among all young people, non-Hispanic whites, those from higher-income households, those with prior work experience, and those with higher education were more likely to be employed than their counterparts.[4]

This article is based on a study funded by the Boston Private Industry Council (Boston PIC).[5] The study's

focus was to examine historic and current young adult (16 to 24 years old) labor market patterns in Massachusetts, including employment and demographic trends, as well as regional differences in the state. This article will focus on historic changes in young adult employment in Massachusetts over the last 35 years; differences in labor force attachment by race, ethnicity, and socioeconomic status; and regional variation in young adult employment around the Commonwealth.

HISTORIC TRENDS IN YOUNG ADULT EMPLOYMENT IN MASSACHUSETTS

One way of showing how young adult labor force connectivity and participation has changed in recent years is by examining employment rates, both for young adults and the population at large. The employment rate, or the population-to-employment ratio, is the number of employed individuals in a group divided by the total number of individuals in that same group. The employment rate will be low for groups where there are significant numbers of unemployed individuals or individuals who are not participating in the labor force (i.e., individuals unemployed and not looking for work). Conversely, the employment rate will be higher for populations with low unemployment and high labor force participation rates. In general, employment rates are higher for adults 25 to 54 years old and lower for younger and older adults.

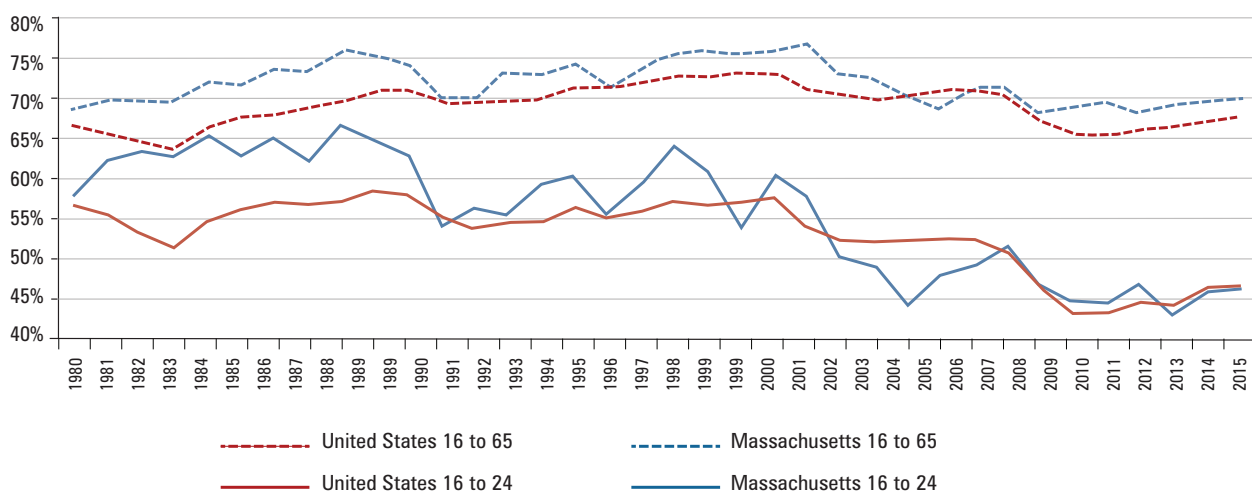
Using data from the Current Population Survey (CPS), we see in Figure 1 below that employment rates for prime working-age adults (16 to 64) have been fairly stable over the last 35 years (fluctuating with economic expansion and contraction). Over the same period, though, young adult employment has dropped precipitously.

For the U.S., the trend really appears to have taken shape in the early 2000s, when the young adult employment rate fell from nearly 58 percent in 2001 to just under 51 percent in 2008. Youth employment in the U.S. bottomed out in 2010, falling to approximately 43 percent. The latest declines in youth employment are undoubtedly related to employment loss during the Great Recession. In recent years, U.S. youth employment has increased slightly, up to 46.5 percent in 2015. That said, young adult employment in the U.S. is a full 10 percentage points lower today than in 1980 and nearly 11 percentage points lower than in 2000.

While the general trend in youth employment in Massachusetts is similar to the U.S. overall, there are some noteworthy differences. During the 1980s, Massachusetts was one of the leading states in youth employment, normally ranking in the top 10. During the 1990s, Massachusetts showed significant volatility in youth employment, generally falling to the middle of the pack of U.S. states overall. Today, with the employment rate in Massachusetts just over 26 percent for teenagers and almost 61 percent for young adults, the Bay State ranks 34th and 35th, respectively, among all U.S. states.

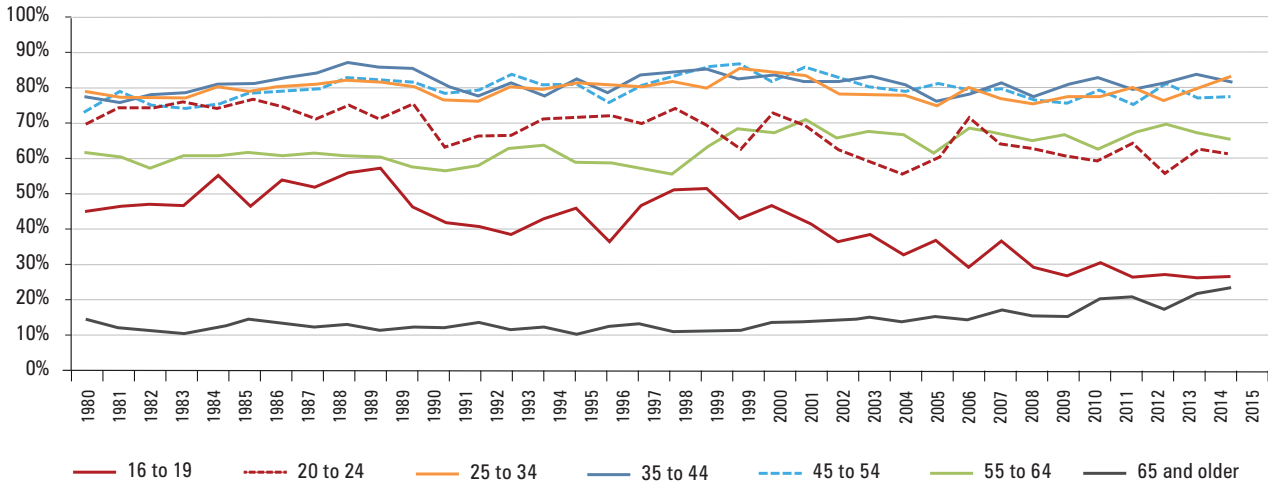
The observed shifts in employment rates for young adults in Massachusetts raise the question—how have employment rates shifted for other age cohorts in the state? As we see in Figure 2 below, the employment rates for adults 25 to 54 years old have not changed much over the last 35 years. On the other hand, we see that as the employment rates for teenagers and young adults in their

Figure 1. Employment Rates (1980 to 2015)



Source: Current Population Survey (CPS) 1980-2015; UMass Donahue Institute, Economic Public Policy Research Group

Figure 2. Massachusetts Employment Rates (1980 to 2015)



Source: Current Population Survey (CPS) 1980-2015; UMass Donahue Institute, Economic Public Policy Research Group

early 20s decreased, the employment rates for older workers, 55 to 64 years old and 65 and over, have increased.

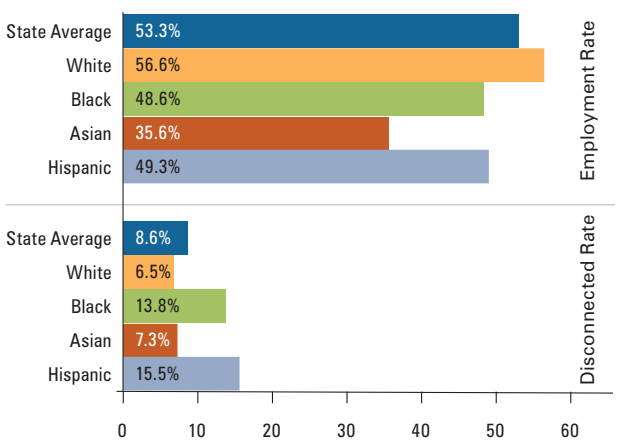
Since 2007, teenagers 16 to 19 years old have experienced the most drastic decline in employment rates, followed by 20 to 24 year-olds. Interestingly, since 2007, while each age cohort has experienced some decline in employment rates, employment among those 65 years and older has steadily increased from 14.4 percent in 2007 to just over 23 percent in 2015. This contrasts strikingly with the ten percentage-point drop in employment rates for teenagers during the same period. These data are consistent with the notion that older workers are competing with younger workers in the labor market at large.

RACE AND ETHNICITY AND YOUNG ADULT EMPLOYMENT IN MASSACHUSETTS

One of the most striking differences in young adult employment in the state is between racial and ethnic groups. Figure 3 shows the employment rate and disconnected rates for young adults by racial and ethnic groups. As noted earlier, the employment rate is the percentage of the population that is currently working. Also important when thinking about young adults is the disconnected rate, or the percentage of individuals who are neither working nor currently enrolled in school. For young adults, the vast majority should find themselves either working or enrolled in school, if not both. As we see in Figure 3, employment rates for young minority adults are significantly lower than for whites in Massachusetts. The employment rate for white young adults 16 to 24 years old is nearly 57 percent, compared with approximately 49 percent for both black/African-American and Hispanic young adults. Asians have the lowest employment rate among young adults, at just under 36 percent.

There are also substantial differences in the disconnected rates by racial and ethnic group. Statewide, 8.6 percent of the young adult population, 16 to 24 years-old, is "disconnected."[6] However, the disconnected rates for black/African-American and Hispanic young adults are more than 1.5 times the state average (13.8 percent and 15.5 percent, respectively). They are also higher than the rate for Asian 16 to 24 year-olds (7.3 percent), and more than two times higher than the rate for white young adults (6.5 percent).

Figure 3. Employment and Disconnected Rates by Race and Ethnicity—16 to 24 Year Olds



Source: 2014 American Community Survey (ACS), Public Use Microdata Sample, UMass Donahue Institute, Economic Public Policy Research Group

Taken together, the differences between white and Asian young adults and their black/African-American and Hispanic counterparts are concerning. While the Asian population has low employment rates, the correspondingly low disconnected rate suggests that a significant portion of the non-employed Asian population is enrolled in school. On the other hand, the low employment rates for black/African-Americans and Hispanics coupled with the high disconnected rates raise major concerns about labor market disconnectivity among these groups. Historically, the black/African-American and Hispanic populations in Massachusetts have lagged behind whites and Asians on a number of key socioeconomic indicators such as educational attainment, household income, and poverty status.

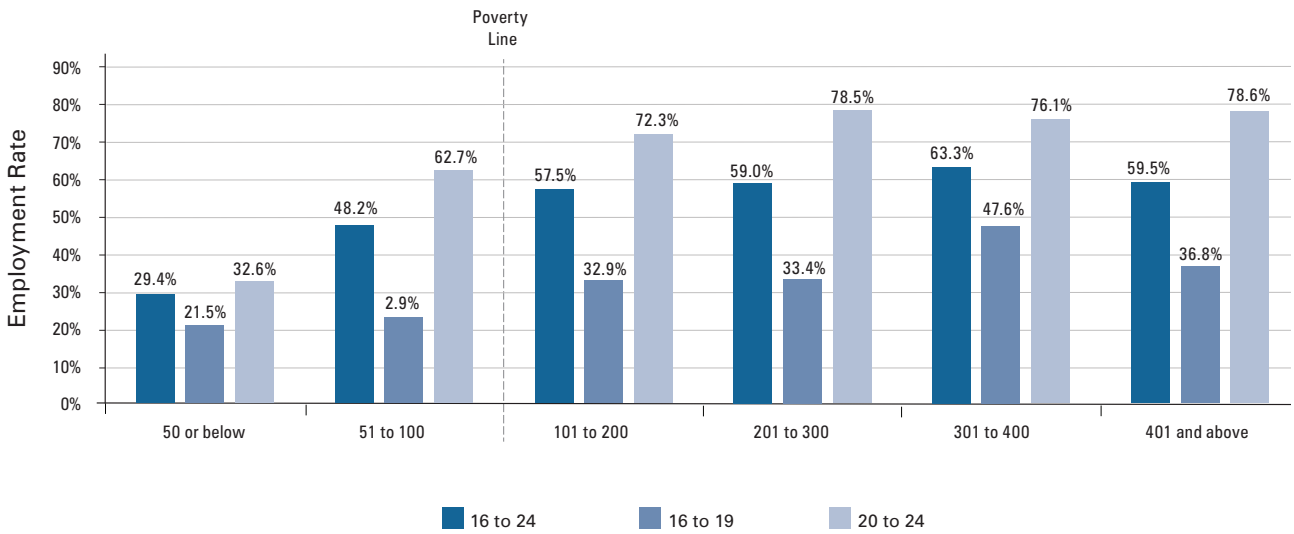
SOCIOECONOMIC STATUS AND YOUNG ADULT EMPLOYMENT IN MASSACHUSETTS

There is a clear correlation between socioeconomic status and employment for teenagers and young adults in Massachusetts. Figure 4 below shows employment rates for young adults by household income-to-poverty ratio.[7] Those in the 50 percent or below category are young adults living in households with incomes at half the poverty line or below. Those in the 51 percent to 100 percent category are young adults living in households with incomes at just over half the poverty line to the poverty line. Those in the 101 percent to 200 percent category exceed poverty by up to two times the poverty line.

For teenagers 16 to 19 years old living in the two "at or below the poverty line" categories, the employment rates are 21.5 percent and 22.9 percent. This rate climbs nearly 10 percentage points for those living just above the poverty line to three times above the poverty line. The employment rate for teenagers living in households earning between three and four times the poverty line is more than twice that for teenagers living in poverty.

The employment rate for young adults 20 to 24 years old in deep poverty (households earning 50 percent or less below the poverty line) is 32.6 percent. The employment rate for young adults essentially doubles for those living between 51 percent below and up to the poverty line. As household income increases, the young adult employment rate continues to rise. This makes sense for young adults 20 to 24 years old as some of them are likely full-time fixtures in the labor market and potentially primary earners in a household, so the relationship between employment and household income is, to some extent, expected. Interestingly, though, teenagers would not typically be thought of as primary household earners, so their income is not expected to be a substantial factor in household income. The data above show a clear class component in how teenagers manage to participate in the labor market, and that teens from more affluent backgrounds have an easier time finding employment than less affluent teens. However, this disparity does not reflect the desire to work among low-income teens.

Figure 4. Employment Rate by Income-to-Poverty Ratio



Source: 2014 American Community Survey (ACS), Public Use Microdata Sample, UMass Donahue Institute, Economic Public Policy Research Group

Note: Income to poverty ratio calculations take into account multiple family sizes and ages of family members, and they do not vary geographically. For reference, the official federal poverty threshold in 2016 for a family of four is $24,339. If a family's total income is less than that threshold, then it is considered to be in poverty.

The Boston Private Industry Council

A valued, long-time asset in providing paid work experiences for high school students, the Boston Private Industry Council (PIC) is the city's Workforce Development Board and school-to-career intermediary. To that end, the PIC connects youth and adults with education and employment opportunities.

As one of sixteen workforce boards statewide, the PIC oversees Boston's career center system. In partnership with the Mayor's Office of Workforce Development, it also monitors the federal investment in job training.

As the city's school-to-career intermediary, the PIC ***convenes*** multi-sector collaborations and ***connects*** employers with schools and students with jobs and internships. It ***measures*** progress on key education and labor market indicators such as high school dropout and graduation rates, college completion, and youth employment. And it ***sustains*** strategies to create career pathways for students and talent pipelines for employers.

The Role of Internships

In partnership with the Mayor's Office and the Boston Public Schools (BPS), the PIC coordinates summer and school-year jobs and internships for thousands of high school students. That includes identifying, preparing, and matching students with paid work experiences in professional environments, including hospitals, financial institutions, law firms, technology companies, and life science companies.

PIC career specialists prepare high school students for work through job-readiness workshops and career exploration activities. Students who are not ready for private sector internships receive sponsored job opportunities, primarily at community-based organizations, with funding from the state's *YouthWorks* program and private foundations.

The PIC recruits new companies to hire BPS students and supports participating employers by helping them coordinate student interviews, hiring, supervisor recruitment and training, and student evaluation. It also manages a new-employer network, which shares effective practices and makes classroom-workplace connections.

Engaging Stakeholders

The PIC also assists BPS students who are not on a path towards high school graduation. Launched in 2009, the BPS-PIC Re-Engagement Center (REC) reenrolls students who have dropped out of high school and redirects students who remain enrolled but do not attend school regularly. A national model for dropout prevention and recovery, the REC has been replicated in more than 20 cities. In Boston, this work has helped reduce dropouts in public high schools by 58% over the past ten years.

The Boston Opportunity Youth Collaborative (OYC), which the PIC co-convenes with the Boston Opportunity Agenda, bring together stakeholders to work on improving education and labor market outcomes for disconnected 16 to 24 year-olds in Boston. The OYC's Connection Center targets young people with a high school credential who are unemployed or underemployed and not pursuing further education or training and matches them with education or training programs and career-boosting employment opportunities.

Research that Informs Practice

The PIC relies on education and labor market research to inform all its strategies and initiatives. Its research team, for example, conducts postsecondary longitudinal analyses of BPS graduates to inform policymakers about the college enrollment and completion experiences of graduates.

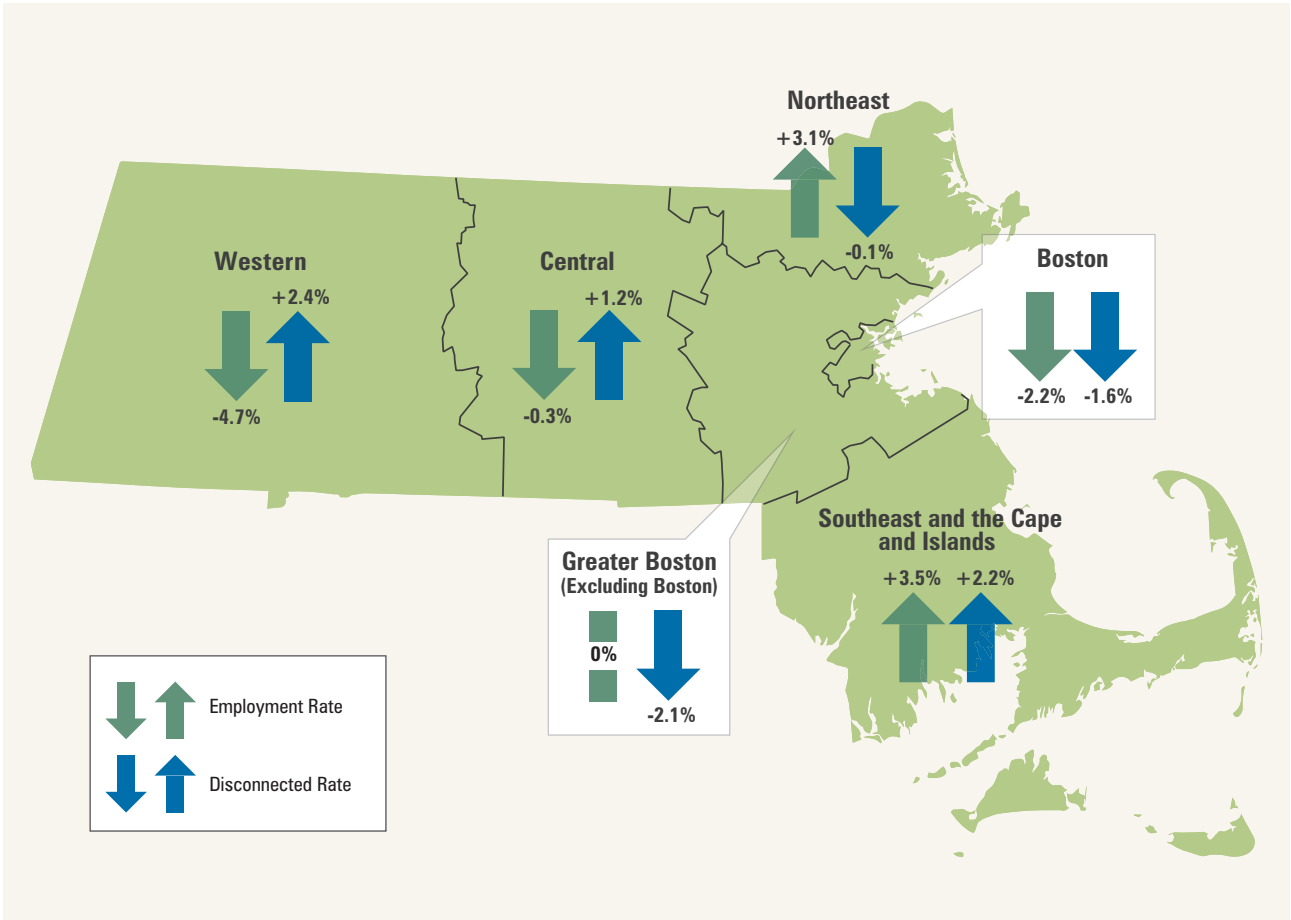
PIC researchers also support the city's school-to-career, dropout reengagement, postsecondary coaching, and opportunity youth initiatives. This entails collecting and analyzing demographic, service, and student outcome data. The PIC's research agenda emphasizes measuring progress on key education and workforce indicators and identifying critical gaps and other challenges. For the PIC, research must always further the goal of ensuring that Boston youth and adults have the opportunity to participate in the region's growing economy.

REGION-SPECIFIC LABOR MARKET DIFFERENCES

While this report has focused on the young adult labor force statewide, the reality is that workers participate in regional labor markets. Economic growth and demographic changes in Massachusetts have assumed different patterns across the state. In particular, the growth of the life sciences and technology sectors coupled with the concentration of colleges and universities in the eastern part of the state have led to different patterns of economic growth in Greater Boston than in other parts of the state. This is particularly true in the state's Gateway Cities, or mid-size, postindustrial cities, such as Springfield, Holyoke, or New Bedford, where economic growth, educational attainment, and labor force participation lags behind—in some cases significantly behind—state averages. With that in mind, this section briefly considers region-specific trends in young adult employment and labor market connectivity in the state.[8]

We split the state into six regions: Boston, Greater Boston (excluding the city), Northeast, Southeast and the Cape, Central, and Western.[9] Overall, the data suggest that labor market attachment is strongest for young adults in Greater Boston and in the Northeast region and toughest for young adults in the Western and Central parts of the state. Labor market attachment is weakest for young adults in the Western and Central parts of the state, driven in part by the numerous Gateway Cities in these regions (e.g., Springfield, Pittsfield, Holyoke, Worcester, and Fitchburg) that have lagged behind state averages in economic performance for years. Of particular concern is the labor market attachment of racial minorities in the Western part of the state, with disconnected rates for black/African American and Hispanic young adults among the state's highest. For example, more than one in three (36 percent) Hispanics 20 to 24 years old in Western Massachusetts are disconnected, the highest rate for any racial/ethnic group in this analysis.

Figure 5. Labor Market Attachment by Region Compared with State Averages—16 to 24 Year Olds



Source: 2010-2014 American Community Survey (ACS), Public Use Microdata Sample; UMass Donahue Institute, Economic Public Policy Research Group

Key regional observations include:

- Overall, young adult employment is highest in the Southeast and Cape region and in the Northeast.
- While the overall employment and disconnected figures in the Northeast look good compared with the state averages, there are significant differences by race and ethnicity in the region. The disconnected rates for black/African-American and Hispanic young adults in the Northeast are higher than the statewide average, and more than twice as high as the rate for whites in the region (22.6 percent, 26.0 percent, and 9.7 percent, respectively). This is of concern as the Northeast is home to both Lowell and Lawrence, two Gateway Cities with significant minority populations.
- The disconnected rates are highest in the Western, Central, and Southeast and Cape regions. The lowest disconnected rates are in Greater Boston and in the City of Boston. This is not surprising as a large number of young adults come to Boston and its surrounding communities to attend college. That said, the disconnected rate is higher for black/African-American and Hispanic youth in Greater Boston and the City of Boston than for white youth.
- The Southeast and Cape region has both high employment and high disconnected rates for young adults, reflecting some of the working class communities in the region. The region has the highest disconnected rates and lowest school enrollment rates for young adults 20 to 24 years old in the state. The Southeast and Cape region has the highest disconnected rates for white (13.8 percent) and black/African American (24.3 percent) 20 to 24 year-olds in the state. The disconnected rate for Hispanic 20 to 24 years old is also high at 27.8 percent (second highest in the state for the Hispanic group, only behind Western Massachusetts at 35.8 percent).
- The employment rate for young adults 20 to 24 years old is the same in both Boston and Western Massachusetts (58.8 percent compared with 64.3 percent statewide). However, Boston has the lowest disconnected rate for this population in the state (10.1 percent). The Western region has the second highest disconnected rate in the state for 20 to 24 year-olds (15.7 percent). The state average for this age group is 12.9 percent.

CONCLUSIONS

The current research examined historic labor market trends for young adults in the U.S. and Massachusetts as well as disparities in labor market attachment in the Commonwealth by selected key demographic characteristics and regions. In general, the research found that:

- Young adult employment has been declining over the last 25 years in Massachusetts, much like the rest of the U.S.
- This trend has accelerated since 2000 and especially since the Great Recession.
- While young adult employment has increased since the end of the Great Recession, employment rates are still below prerecession levels and are far below rates during the 1980s and 1990s.
- In recent years, young adult employment rates have declined, while employment rates for older workers (55 years and older) have increased, suggesting that younger workers are competing with older workers for opportunities in the labor market today.
- Employment rates tend to be lower for non-white racial and ethnic groups and for those from lower-income households.
- The regional labor market for young adults appears to be strongest in the Northeast and the Greater Boston regions.[10]
- Young adults in the Western and Central regions of Massachusetts (regions that include the Gateway Cities of Pittsfield, Springfield, Holyoke, Chicopee, Fitchburg, and Worcester) face tougher labor market conditions, with either low employment rates, high disconnected rates (a measure of those neither working nor enrolled in school), or both.

While some of the declines in young adult labor market participation are related to an increased emphasis on higher education, there remain a number of concerning trends in young adult labor employment. In particular, young adults do appear to be competing with older workers for job opportunities in the state. There appears to be weak labor market attachment in Massachusetts for non-white racial and ethnic groups, males, foreign-born residents, as well as those with limited educational attainment and those from less affluent households. Beyond that, the data show more difficult labor market conditions in particular regions of the state, notably the Western and Central parts of Massachusetts. These areas feature several Gateway Cities, such as Springfield, Holyoke, and Worcester, which have lagged behind state averages in economic performance for years. Conversely, labor market conditions for young adults appear more favorable in Greater Boston and the Northeast region.

These issues should be of great concern to public policy makers and job training professionals for two key reasons:

- Social, demographic, and regional disparities associated with young adult employment

- The impending retirement of baby boomers, which may empower young adults as a potential source of untapped labor supply for the state

In particular, young adults from either historically disadvantaged social groups or regions appear to be less likely to experience the benefits associated with early labor force participation (i.e., skill development, networking, etc.). In addition, with the impending retirement of the baby boomer generation over the next 20 years, the Commonwealth (as well as other states) will need to find suitable replacement labor. The relatively low employment rates and, in some cases, high disconnected rates for young adults in the Commonwealth signal an important opportunity for identifying and growing young talent in the state's labor force who can help fill critical labor gaps in the future. This is both a quality of life issue for young adults in the state, and a call for action in maintaining the economic strength of the Commonwealth in the coming years.

Mark Melnik is Director of Economic and Public Policy Research at the UMass Donahue Institute and Senior Managing Editor of this journal.

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5.) The study was conducted by the Economic and Public Policy Research (EPPR) group at the UMass Donahue Institute (UMDI). A copy of the full report, *The Young Adult Laborforce in Massachusetts* can be found at http://www.donahue.umassp.edu/our-publications/young-adult-labor-force_boston-pic_nov16. It goes into more detail about demographic and socioeconomic differences in young adult employment, including gender, nativity status, socioeconomic status, and educational attainment. The original report also further disentangles young adults and analzyes employment trends for ages 16-19 and 20-24 separately. It also looks at the recent history of occupations and industries for young adults.

6.) While beyond the scope of this work, the research team did look at the disconnected rates for young adults in Massachusetts from 2007 through the recently released 2015 ACS. As expected, the young adult disconnected rate increased during the Great Recession and has decreased during the recovery. That said, with low unemployment rates statewide and potential concerns about long-term labor shortages, disconnected youth can be a prime source of increased labor supply in the future. Moreover, young adult labor market disconnectivity has potential long-term ramifications in terms of individual skills acquisition, networking, earnings, and general labor market attachment.

7.) Income-to-poverty ratio is a calculation provided by the U.S. Census Bureau and is included in the ACS. This is a particularly useful measure because it accounts for household size in calculating the income-to-poverty ratio. That said, income-to-poverty is a strong proxy for household income in this analysis. Accordingly, the concepts will be used interchangeably.

8.) For this analysis, we used data from the 2010-2014 ACS Public Use Microdata Sample (PUMS). The 2010-2014 ACS is a 5-year average of data collected by the ACS. There are advantages and disadvantages to using a multi-year version of the ACS. The disadvantage is that the data are collected over several years and are not as sensitive to changes over short periods of time during the collection. For example, the 2010-2014 ACS employment rate for 16-24 year-olds is lower than what we see in the 2014 one-year sample. The reason is that the 2010-2014 data were partially collected during the tail end of the recession. The advantage, however, is that the five-year collection has a larger sample size. Because we split the data by region, we opted to use the five-year sample to make sure we had large samples of young adults in each region. The one-year data from earlier in the report should not be compared with the five-year data in this section.

9.) The regions used in our research are based on the *Mass*Benchmarks regions. Due to geographic limitations and sampling concerns, we combined the *Mass*Benchmarks regions of Pioneer Valley and Berkshires to create the "Western" region, and we combined the Southeast with the Cape and the Islands.

10.) The employment rates for young adults in the city are actually among the lowest in the state. However, the employment rates for the Greater Boston region outside of the city are among the highest in Massachusetts. The disconnected rates in both the city and the Greater Boston region outside of the city are among the lowest in the state.

Overcoming Barriers to Employment in a Tight Labor Market

Raija Vaisanen

CONDITIONS FOR THE UNDEREMPLOYED CALL FOR MULTIPRONGED STRATEGIES. THESE INCLUDE ACCELERATED LEARNING FOR ADULTS WITHOUT POSTSECONDARY EDUCATION, MORE ROBUST JOB-CONNECTION PATHWAYS FOR YOUNGER WORKERS, AND REGIONAL PARTNERSHIPS THAT PROVIDE TRAINING FOR JOBS IN DEMAND.

INTRODUCTION

As we face one of the tightest labor markets in more than 16 years, this issue of *Mass*Benchmarks explores the state of youth employment and paid family and medical leave policy in Massachusetts. While our overall unemployment rate is at a historic low—2.8 percent as of December 2016—younger workers 16-24 and workers with only a high school diploma are disproportionately unemployed and labor force participation has declined since the early 2000s. Alan Clayton-Matthews, Senior Contributing Editor for *Mass*Benchmarks, has often noted labor force constraints that Massachusetts will face as baby boomers retire and our workforce continues to age. Our residents who are unemployed today (more than 100,000) and those who have had limited or no attachment to the labor force face significant barriers to employment. They include navigating online applications and prehire assessments,[1] managing the financial tightrope associated with public assistance benefit "cliff effects,"[2] and mastering the skills necessary to meet the demand of employers throughout the state. In a tight labor market, policy makers, educators, workforce development professionals and businesses have a tremendous opportunity to work together to support and integrate these workers into our economy. In addition to the solutions proposed in this issue, here are a few additional strategies that the Commonwealth could test, strengthen or expand.

BUILDING A TALENT PIPELINE THAT RESPONDS TO INDUSTRY DEMAND

Driven by technology and globalization, the fast pace of change in the skills and credentials sought by industry requires that the Commonwealth continue to identify ways to accelerate learning and skill acquisition, build robust communication loops with industry, and create more effective on-ramps for younger workers. Economic data indicate that employers use a college degree as a proxy for a set of desired skills, including critical thinking, problem solving and work readiness. The Commonwealth can build career pathways that lead to degrees. It can also experiment with other demand-driven strategies like apprenticeships and competency-based education to test whether they—when developed in close partnership with industry—can be effective in moving people without college degrees into higher skilled careers.

The data further show that opportunity in the Commonwealth is skewing toward industries that are predominantly staffed with workers with bachelor's degrees and also toward careers that require a bachelor's degree or higher, like health care, education and finance. Given that educational attainment is spread unevenly across racial/ethnic lines in the Commonwealth, we should continue to address the achievement gap in education and target employment and training programs to serve populations that face chronic unemployment or underemployment. That will allow us to build a pipeline of skilled workers to fill jobs in demand.[3]

In Massachusetts a cross-secretariat body, the Workforce Skills Cabinet, coordinates strategy among housing and economic development, workforce development and education. In addition, leaders across state agencies use the federal Workforce Innovation and Opportunity Act to connect services through a career pathway framework. Regional sector partnerships, such as those funded through the Workforce Competitiveness Trust Fund (WCTF), provide training for jobs in demand across the Commonwealth, albeit on a small scale.[4] Massachusetts, through its YouthWorks program, is the only state to invest state dollars in subsidized employment and work readiness training for low-income teens.[5] By continuing to invest in what works while also moving forward with new strategies, Massachusetts invests in its biggest asset—the talent of its people. Here are some critical strategic areas:

Accelerated learning for adults without postsecondary education: With increasing skill demands, it is critical that adults with high school degrees or less and non-native English speakers have opportunities to engage in learning that advances their numeracy, literacy and work-readiness skills. That includes timely preparation for success in the workplace and in postsecondary programs. States are experimenting with mobile technology, competency-based education, accelerated learning, personalized learning and digital badges to increase the timeliness, scale and effectiveness of adult educational pathways. In Massachusetts, job seekers at community colleges, one-stop career centers and adult basic education programs have opportunities to remediate literacy, numeracy and soft skills using Career Ready 101, a product of ACT.

Robust pathways for younger workers struggling to connect to jobs: Many teens and high school graduates, as well as some new college graduates without work experience, find it challenging to connect to the labor market. Preparing teens for the workplace and connecting them to the entry-level labor market provides critical work experiences that studies show lead to better earnings and employment outcomes as adults. The lack of soft skills among new and emerging workers is a mantra repeated by businesses across the Commonwealth. There are opportunities to expand the use of competency-based work readiness training through the Signal Success curriculum or other soft skills curricula for teens and young adults in high schools, non-profit settings and work

settings.[6] For young adults in postsecondary programs, work experience through internships and co-operative placements provide pathways to employment after graduation and allow them to practice critical work readiness skills.

Leveraging relationships, instructors and equipment in career vocational and technical education (CVTE): CVTE is a proven resource for preparing high school students and adults for skilled jobs in demand in a wide range of fields including STEM, advanced manufacturing, health care, automotive, welding, building trades and information technology. CVTE schools are in constant communication with local businesses through business advisory committees and co-operative placement programs. Continued funding for capital equipment grants and sector training grants can support the scaling of CVTE training capacity and its alignment with employer demand.

Expanding "Learn & Earn" strategies: Apprenticeships and on-the-job training provide skill development, certification and upward mobility for workers who may not have—or need—a college diploma. Apprenticeships are well established in the construction field and starting to gain traction in manufacturing, health care and information technology. On-the-job training (OJT) provides opportunities for workers and businesses to try out an employment relationship while investing in the employee's skill development. The Commonwealth should encourage and promote apprenticeships and OJTs in new sectors and occupations.

Expanding regional sector partnerships that provide training for jobs in demand: Regional industry sector partnerships are bringing together business, education and workforce organizations to train the unemployed or underemployed for in-demand jobs. The workforce, education and industry are deploying regional planning to determine priority hiring opportunities. The WCTF supports training and convening activities that prepare a talent pipeline for industries experiencing skill shortages. The sector partnership model of training has a proven record of accomplishment of positive employment outcomes for unemployed workers, but the funding to support the model needs to be more consistent to bring the strategy to scale.

Investing in ongoing skill development of employed workers and Massachusetts businesses: The Commonwealth supports training for incumbent workers to meet businesses' needs and help strengthen their competitive position in the global market through the Workforce Training Fund. Given the challenge of baby boomer retirements, the Workforce Training Fund should be considered a key resource for investing in the skills of frontline workers and planning for leadership succession.[7]

Massachusetts' greatest strength is its talented workforce. Growing and supporting that talent is both the state's challenge and opportunity.

RAIJA VAISANEN is Research Director of the Commonwealth Corporation.

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