Recapturing the American Dream:

Meeting the Challenges of the Bay State's Lost Decade

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The Massachusetts Institute for a New Commonwealth (MassINC) is a non-partisan think tank and civic organization focused on putting the American Dream within the reach of everyone in Massachusetts. MassINC uses three distinct tools—research, journalism, and civic engagement—to fulfill its mission, each characterized by accurate data, careful analysis, and unbiased conclusions.

MassINC sees its role not as an advocacy organization, but as a rigorously non-partisan think tank, whose outcomes are measured by the influence of its products in helping to guide advocates and civic and policy leaders toward decisions consistent with MassINC's mission, and in helping to engage citizens in understanding and seeking to influence policies that affect their lives.

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ABOUT THE AMERICAN DREAM PROJECT

The American Dream Project is a multi-dimensional initiative that includes this research report, the MassINC Middle Class Index, long-form journalism in a special fall issue of *CommonWealth* magazine, and civic events to be held throughout 2012.

ACKNOWLEDGEMENTS

MassINC would like to acknowledge Partners Health Care and Blue Cross Blue Shield of Massachusetts for their generous support of MassINC's American Dream Project. We also express our gratitude to WGBH, our committed media partner on this important initiative.

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Dear Friend:

MassINC is proud to present *Recapturing the American Dream: Meeting the Challenges of the Bay State's Lost Decade*. This joint project with the Center for Labor Market Studies was made possible by the generous support of Blue Cross Blue Shield of Massachusetts and Partners Health Care. More so than any previous report, this research sheds light on the economic well-being of workers at a moment when public attention is hyper-focused on policymaking to rekindle the promise of the American Dream for those struggling to join the middle class and remain in its ranks.

The data presented in this report show that the last decade was extremely hard for Bay State residents. For the first time since World War II, the Commonwealth ended the decade with fewer jobs and families went without a raise.

The report describes how this sour economy created four key hurdles that Massachusetts must now overcome: 1) an education/economic development paradox in which workers prepare hard for today's knowledge industries only to find few jobs that fully require their skills; 2) a workforce challenge incorporating young and long-term unemployed residents into a labor force that will need their skills as aging workers retire; 3) growing income inequality and divisions, both geographic and demographic, that undermine long-term growth; and 4) lost confidence and optimism that the economy of the future will provide brighter opportunity than the challenged economy we face today.

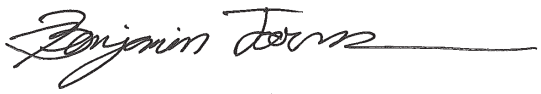
We are extraordinarily grateful to our partners at the Center for Labor Market Studies. The long hours that Andy Sum and his colleagues put in are evidenced in the more than 200 pages of incredibly precise and detailed analysis contained in this report.

Finally, we would like to thank our sponsors at Blue Cross Blue Shield of Massachusetts and Partners Health Care. Their support for this important work is testimony to their commitment to advancing the health, broadly defined, of all Massachusetts residents.

MassINC's mission is to support the vitality of the state's middle class by providing solid, objective research to inform public policy. This is the third time since our founding that we have paused to look carefully at how residents are faring in their pursuit of the American Dream. While the news is discouraging, we hope that these data encourage productive dialogue around the future of our commonwealth. As always, we welcome your feedback and invite you to become more involved in MassINC.

Sincerely,

Greg Torres
President



Benjamin Forman
Research Director

Recapturing the American Dream:

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Executive Summary

The first decade of this century coincided with a technological revolution that sparked the birth of a promising new economic age. But the opportunity was elusive, and the 2000s proved to be an exceptionally challenging time for Massachusetts. After two difficult recessions took their toll, the Commonwealth ended the decade with 150,000 fewer payroll jobs, and with one-quarter of the state's workers not contributing to the economy at their full potential. Accounting for inflation, income remained flat for the average family and fell for many. Perhaps most disconcerting, Bay Staters lost confidence in the future, a defining feature of the American spirit and a key ingredient for growth.

The nation faced the same challenges as Massachusetts, and many states have endured far more serious consequences. While addressing the economic forces we confront will require a strong federal response, citizens of Massachusetts must reflect thoughtfully on the implications of this Lost Decade. Charting a pathway toward renewed prosperity begins with an accurate understanding of where we, as a commonwealth, stand.

To provide this context, *Recapturing the American Dream* offers an exceptionally detailed portrait of the state's labor markets and how they compare to our own recent past as well as labor markets nationally. This research compares economic data stretching back over several decades with the most up-to-date information available. Data from the Census Bureau, the Bureau of Labor Statistics, and other government agencies are reinforced with findings from survey data collected by MassINC and others.

While we offer some policy proposals for consideration, the primary purpose of this research is to comprehensively synthesize the facts in a manner that provokes and supports informed public dialogue.

The full report provides an objective and methodical presentation of the data. In this executive summary, we organize the findings thematically according to the challenges that strike us as most imperative after a careful review.

In our assessment, the Lost Decade's legacy has left four key hurdles the Commonwealth must now overcome:

1. The Education/Economic Development Paradox. Massachusetts has led the way in preparing its workforce for a knowledge economy, but this remarkable progress has not produced the expected economic gains. If our current pathway of expanding educational attainment does not, on its own, guarantee improved economic outcomes, this raises questions for both how we invest in education going forward and what other conditions are necessary to leverage the state's skilled workforce fully as an economic asset.

2. The Workforce Challenge. A talented workforce is the state's most valuable economic asset, but job creation woes have taken a toll on this resource. Workers need training and steady work experience to reach their full potentials. With many residents waiting on the sidelines and not receiving adequate preparation, Massachusetts companies may find it challenging to replace aging workers with experienced employees in the coming years.

3. The Big Divides. A half-century ago, Massachusetts had one of the most balanced family and

household income distributions in the nation. Today, the distribution of income in Massachusetts is one of the most unequal. While there are no easy answers to the problem of increasing income inequality, it must be taken seriously. Rising income inequality threatens the fabric of our Commonwealth and places a drag on long-term growth and on the ability of residents to achieve the American Dream. While the discussion of inequality frequently focuses on the difference between those at the top and the bottom of the pay scale, increasingly, labor market disparities by educational attainment, generation, gender, and region of the state underlie inequality in our state.

MASSACHUSETTS DID A REMARKABLE JOB UPGRADING THE SKILLS OF ITS WORKERS.

4. Restoring Confidence in the American Dream. The American Dream is based on a conviction that the future holds opportunities worthy of hard work and sacrifice and that such effort will be rewarded. In the past, unbending optimism has helped Americans emerge from difficult times stronger and more resilient. Because the challenges of the past decade have directly undermined this pillar of the American Dream, the task of restoring confidence and growth has been made more difficult.

The retelling of this bulleted summary below expands upon these key points, providing data and analysis from the report and drawing inferences about what these trends mean for economic policy at both the state and federal level.

1. THE EDUCATION/ECONOMIC DEVELOPMENT PARADOX

Massachusetts made impressive gains increasing the skills of its workforce between 2000 and 2010, yet the data in this report clearly show that the state did not reap the expected returns. Output growth was anemic relative to past decades, and well below the growth rate for the US overall. Compared to their national counterparts, the state's workers increased their productivity at a slower rate. Massachusetts failed to create jobs during the decade, even more so than other states. Slow output growth and job creation had real consequences for Massachusetts workers, who despite their additional skills did not find rewards in the form of higher pay.

Impressive Educational Attainment Gains

Massachusetts began the 2000s with the most skilled workforce in the nation. Nearly 37 percent of the state's resident workers held at least a bachelor's degree. This was well ahead of the US average (28 percent) and highest among the 50 states. Moreover, Massachusetts pressed ahead over the course of the decade. By 2010, nearly half (46 percent) of all workers had a bachelor's or higher degree. The state expanded its lead over the nation to 13 percentage points and held on to its first place position among the states.

While some of the gain in percentage terms was driven by less educated workers disproportionately dropping out of the labor force, there is no question that Massachusetts did a remarkable job upgrading the skills of its workers. The biggest gains actually came from workers with advanced education. Between 2000 and 2010, the number of employed residents with a master's degree or higher increased by 171,000, 39 percent in a single decade. The state also added nearly 99,000 workers with bachelor's degrees, a 13 percent increase.

Anemic Output and Productivity Growth

Despite adding 270,000 workers with at least a four-year college degree to the state's economy, Massachusetts struggled to increase its output during the last decade. Gross State Product (GSP) rose by just 11 percent between 2000 and 2010. This growth rate was extremely weak compared with the two prior decades. In the 1980s, the Massachusetts economy grew by 58 percent; the 1990s produced a 40 percent gain.

Not only was the state's output growth slow compared to the past, Massachusetts's growth rate was below average for the nation; US output (GDP) increased by 17.7 percent between 2000 and 2010. Failure to keep pace reduced the competitiveness of the Commonwealth's economy. Ranked among the 50 states and the District of Columbia, Massachusetts's per capita output fell three places, from 4th highest in 2000 to 7th highest in 2010.

Similarly, the state fell below average on labor productivity growth, measured by output per hour of work. Labor productivity grew by 17.7 percent in Massachusetts versus a growth rate of 19.4 percent for the US. Among states, the labor productivity growth rate achieved by Massachusetts workers ranked 34th highest.

Poor Job Creation Performance

In part, slow growth was attributable to a failure to create employment opportunities. For the first time since World War II, Massachusetts ended a decade with fewer jobs. Between 2000 and 2010, Massachusetts lost 143,000 jobs — a 4.3 percent decline in payroll employment. In percentage terms, only six states posted worse job generating performances over the decade.

Job losses meant the number of employed residents fell. In 2010, there were 38,000 fewer workers (-1.4 percent) in Massachusetts than in 2000.

Massachusetts was not the only state to experience a disconnect between educational attain-

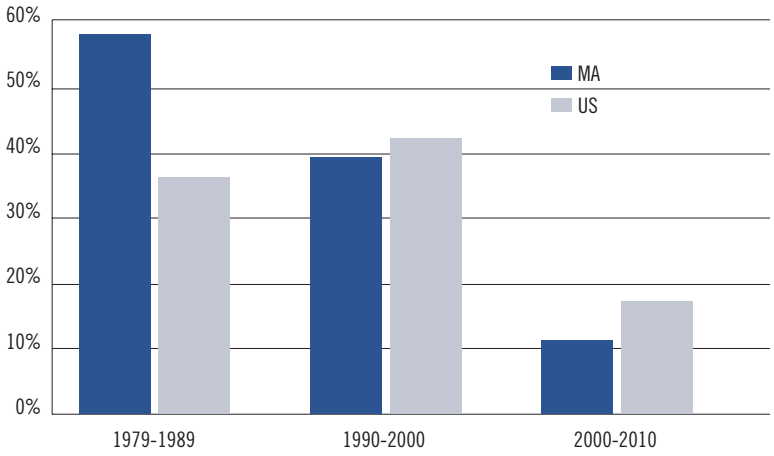
ES Table 1:

Trends in the Number of Employed Civilians (16+) in Massachusetts by Educational Attainment, 2000-2010 (annual averages, numbers in 1000s)

EDUCATIONAL GROUP	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
<12 or 12 years, no high school degree/GED	338	200	-138	-41%
High school degree/GED	908	776	-132	-15%
Some college, no degree	503	472	-31	-6%
Associate's degree	297	293	-4	-1%
Bachelor's degree	758	857	99	13%
Master's or higher degree	437	608	171	39%
Total	3,238	3,200	-38	-1%

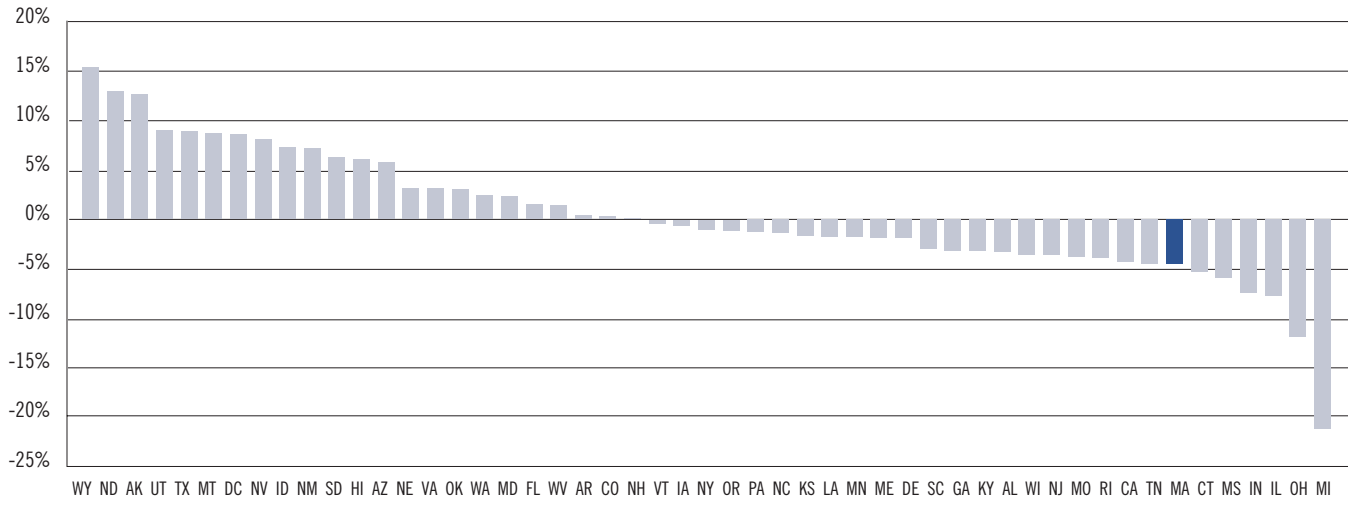
ES Chart 1:

Growth Rates of Real Gross State Product in Massachusetts and the US



ES Chart 2:

Trends in the Payroll Employment Levels of the Nation's 50 States and the District of Columbia, 2000-2010



Source: US Bureau of Labor Statistics, Current Employment Statistics

ment and employment growth. The correlation between the share of employed workers with at least an associate's degree in 2000 and payroll job growth between 2000 and 2010 was slightly negative across the 50 states. A more highly educated workforce did not lead to above average job growth.

Falling Short of Our Potential

Many would be inclined to dismiss the state's job creation woes during the Lost Decade as unavoidable given the great economic difficulties the nation experienced over the period. But it is important to recognize that the Massachusetts economy entered the decade with a favorable industry composition that could have offset job losses associated with decline in the US economy. If the state's mix of industries had grown at the same rates as they grew throughout the nation, Massachusetts would have added more than 75,000 jobs between 2000 and 2010.

Key Massachusetts industries grew at slower rates in the Commonwealth than they did nationally. For example, the professional, scientific, and technical sector grew by just 4 percent in Massachusetts versus 11 percent nationally. If this sector had held its market share by matching the national growth rate, Massachusetts would have created an additional 15,400 jobs. Similarly, if the finance and insurance sector in Massachusetts, which shed 9 percent of its jobs, had grown slightly as it did nationally, the state would have gained 400 finance jobs instead of losing 16,000.

This same shift-share analysis provides a lens to look at how the state's industries compared to the nation's in output terms. While our industry mix was not positioned to increase production, it should have had a neutral effect. In other words, GSP should have increased at the same rate as GDP. But key industries like insurance and real estate, and computer systems design did not keep pace over the decade with increased production; the Massachusetts economy's growth rate was about one-third lower than the nation's (11 percent vs. 17.6 percent).

The state's failure to derive more growth from its skilled workforce asset is another striking symbol of the Lost Decade's education/economic development paradox.

Wage and Income Stagnation

With negative job growth and weak output growth, workers did not enjoy wage gains and the state's families and households saw their income growth stall or decline. While workers nationally experienced a 4 percent increase in mean weekly wages over the last decade, the Commonwealth's workers saw their wages rise by just 0.1 percent between 2000 and 2010.

It is some comfort that Massachusetts workers enjoy the nation's highest weekly wages, but the region's outsized and rising cost of living absorbs a significant share of this pay premium. For workers that have invested heavily in education, it is imperative that earnings keep pace with these growing costs.

Despite the remarkable educational upgrading of the state's workforce, Massachusetts, like the nation, couldn't stop the last decade from becoming the first since the Great Depression where households experienced no income growth. Between 1999 and 2009, median household income in Massachusetts fell by 6.1 percent. Nationally, household income fell by 9 percent.

Like households, Massachusetts families also fared better than the nation. Their income rose by 0.2 percent during the decade versus a 5.1 percent decline for the US overall. However, this disparity is explained by demographic advantages, including the state's more educated, dual-earner families. Again, the education/economic development paradox is unmistakable. Income growth stagnated during a decade in which Massachusetts increased the share of families headed by a member with a four-year degree by more than 6 percentage points (36.9 percent in 2000 to 43.3 in 2009).

2. THE WORKFORCE CHALLENGE

The greatest near-term legacy of the Lost Decade is unwinding the twists it created in the state's workforce. Older workers have delayed retirement. As a result, younger residents have not found entry points to begin their careers and accumulate the skills they will need when called upon to replace the state's aging workers. In addition, nearly half of residents dislocated from the labor force by the Great Recession have become long-term unemployed, a condition with real consequences for both individual well-being as well as the state's social safety net. As leaders build recovery strategies, they will need to develop policies that proactively and effectively address these workforce challenges.

A Surplus of Underutilized Labor

The Lost Decade left nearly 1 million Massachusetts working-age residents underutilized. In 2010, 1 in 4 Massachusetts workers (905,600) were either unemployed, underemployed, mal-employed, or in the labor force reserve (i.e., workers wanting a job, but not actively looking).

Over the decade, both the number of un- and underemployed workers increased by a factor of three. In 2010, there were nearly 300,000 unemployed workers and almost 171,000 underemployed residents. Another 87,000 residents stood on the sidelines in the labor force reserve.

Perhaps the most remarkable (and least visible) challenge is the underutilization of the state's skilled workers. More than a third of Massachusetts residents with associate's degrees (91,700) and over one-quarter of residents with bachelor's degrees (227,800) were mal-employed in 2010 (i.e., working in jobs that do not typically require a college degree). While the most educated residents have fared slightly better, estimates still suggest that 1 in 10 workers with master's degrees (55,400) were mal-employed in 2010.

Accounting for unemployment, under-

employment, and mal-employment, just half of Massachusetts residents with an associate's degree and less than 60 percent of those with a bachelor's degree were fully utilized and working in a college labor market job in 2010.

Heavy Reliance on Older Workers

A decade ago, Massachusetts faced a serious labor shortage. In 2000, the state's 2.7 percent unemployment rate was the 4th lowest in the nation. With an older workforce, there were real questions about how the state would replace retiring Baby Boomers. The Great Recession's heavy toll on the financial assets of middle-class families, particularly among those nearing retirement, has kept many working longer, exacerbating the problem younger workers face finding opportunities to enter the state's workforce.

THE MASSACHUSETTS ECONOMY IS NOW PARTICULARLY RELIANT ON OLDER WORKERS.

Between 2000 and 2010, the number of employed residents under age 55 in Massachusetts dropped by 12 percent (261,000). This loss was nearly offset by a dramatic 44 percent increase (223,000) in workers ages 55 and older. This age twist is particularly visible in the number of residents past retirement age continuing to work full-time. The share of employed workers ages 65 to 74 holding full-time jobs increased from 40 percent in 2000 to nearly 60 percent in 2010.

Relative to other states, the Massachusetts economy is now particularly reliant on older workers. While the Commonwealth falls in the middle of the distribution ranked by employment rates of workers under age 55, our 68 percent employment-to-population ratio for residents ages 55 to 64 ranks 9th highest among states.

The Long-Term Unemployed

More than tripling the number of unemployed, the Lost Decade changed the nature of unemployment dramatically. In 2000, many unemployed workers had left their jobs to search for something better or they were new entrants or reentrants to the workforce; only 39 percent had permanently lost their jobs. In 2010, permanent job losers made up more than 58 percent of the Commonwealth's unemployed workers (a ratio that ranks 4th highest among the states).

With so many residents looking for work in an economy with few jobs vacancies, mean durations of unemployment rose dramatically over the past decade. In 2000, the typical unemployed resident was back to work in 11 weeks. In contrast, through the first five months of 2011, the average unemployed residents had been without work for 33 weeks, a record high for the state.

In 2000, only 1 in 8 unemployed persons in Massachusetts was categorized as long-term unemployed (jobless for 26+ weeks). In 2010, long-term unemployed workers made up 42 percent of the unemployed, a historical high. Moreover, the Lost Decade drove up the number of very long-term (jobless for 52+ weeks) unemployed residents exponentially, from 3,000 to 90,000. Experiencing unemployment for this length of time has serious consequences for the mental health of workers as well as their re-employment and long-term earnings potential.[1]

3. THE BIG DIVIDES

The Commonwealth's post-World War II social fabric was stitched in an era during which Massachusetts had one of the most even income distributions among the states (in a much more egalitarian nation). Today, the distribution of income in Massachusetts is one of the most unequal (in a country with a growing economic divide). Uneven opportunity in the state's labor markets has sown additional division by education, gen-

der, generation, and region. Left unaddressed, these divisions will aggravate the inequalities in our commonwealth.

By Income

Income inequality has been on the rise in Massachusetts since the 1970s. While inequality grew at a slower pace over the last decade, with middle-class households seeing their incomes fall, the continued pulling apart has finally captured the public's attention.

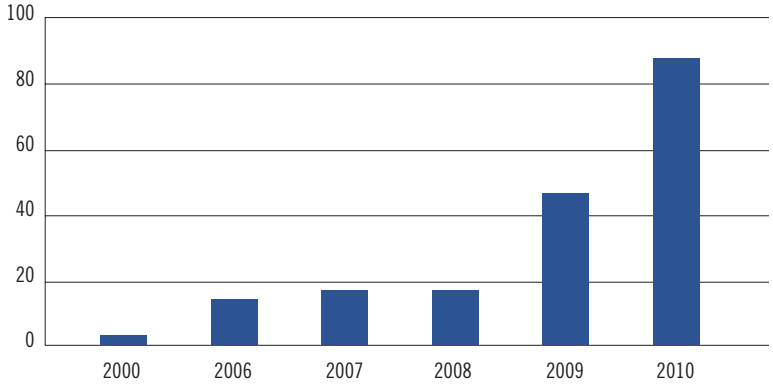
The ratio between the income earned by the top 1 percent of families (i.e., the 99th percentile) and families at the bottom of distribution (i.e., the 10th percentile) rose slightly over the decade. In 1979, the top 1 percent earned 10.9 times more income than families at the 10th percentile. In the 1980s, this ratio rose nearly 50 percent to 15.8 times more. In the 1990s, it climbed nearly 50 percent again to 23.1 times more. Between 1999 and 2009, the ratio climbed just 3 percent to 23.7 times more.

These large disparities in the economic well-being of Massachusetts families are the result of uneven income growth. Between 1979 and 2009, families at the 10th percentile saw their incomes rise by just 6 percent. For families in the middle of the distribution, income grew by 25 percent. In contrast, families in the 90th percentile enjoyed large gains of nearly 50 percent, and families at the very top of the distribution (99th percentile) obtained a 129 percent gain.

Looking back all the way to 1959, when Massachusetts had one of the nation's most even income distributions, the share of all money income obtained by Massachusetts households in each of the bottom 4 quintiles of the distribution has declined, while the share obtained by households in the top quintile has increased. The bulk of the gain in income went to households in the top decile of the distribution. In 1959 the top 10 percent of households earned 40.9 percent of all the income; in 2010, they took home 51.4 percent.

ES Chart 3:

Trends in the Number of Very Long-Term Unemployed in Massachusetts, Selected Years, 2000-2010 (numbers in 1000s)



These income growth disparities are largely the product of industrial and occupational change over the past several decades. During the Lost Decade, workers in different occupations continued to experience dramatically divergent economic fates. Between 2000 and 2010, workers in the lowest wage industries (e.g., retail trade, accommodation and food services) typically fared worst, either obtaining no wage improvement or declines approaching 20 percent. In contrast, higher wage industries (real estate, educational and health services, and management of companies) experienced earnings increases well above 10 percent.

The mean weekly earnings of wage and salary workers across the state's industries now vary to an amazingly wide degree. At the bottom of the distribution are workers in the accommodation and food services industries, with an average weekly wage of only $372, and those in other services (repair, personal care) and retail trade, with wages in the $530 range. At the top of the distribution are workers involved in the management of companies, who earn an average of $2,000 weekly, security brokers with an average wage of $3,860 weekly, and investment bankers, who earn an average of more than $5,000 each week.

ES Table 2:

Changes in Key Relative Family Income Ratios in Massachusetts, 1979-2009

RELATIVE INCOME MEASURE	1979	1989	1999	2009	CHANGE IN RATIO 1979-2009
Y99/Y10	10.9	15.8	21.3	23.7	12.8

Another major driver of inequality both nationally and particularly within Massachusetts is the growing pattern of what demographers term assortative mating (i.e., the tendency among individuals to marry partners with a similar educational attainment or socioeconomic background). The substantial increase in women with bachelor's degrees in recent decades has resulted in a growing number of families in which both spouses possess a college degree. In these couples, husbands and wives are more likely to both work full-time and they have significantly lower separation and divorce rates.

Among less educated workers, the disproportionate loss of jobs in occupations typically filled by males has created a dearth of "marriageable men" and women without degrees have had a difficult time finding partners.[2]

The negative impact of this economic reality multiplies generationally because a growing number of children belong to single-parent families with dramatically lower resources, which translates into reduced prospects in this increasingly competitive global economy.[3] The median incomes of families in Massachusetts range from a low of $19,790 for female-headed families without a high school diploma, to almost $50,000 for male-headed families with a high school diploma, to highs of nearly $118,000 for married-couple families headed by a bachelor's degree holder, and $140,000 for married-couple families led by a head possessing a graduate degree.

By Educational Attainment

The Lost Decade's particularly harsh treatment of unskilled workers has widened these divides.

Labor underutilization rates (un- or underemployed) for Massachusetts workers vary considerably by educational attainment. Nearly one-third (32 percent) of high school dropouts and almost one-quarter (22 percent) of those without a high school diploma or GED were not fully utilized in the state's labor market in 2010. In contrast, the labor underutilization rate was slightly below 10 percent for bachelor's degree holders and just 5.6 percent for those workers holding a master's or higher degree at the end of the decade.

Massachusetts workers with limited education face exceptionally high unemployment. Nearly 20 percent of those lacking a high school diploma or GED and 12 percent of residents with just a high school degree were unemployed in 2010; in comparison, unemployment was just 5.5 percent for bachelor's degree holders and 3 percent for those with a master's or higher degree.

These labor market challenges brought income down sharply among households with limited educational attainment. Households headed by high school dropouts lost nearly 30 percent of their median income between 1999 and 2010; income fell by 16 percent for households with just a high school degree or GED. College-educated households, on the other hand, were largely protected from an income shock. Median income fell by only 4 percent for those with bachelor's degrees and just 2 percent for graduate degree holders.

By Generation

The Lost Decade has also opened a generational shift that could have long-term consequences for the Bay State economy.

Younger workers are by far the most heavily underutilized in Massachusetts. Over one-third

of the state's teens (ages 16 to 19) and more than one-quarter of young adults (ages 20 to 24) were un- or underemployed in 2010. In contrast, underutilization rates were below 15 percent in 2010 among the state's older age groups.

Young residents that do find work take home significantly less pay than their peers in previous generations. Between 1989 and 2010, the state's youngest workers (those under 25 years old) saw their median weekly earnings fall by 8 percent; 25-34-year-old workers lost 2 percent of their weekly earnings. During this period, older age groups obtained substantial wage increases, ranging from 20 percent for those ages 45 to 54 to 52 percent for those 65 and older.

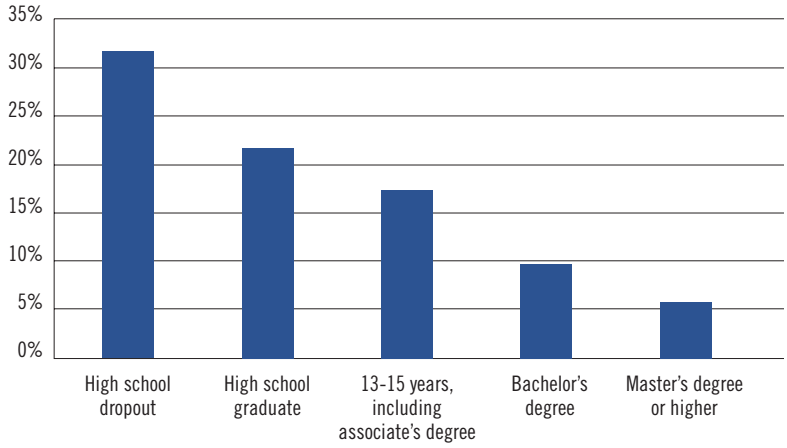
Among the state's households, those headed by younger adults (under age 30) experienced the sharpest decline (-7 percent) in income between 1999 and 2010. Similarly, families headed by young adults also saw the steepest decline in median real family income (-12 percent) over the decade. Whereas young families earned nearly 90 percent of the state median family income in 1979, young families were taking home just 58 percent of the state median income in 2009.

With young Bay Staters racking up unprecedented levels of student loan debt, it has become imperative that they find college labor market jobs. Graduates must utilize their skills to reap real returns on their investment. In 2010, the state's employed bachelor's degree holders with college labor market jobs earned wages that were 56 percent higher than mal-employed college graduates. Employed bachelor's degree holders working in a college labor market job had mean weekly earnings nearly $600 per week higher than the mean weekly earnings of high school graduates; however, mal-employed college graduates were paid just $110 per week more than workers with only high school degrees.

These generational challenges could curb economic growth for decades. Young residents who struggle to gain early work experience will suffer consequences over the course of their careers. They may delay marriage and have fewer children. With limited wages and high debt levels, they will struggle to save and purchase homes. Down the road, they will also lack assets for a secure retirement. These trends would hamper the state's housing markets, population growth, and economic growth, which would in turn have a large negative fiscal impact for state and local governments.

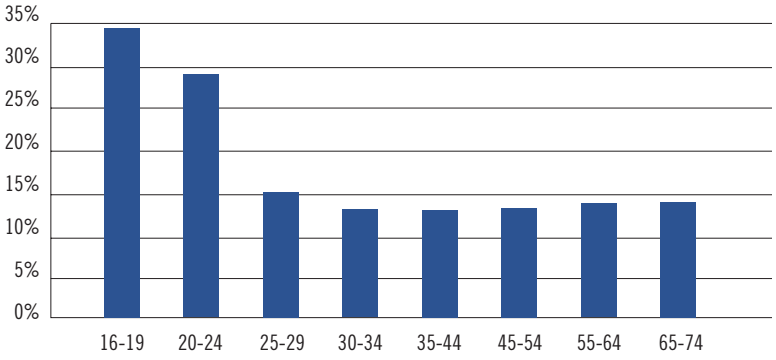
ES Chart 4:

Labor Underutilization Rates in Massachusetts in 2010 by Educational Attainment (annual averages)



ES Chart 5:

Labor Underutilization Rates in Massachusetts by Age, 2010



By Gender

Massachusetts males are another demographic that fared poorly in the labor market during the Lost Decade. Between 2000 and 2010, male employment declined by 81,000 residents while female employment grew by 43,000.

For more than two decades, the Massachusetts economy has shown extremely uneven performance in terms of creating jobs for men. But the differential impact of the Great Recession is particularly striking. While the rate of decline in male employment (-6 percent) in Massachusetts between 2007 and 2010 was similar to the national average, no other state came close in the share of job loss attributable to men over this period — males accounted for 200 percent of the net decline in civilian employment between 2007 and 2010.

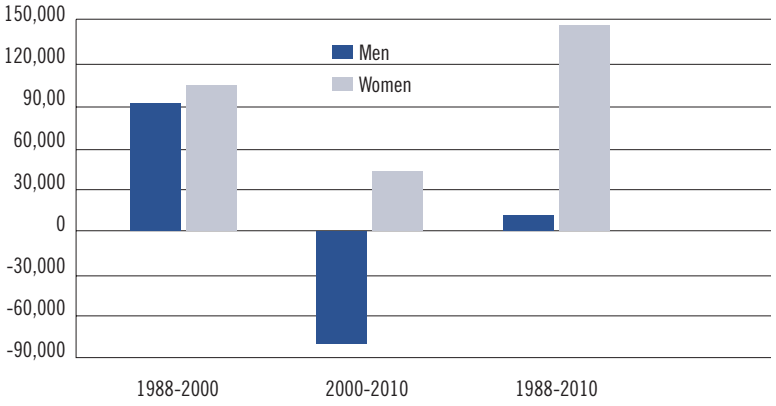
While the recovery has led to some growth in occupations predominately held by men, male unemployment continues to substantially outpace female unemployment in Massachusetts. During the first five months of 2011, unemployment stood at 9.2 percent for men versus 5.9 percent for women.

To get men in Massachusetts back to their 2000 full-time employment-to-population ratios, the state must add 215,000 full-time employed males.

Just as the challenges facing today's youth have long-term implications, the Lost Decade's disproportionate impact on men will have enduring consequences for family formation. While the Great Recession caught many men off guard, it is also clear that the market has been signaling changes for quite some time. While women have responded by upgrading their skills, men have been slow to follow suit. For example, research by the Center for Labor Market Studies has found that among students who graduated from Boston Public Schools in 2000, women were nearly 1.5 times more likely to obtain a four-year college degree; black and Hispanic women were more than twice as likely as black and Hispanic men to complete four-year degrees.[4]

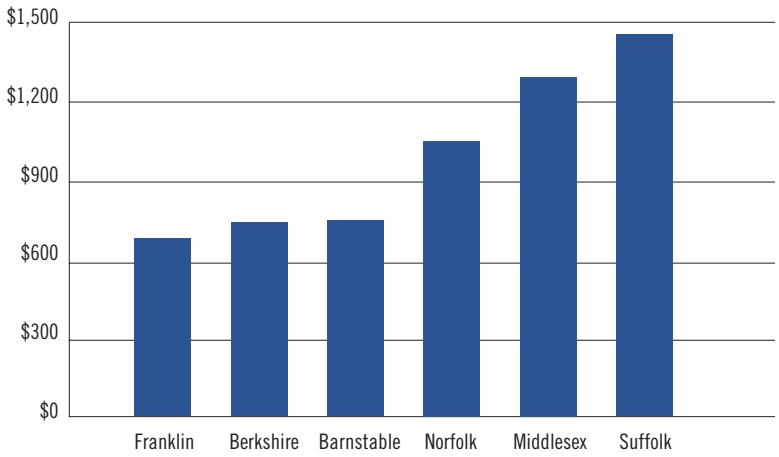
ES Chart 6:

Trends in Civilian Employment Among Men and Women in Massachusetts from 1988-2000, 2000-2010, and 1988-2010 (annual averages, numbers in 1000s)



ES Chart 7:

Average Weekly Earnings of Massachusetts Wage and Salary Workers in the Three Lowest and Three Highest Wage Counties, 2010



By Region

While most Massachusetts counties lost jobs during the last decade, the defining feature in the state's economic geography remains the large and growing disparities in income and wages across regions.

Over the last decade, uneven rates of household income growth were particularly stark. Between 1999 and 2009, households in the state's three western counties endured double-digit income declines. The drop was most dramatic in Berkshire County (20 percent), followed by Hampden County (11 percent), and Franklin County (10 percent). In contrast, household income grew by 5 percent in Suffolk County; in other Greater Boston counties, household income fell just slightly over the decade.

Uneven growth in household income is a reflection of uneven growth in pay. Between 2000 and 2010, the percent change in weekly earnings ranged from a 4 percent decline for jobs in Berkshire County to a 4 percent gain for jobs located in Suffolk County.

These modest changes added to already sizeable pay differentials. In 2010, weekly wages ranged from a low of $684 for jobs located in Franklin County to a high of $1,471 for jobs located in Suffolk County. The ratio between pay in the state's lowest and highest wage counties grew from 2.06 in 2000 to 2.15 in 2010.

Past research by MassINC, the Center for Labor Market Studies, and others has examined these extensive regional economic development imbalances in more detail.[5] Signs suggest that a recovery driven by knowledge industries predominately located in Greater Boston may further these uneven growth patterns and conceal the deep and unmet needs of residents living in other parts of the Commonwealth.

4. RESTORING CONFIDENCE IN THE AMERICAN DREAM

There are two understandings central to the American spirit: the belief that anyone can get ahead with hard work and a little bit of luck; and faith that the next generation will enjoy a standard of living higher than the previous. The optimism inherent in these beliefs has had real economic value. Citizens who see opportunity in the future are more likely to invest in themselves and the economy. If residents remain disheartened by the Lost Decade, their pessimism may become a self-fulfilling prophesy reducing future growth.

The findings in this report suggest that residents have not fully benefited from their efforts in the state's economy. Public opinion data reveal the deep-seated frustration and concern residents feel for the economic future.

The Broken Link

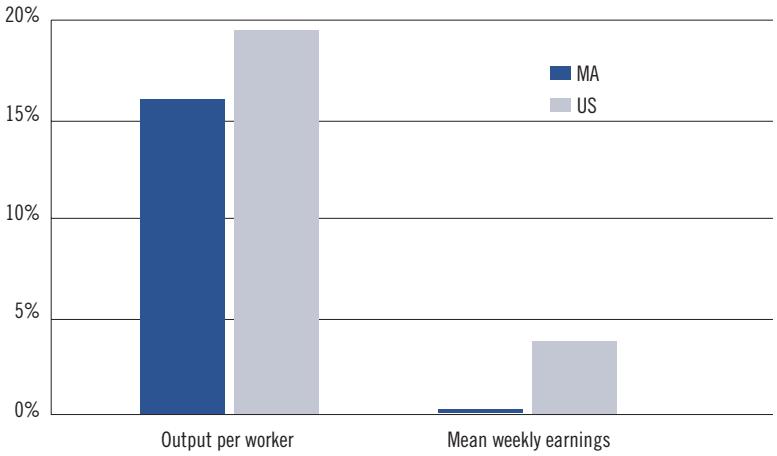
Among all of the economic data presented in this report, perhaps the most telling are those demonstrating the complete rupture of the link between productivity growth and wage growth during the Lost Decade.

Employed workers in Massachusetts produced more output per hour of work — labor productivity grew by more than 17 percent between 2000 and 2010; however, Massachusetts workers saw no discernable increase in pay — mean weekly wages grew by just 0.1 percent.

The productivity growth/wage growth link was severed in Massachusetts even more dra-

ES Chart 8:

Comparisons of Estimated Percent Changes in the Mean Weekly Earnings and Real Annual Output Per Worker in Massachusetts and the US, 2000-2010



matically than it was for the nation, where it simply fractured; US labor productivity increased 19.4 percent and mean wages rose 3.7 percent.

Few Massachusetts workers are aware of these data; however, our survey results make plain their visceral understanding that hard work is no longer fully compensated.

Satisfaction and Confidence in the Bay State Economy

While the economic data show modest declines in household and family income, MassINC's public opinion research shows that residents are extraordinarily sensitive to these changes. Half of those surveyed over the last year feel like it became more difficult to achieve their desired lifestyle in Massachusetts during the last decade; just 10 percent of respondents say it became "easier."

MassINC survey research also reflects declining confidence in the future of the Bay State economy. When asked recently how they thought the next generation of adults in Massachusetts would fare, 45 percent of respondents believed that the next generation would be "worse off" and only 19 percent felt that they would be "better off."

Consistent with the generational divides described earlier, MassINC survey research shows that younger residents are struggling to achieve the American Dream. Overall, just under half (49 percent) of Massachusetts residents feel that they had achieved the American Dream. Fewer than one-third of the youngest respondents (18 to 29) say they had achieved the Dream, versus 47 percent of those ages 30 to 44 and almost 60 percent of those 60 and older.

With slow and uneven rates of economic growth, economists have begun looking for alternative ways to measure well-being. Many believe that perhaps the most straightforward approach is simply to ask people if they are content. In 2010, slightly over 45 percent of Massachusetts residents reported in a national survey that they were "very satisfied" with life. This share was nearly 2 percentage points above that of the nation, but only 32nd highest on this measure among the 50 states.

While popular belief suggests those with the least often find the most joy, these survey data show that this is certainly not the case in Massachusetts. Only 22 percent of residents with the lowest incomes (under $20,000) claimed to be "very satisfied" with life, versus 35 percent of those with annual incomes between $35,000 and $50,000, and nearly 57 percent of those with incomes above $75,000.

The economic conditions altered by the last decade are in many ways related to the determinants of happiness. Massachusetts adults in higher income families who were employed, married, college educated, and in good to excellent health were the most likely to report being "very satisfied" with life.

MEETING THE CHALLENGE

The challenges left by the Lost Decade urgently require attention. If they are not addressed, they will only deepen. The longer workers are underutilized by the state's labor markets, the more difficult it will be for them to contribute at their full potential. By failing to provide unskilled workers with living wages, making it harder for men and women to form families, limiting the options of young workers, and geographically isolating residents from economic opportunity, the Big Divides by education, gender, and region and may sow additional inequality.

While some level of inequality may enhance growth by encouraging residents to work hard and take risks, it is likely that we are moving beyond that threshold. Additional inequality could place a tremendous drag on future economic growth by further undermining confidence in the political system, leading to the dysfunction and instability

increasingly on display in Washington.[6] Inequality may also increase the reliance of low-income residents on debt, making us more prone to financial crises, as the recent housing debacle exemplifies.[7] Inequality may even breed more inequality. For instance, there is some evidence that inequality reduces marriage rates by giving low-income residents the impression that they are not "marriage material."[8]

A recovery strategy to keep the Lost Decade's legacies from putting downward pressure on future growth will require additional public resources. This places leaders in a difficult position. As state revenues return, they will be needed to restore critical budget line items. In the absence of an unexpectedly strong near-term recovery in state housing markets, the Commonwealth's cities and towns will require significant state assistance to forestall additional layoffs of the teachers, police officers, and firefighters that we can ill afford to lose. At the same time, Massachusetts must also take fiscally prudent steps to build up its reserves to provide a buffer to fall back on during the next economic cycle.

With these competing demands, state leaders must deploy new revenues strategically. Responses aimed at addressing the Lost Decade's challenges should be narrowly tailored to efficiently address the most pressing labor market problems. What we lack in resources, we can make up for with brawn, experimenting with new approaches and reforming systems and institutions to most effectively create economic opportunity for residents our Commonwealth.

Efforts to bring the younger generation, and young men in particular, into the workforce should be high atop the list of priorities. Without action, the limited work experience of these youth will adversely affect their employability and lifetime earnings. Massachusetts has already developed strong models, such as the Connecting Activities program.[9]

Employment efforts should be matched with programs to support learning and break the Education/Economic Development Paradox. As the economy demands higher and higher cognitive skills, our current approach to the transition between high school and post-secondary training will need to adjust accordingly. Some students will require additional time to master basic skills, and this means flexibility. Innovations, such as the virtual learning academies advanced by the Pioneer Institute, provide new opportunities to marry employment programs like Connecting Activities with nontraditional educational support many students will need to further their careers.[10]

WHAT WE LACK IN DOLLARS, WE CAN MAKE UP FOR WITH BRAWN.

For those who have already left our high schools, it is imperative that the state develop a variety of approaches to integrate efforts between the adult basic education system, the community college system, and the state's workforce development system to allow adults to receive the needed combination of services and bolster their employability and earnings. With a recent report, The Boston Foundation infused energy and ideas into this perennial problem.[11] Their recommendations merit heightened focus today given the difficult challenges before us.

With the economy rapidly changing the needs of employers, Massachusetts needs post-secondary institutions that can keep pace. As MassINC and others have argued, they must also do more to help students make informed choices in an increasingly complex higher education marketplace.[12]

While the state's ability to address the problem of income inequality directly are rather limited, there are some strategies that should be considered. Tax code changes that give companies incentive to adopt compensation systems that connect employee earnings to firm performance

is one idea. Profit sharing is common for senior executives. Evidence suggests that companies that extend these same incentives to employees throughout their business are more successful.[13]

High-quality subsidized childcare is one logical way to aid families at the bottom of the income distribution without distorting the incentive to engage fully in the workforce. Childcare allows low-wage workers to hold jobs and/or continue their education and training. By supporting their children at a critical learning state, high-quality childcare helps the future generation excel, provides long-term returns to the public.[14]

In addition to these specific items, job creation must be strengthened more generally. The work of the current Massachusetts Jobs Commission will provide further policy guidance in this area, identifying priorities and providing tangible strategies to achieve them.

At the federal level, provisions of the proposed American Jobs Act of 2011 that independent economists generally see as efficient and appropriate should be enacted. These include targeted infrastructure spending, tax credits to support the hiring of teens, young adults, and the long-term unemployed, and the extension of payroll tax cuts for workers to boost their ability to consume additional goods and services and increase the demand for output.

With the economy seemingly rebounding, some will question the need for dramatic policy change. However, survey data continue to make plain the urgency the public feels for action and change. This report provides state leaders with a detailed look at the state's needs and a few suggestions for how they can be met. In the coming months, with additional research, analysis, and civic convening, MassINC will continue to support civic dialogue around these important challenges.

Endnotes

1 See Debbie Borie-Holtz, Carl Van Horn, and Cliff Zukin, "No End in Sight: The Agony of Prolonged Unemployment" (New Brunswick, NJ: John J. Heldrich Center for Workforce Development, 2010).

2 For example, see Kathryn Edin, "What Do Low-Income Single Mothers Say about Marriage?" Social Problems 47(1) (2000).

3 See Thomas Deleive and Leonard Lopoo, "Family Structure and the Economic Mobility of Children" (Washington, DC: Pew Charitable Trust, 2010).

4 Andrew Sum, "Getting to the Finish Line: College Enrollment and Graduation," (Boston, MA: Boston Private Industry Council, 2008).

5 See Andrew Berg, Jonathan Ostry, and Jeromin Zettelmeyer, "What Makes Growth Sustained?" forthcoming in Journal of Development Economics.

6 Tara Watson and Sara McLanahan, "Marriage Meets the Joneses: Relative Income, Identity, and Marital Status," Working Paper No. 14773 (Cambridge, MA: NBER, 2009).

5 See for example, Mark Muro and others, "Reconnecting Massachusetts Gateway Cities: Lessons Learned and an Agenda for Renewal" (Boston, MA: MassINC, 2007).

6 See Andrew Berg, Jonathan Ostry, and Jeromin Zettelmeyer, "What Makes Growth Sustained?" forthcoming in *Journal of Development Economics*.

7 Berg, Ostry, and Zettelmeyer (forthcoming).

8 Tara Watson and Sara McLanahan, "Marriage Meets the Joneses: Relative Income, Identity, and Marital Status," Working Paper No. 14773 (Cambridge, MA: NBER, 2009).

9 For more on Connecting Activates, see Keith Westrich and Jennifer Leonard, "Connecting Activities: Making the Workplace a Learning Place" (Boston, MA: MA Department of Elementary and Secondary Education, 2008).

10 For more on the potential of virtual schools and their status in Massachusetts, See William Donovan, "Virtual Schools, Actual Learning" (Boston, MA: Pioneer Institute, 2011).

11 Julian Alssid, Melissa Goldberg and John Schneider, "The Case for Community Colleges: Aligning Higher Education and Workforce Needs in Massachusetts" (Boston, MA: The Boston Foundation, 2011).

12 For example, see C. Anthony Broh and Dana Ansel, "Planning for College: A Consumer Approach to the Higher Education Marketplace," (Boston, MA: MassINC, 2010).

13 Frank Levy and Tom Kochan, "Addressing the Problem of Stagnant Wages" (Champaign, IL: Employment Policy Research Network, 2011).

14 For example, see Julia Isaacs, "Cost-Effective Investments in Children" (Washington, DC: Brookings Institution, 2007).

Key Findings

1. THE EDUCATION/ECONOMIC DEVELOPMENT PARADOX

Impressive Educational Attainment Gains

- Massachusetts has the most skilled workforce in the nation as measured by the share of employed residents with a bachelor's or higher degree. In 2000, nearly 37 percent of the state's resident workers held at least a bachelor's degree; 9 percentage points above the US and highest among the 50 states. Over the decade, the share of Massachusetts workers with a bachelor's or higher degree rose steadily, increasing to 46 percent in 2010, 13 percentage points above the US average and still first among the states. . . . . p. 85

- In absolute terms, the gains were equally impressive. Between 2000 and 2010, Massachusetts added nearly 200,000 residents with bachelor's degrees, a 20 percent increase. The growth in residents with graduate degrees was even more dramatic. The number of residents with a master's or higher degree increased by 266,000, 50 percent in a single decade. . . . . p. 85

Anemic Output and Productivity Growth

- Massachusetts increased its annual output (GSP) by just 11 percent during the last decade. This growth rate was quite weak compared with the two prior decades. The Massachusetts economy grew by 58 percent in the 1980s and 40 percent in the 1990s. The state's output growth was also slower than the nation's; US output (GDP) increased by 17.6 percent between 2000 and 2010. . . . . p. 40

- This relatively slow growth rate brought the per capita GDP performance of the Massachusetts economy down a notch. Ranked among the 50 states and the District of Columbia, Massachusetts's per capita output fell three places, from 4th highest in 2000 to 7th highest in 2010. . . . . p. 42

- Labor productivity grew by 17 percent in Massachusetts versus a growth rate of 19.4 percent for the US. Among states, the Commonwealth's labor productivity growth rate ranked 34th highest. . . . . p. 45

Poor Job Creation Performance

- Between 2000 and 2010, Massachusetts lost 143,000 payroll jobs — a 4.3 percent decline in payroll employment. . . . . p. 61

- Ranked by change in payroll employment over the last decade, Massachusetts finished 45th among the 50 states and the District of Columbia; only six states posted worse job generating performances. . . . . p. 62

- During the last decade, Massachusetts experienced no net growth in the number of employed residents. In fact, annual average employment fell by 38,000 workers (1.4 percent) between 2000 and 2010. The 2000s were the first decade in the past 70 years during which the state failed to increase the number of employed residents. p.74

- Massachusetts was not the only state to experience a disconnect between educational attainment and employment growth. The correlation between the share of employed workers with at least an associate's degree in 2000 and payroll job growth between 2000 and 2010

was slightly negative across the 50 states. A more highly educated workforce did not lead to above average job growth. . . . . p. 69

Falling Short of Our Potential

- The Massachusetts economy began the decade with a favorable industry composition that could have offset job losses associated with the decline in the US economy. If the state's mix of industries had added payroll employees at the same rates as they grew throughout the nation, Massachusetts would have added more than 75,000 jobs between 2000 and 2010. . p. 66

- Slower relative growth meant a number of key industries produced fewer jobs than expected and lost national market share. These included education (-23,200 jobs), health care (-20,500 jobs), management of companies (-20,300 jobs), finance and insurance (-16,400 jobs), and the professional, scientific, and technical sector (-15,400 jobs). . . . . p. 68

- In output terms, the state's mix of industries was neutral, which suggests, all else being equal, aggregate output should have increased at the same rate as national GDP. The Massachusetts economy's growth rate was about one-third lower than the nation's (11 percent vs. 17.7 percent) because key industries like construction, insurance and real estate, and computer systems design lost market share over the decade. . . . . p. 50

Wage and Income Stagnation

- Despite gain in labor productivity over the decade, the wages of Massachusetts workers failed to grow over the past decade. While workers nationally experienced a 4 percent increase in mean weekly wages between 2000 and 2010, the Commonwealth's workers saw their wages rise by just 0.1 percent.. . . . . p. 124

- Despite the remarkable educational upgrading of the state's workforce, Massachusetts, like the nation, couldn't stop the last decade from becoming the first since the Great Depression in which the median household experienced no income growth. Between 1999 and 2009, median household income in Massachusetts fell by 6.1 percent. Nationally, median household income fell by 9 percent. . . . . p. 142

- Demographic advantages (more educated, dual-earner families) helped keep family income growth in Massachusetts slightly ahead of the nation (between 1999 and 2009, median family income rose 0.2 percent in Massachusetts versus a 5.1 percent decline in the US). But again, the most remarkable contrast was the state's stagnant income growth during a decade in which Massachusetts increased the share of families headed by a member with a four-year degree by 7.5 percentage points (36.9 percent in 2000 to 43.3 in 2009). . . . p. 161

2. THE WORKFORCE CHALLENGE

A Surplus of Underutilized Labor

- In 2010, 1 in 4 Massachusetts workers (905,600) were either unemployed, underemployed, mal-employed, or in the labor force reserve (i.e., workers wanting a job, but not actively looking). p. 117

- Massachusetts had nearly 3.3 times as many unemployed residents during the average month in 2010 than in 2000. The number of underemployed workers in Massachusetts also tripled over the decade. In 2010, there were nearly 171,000 underemployed residents versus only 56,000 in 2000. The labor force reserve rose from 57,000 in 2000 to 87,000 in 2010, a 50 percent increase. . . . . p. 104

- In addition, about 34 percent of Massachusetts residents with associate's degrees (91,700), 28 percent of residents with bachelor's degrees (227,800), and 10 percent of residents with master's degrees (55,400) were mal-employed (i.e., working in jobs that do not typically require a college degree) in 2010. . . . . p. 117

- Among residents ages 20 to 64, just 50 percent of with an associate's degree and only 59 percent of those with a bachelor's degree were both employed and working in a college labor market job in 2010. This represents a fairly massive underutilization of the skills of the state's college-educated population. . . . p. 117

- A combination of declining labor force participation and rising unemployment pushed the state's employment-to-population (E/P) ratio down from 65.7 percent in 2000 to 60.7 percent in 2010, a substantial decline of 5 full percentage points. . . . . p. 75

Heavy Reliance on Older Workers

- Between 2000 and 2010, the number of employed residents under age 55 dropped by 12 percent (261,000). This loss was nearly offset by a dramatic 44 percent increase (223,000) in workers ages 55 and older. . . . . p. 83

- Relative to other states, the Massachusetts economy is now heavily dependent on older workers. Compared with other states, the Commonwealth falls in the middle of the distribution on the employment rates of workers under age 55, but the 68 percent E/P ratio for residents ages 55 to 64 ranks 9th highest among states. p. 83

The Long-Term Unemployed

- Mean durations of unemployment rose dramatically over the past decade. In 2000, the mean duration of unemployment in Massachusetts was only 11 weeks. In 2007, the mean duration had risen to 18 weeks and stayed there throughout 2008 as aggregate unemployment levels rose. The mean duration climbed to 33 weeks for the first five months of 2011, a new record high for the state. . . . . .p. 110

- In 2000, only 1 in 8 unemployed persons in Massachusetts was categorized as long-term unemployed (jobless for 27+ weeks). In 2010, the state's long-term unemployed workers made up 42 percent of the unemployed, a historical high.

- Between 2000 and 2010, the number of very long-term (jobless for 52+ weeks) unemployed residents rose exponentially, from 3,000 to 90,000. . . . . p. 111

3. THE BIG DIVIDES

By Income

- Income inequality continued its long upward march during the last decade, albeit at a slightly slower pace. The ratio between the income earned by families at the state's 99th percentile and families at the state's 10th percentile rose from 21.3 to 1 in 1999 to 23.7 to 1 in 2009 (in contrast, these ratios grew from 10.9 to 1 in 1979 to 15.8 to 1 in 1989). . . . . .p. 173

- Over the past 50 years, Massachusetts has moved from one of the most economically egalitarian states to one of the most unequal. On five relative measures of income inequality, among the 50 states, Massachusetts's rank fell between 3rd and 12th most equal in 1959; in 2010, Massachusetts ranked between 2nd and 5th most unequal on these measures. . p. 149

- The share of money income obtained by Massachusetts households in the bottom four quintiles of the distribution declined from 1959 to 2010, while the share obtained by households

in the top quintile increased. The bulk of the gain in income went to households in the top decile of the distribution.. . . . . p. 151

- Over the 1979-2009 period, a family at the 10th percentile obtained an income gain of only 6 percent; Massachusetts families at the 50th percentile saw their incomes rise by about 25 percent. In contrast, families at the 90th percentile enjoyed large gains of nearly 50 percent. A family at the very top of the distribution (99th percentile) obtained a 129 percent gain, more than 20 times as high as the income growth rate of families at the 10th percentile.. . . . . p. 172

- In 2009, the top 5 percent of families in Massachusetts (approximately 79,000 families) received a combined money income of nearly $33 billion, which was equal to about 20.5 percent of total family income in the state in 2009. To match this amount of income, we would have to add the annual money incomes of the bottom 763,300 families in the state. This represents nearly half (49 percent) of all families in the state in 2009. . . . . p. 174

- The joint influence of education and family type underlies to a considerable degree the high disparities in family incomes in Massachusetts. In 2009, the median incomes of families ranged from a low of $19,790 for female-headed families led by a householder without a high school diploma, to nearly $50,000 for male-headed families with a high school diploma, to highs of nearly $118,000 for married-couple families headed by a bachelor's degree holder and $140,000 for married-couple families with heads possessing a master's or higher degree. . . . . p. 168

- Family formation, and in turn inequality, has also been influenced by industrial change. Over the past decade, workers in different industries experienced divergent economic fates. In the lowest wage industries, workers typically fared worst, either obtaining no wage improvement or fairly substantive 9 to 19 percent declines (retail trade, other services, and accommodation and food services). Workers in higher wage industries (real estate, educational and health services, and management of companies) experienced double-digit weekly earnings increases ranging from 12 to 17 percent.. . . . . p. 126

- In 2010, the mean weekly earnings of wage and salary workers across the state's industries varied to an amazingly wide degree. At the bottom of the distribution were workers in the accommodation and food services industries, with an average weekly wage of only $372 and those in other services (repair, personal care) and retail trade, with wages in the $530 range. At the top of the distribution, workers involved in the management of companies earned an average of $2,000 weekly, security brokers earned an average of $3,860 weekly, and investment bankers earned an average of $5,020 weekly. . . . . p. 126

By Educational Attainment

- These occupational wage gaps translate into lower wages for workers who lack the education and skills to compete for positions in high-wage occupations. Over the last two decades, high school dropouts have experienced a 17 percent decline in median weekly earnings. Weekly pay has fallen by 11 percent for those with just a high school degree or GED. Only those workers with a bachelor's or higher degree improved their median weekly earnings between 1989 and 2010. These gains were 11 percent for bachelor's degree holders and 6 percent for those with a master's or higher degree.. . . . . p. 129

- Massachusetts workers with limited education face exceptionally high unemployment rates. Nearly 20 percent of those lacking a high school diploma or GED and 12 percent of residents with just a high school degree were unemployed in 2010. In contrast, unemployment was just 5.5 percent for bachelor's degree holders and 3 percent for those with a master's or higher degree. . . . . p. 106

- Labor underutilization rates of Massachusetts workers in 2010 varied considerably across educational attainment groups. The incidence of labor underutilization problems was 32 percent among high school dropouts, 22 percent for high school graduates, and 17 percent for those with 1 to 3 years of post-secondary schooling, including associate's degree holders. In 2010, the labor underutilization rate was slightly below 10 percent for bachelor's degree holders and just 5.6 percent for those workers holding a master's or higher degree. . . . . p. 115

- Lower wages and rising employment challenges brought income down sharply among households with limited educational attainment. Households headed by high school dropouts lost nearly 30 percent of their median income between 1999 and 2010; income fell by 16 percent for households with a head holding only a high school degree or GED. In contrast, income declines over the decade were far less substantial for those with bachelor's degrees (-4 percent) and master's or higher degrees (-2 percent). . . . . p. 146

By Generation

- Over one-third of the state's teens (ages 16 to 19) and more than one-quarter of young adults (ages 20 to 24) were un- or underemployed in 2010. In contrast, underutilization rates were below 15 percent in 2010 among the state's older age groups. . . . . .p. 114

- Younger workers fortunate enough to find jobs are taking home significantly less pay than their peers in previous generations. Between 1989 and 2010, the state's youngest workers (those under 25 years old) saw their median weekly earnings fall by 8 percent; 25-34-year-old workers lost 2 percent of their weekly earnings. During this period, older age groups obtained substantial wage increases, ranging from 20 percent for those ages 45 to 54 to 52 percent for those 65 and older. . . . . p. 128

- Households headed by younger adults (under age 30) experienced the sharpest decline (-7 percent) in median real household income between 1999 and 2010. . . . . .p. 145

- Families headed by young adults also saw the steepest decline in median real family income (-12 percent) over the last decade. Whereas young families earned nearly 90 percent of the state median family income in 1979, by 2009, young families were taking home just 58 percent of the state median. . . . . p. 164

- With young Bay Staters racking up student loan debt, it has become imperative that they find college labor market jobs. Graduates must utilize their skills to reap real returns on their investment. In 2010, employed bachelor's degree holders in college labor market jobs obtained mean weekly earnings of $1,311, versus just $841 for the mal-employed – a 56 percent wage advantage for those with college labor market jobs. Employed bachelor's degree holders working in a college labor market job get mean weekly earnings nearly $600 per week higher than the mean weekly earnings of high school graduates. When they are mal-employed, the gap is just $110 per week. p. 118

By Gender

- Over the past decade, Massachusetts males fared far more poorly in the labor market than women. Between 2000 and 2010, male employment declined by 81,000 while female employment increased by 43,000. Massachusetts's 4.8 percent decline in male employment over the past decade ranked 44th lowest among the 50 states. . . . . p. 77

- The challenges men have faced in the state's economy stretch back several decades. Between 1988 and 2010, total civilian employment in Massachusetts rose by only 159,000. Women were responsible for the overwhelming share of this employment gain. The state added 148,000 female workers between 1988 and 2010, while male employment increased by only 11,000 over this 22-year period. Only 7 out of every 100 new jobs among residents were obtained by men between 1988 and 2010. . . . . p. 79

- While the recovery has led to some growth in occupations predominately held by men, male unemployment continues to outpace female unemployment in Massachusetts substantially. During the first five months of 2011, unemployment stood at 9.2 percent for men versus 5.9 percent for women. . . . . .p. 105

- During the past decade, the state's overall civilian labor force participation rate declined from 67.6 percent to 66.1 percent, a drop of 1.5 percentage points. This decline is fully accounted for by lower labor force participation among men. . . . . p. 75

- If men had been able to maintain their full-time E/P ratios from 2000, in 2010, the state would have had 215,000 more full-time employed males in the workforce. . . . . p. 97

By Region

- Disparities in household income growth were particularly stark across the state's counties. Between 1999 and 2009, real median household income fell by nearly 20 percent in Berkshire County, more than 11 percent in Hampden County, and almost 10 percent in Franklin County. In contrast, household income grew by 5 percent in Suffolk County. Other Greater Boston counties experienced only slight declines. . . . . p. 147

- Between 2000 and 2010, the percent change in mean weekly earnings ranged from -4 percent in Berkshire County to +4 percent in Suffolk County. In 2010, weekly earnings ranged from a low of $684 in Franklin County to a high of $1,471 in Suffolk County. The ratio between earnings in the state's lowest and highest wage counties grew from 2.06 in 2000 to 2.15 in 2010. . . . . p. 127

4. RESTORING CONFIDENCE IN THE AMERICAN DREAM

The Broken Link

- Employed workers in Massachusetts produced more output per hour of work in the past decade. Between 2000 and 2010, labor productivity grew by 17.7 percent. . . . . .p. 45

- However, Massachusetts workers experienced just 0.1 percent growth in mean weekly wages. Even more so than for the nation, where labor productivity increased 19.4 percent and mean wages rose 3.7 percent, the link between productivity and wage growth was severed in Massachusetts. . . . . p. 124

Satisfaction and Confidence in the Bay State Economy

- Findings from MassINC public opinion surveys reveal a substantial share of residents feel like it has become more difficult to achieve their desired lifestyle in Massachusetts over the last decade; 51 percent of respondents say that it has become "more difficult" to achieve their goals versus only 10 percent who say it has become "easier." . . . . . p. 184

- MassINC survey research also reflects declining confidence in the economy over the long term. When asked how they thought the next generation of adults in Massachusetts would fare, 45 percent of respondents believed that the next generation would be "worse off" and only 19 percent felt that they would be "better off." . . . . . p. 185

- MassINC survey research shows that younger and lower-income residents are struggling to achieve the American Dream. Overall, just under half (49 percent) of Massachusetts residents feel that they had achieved the American Dream. The share believing that they had secured the American Dream varied widely across household income groups, ranging from a low of 19 percent for those with incomes under $25,000, to 44 percent for those with incomes between $25,000 and $75,000, to a high of 82 percent for those with incomes above $150,000. . . . . p. 186

- The fraction of state residents believing that they had achieved the American Dream varied considerably across age groups, rising steadily with age. Fewer than one-third of the youngest respondents (18 to 29) felt that they had achieved the Dream, versus 47 percent of those 30 to 44 years old and just under 60 percent of those 60 and older. . . . . p. 186

- In 2010, slightly over 45 percent of Massachusetts residents reported in a national survey that they were "very satisfied" with life. This share was nearly 2 percentage points above that of the nation, but the state ranked only 32nd highest on this measure among the 50 states. In Massachusetts, only 22 percent of those with the lowest incomes (under $20,000) claimed to be "very satisfied" with life, versus 35 percent of those with annual incomes between $35,000 and $50,000, and nearly 57 percent of those with incomes above $75,000. . . . . p. 187

Important note about comparing incomes and earnings over time: In order to adjust for the effects of inflation, we have converted output, wages, income, and earnings into real terms using the Consumer Price Index (CPI). Unless otherwise specified, all of our comparisons are in constant dollars (CPI-U for the US and Boston CPI-U for Massachusetts).

Chapter One

The State of the American Dream in Massachusetts

"Increasingly, middle class America feels that the American Dream of opportunity and increasing prosperity is out of reach. The opportunity to move up the American ladder is a central component of the American social contract. Americans' discontent reflects a view that our social contract is failing them."

LAUREN DAMME
Losing Middle America: Understanding Job Polarization and Wage Inequality (2011)

"The decline of the American middle class is a national crisis, and it should be treated as such. There can be no economic recovery and no return to fiscal balance without the recovery of the middle class."

US SENATE HELP COMMITTEE
Saving the American Dream: The Past, Present, and Uncertain Future of America's Middle Class (2011)

Prepared by:
Andrew Sum

Introduction

The above quotations from two recent reports by a social science researcher for the New America Foundation and the US Senate's Health, Education, Labor and Pensions Committee sum up fairly well both objective findings on recent trends in the earnings and incomes of middle-class Americans and their concerns about their own economic well-being and that of their children and the coming generation of adults.[1] The past decade in the United States (2000-2010) has been referred to by a number of economists and other social scientists as the Lost Decade.[2] The weak output performance of the US economy combined with a decline in the number of payroll jobs and rising un- and underemployment problems reduced the real annual incomes of the average household and family in the nation and increased both income inadequacy problems and the degree of inequality in the family income distribution.[3] Similar developments took place here in Massachusetts.

Concerns with the social and economic fate of the middle class have been a hallmark of the Massachusetts Institute for a New Commonwealth (MassINC) since the organization's founding in the mid-1990s. In its first major publication, *The State of the American Dream in New England* in January 1996, MassINC identified a series of public policy concerns with the employment, earnings, and family income impacts of the changing regional and state economy.[4] The report highlighted the strong economic performance of the New England economy during the 1980s and its role in sharply improving employment opportunities, the real weekly and annual

earnings of the region's workers, and the real annual incomes of many families across the region. Aggregate payroll employment growth in New England in the 1980s (1979-89) outpaced that of the nation for the first time since the payroll employment data series started in the late-1930s. Over the five-year period, 1983-88, the New England economy generated nearly 1 million net new payroll jobs, a growth rate of 18 percent over 5 years, far exceeding that of the nation. In 1984 alone, Massachusetts produced more than twice as many new payroll jobs (159,000) than it has created over the entire 1989-2010 time period (68,000).

Unemployment fell sharply in the region during the jobs boom from 1983 to 1988. The region's unemployment rate was below 4 percent for each year from 1986 to 1989 and fell to a low of 3.1 percent in 1988. From 1983 to 1989, the annual average unemployment rate of New England was the lowest among the Census Bureau's nine geographic divisions.

Family income growth was also quite strong in the region during the 1980s. Between 1979 and 1989, median real family income in the region grew by 25 percent versus a growth rate of only 4 percent for the US. New England was a national leader in this area, and Massachusetts's families also fared quite well with a growth rate of 20 percent. Gains in median real incomes were quite strong for families with and without children, and families with householders in each major educational attainment category from high school dropouts to bachelor's degree holders improved their median incomes over the decade. However, the relative size of these annual income gains varied widely across educational attainment groups, ranging from lows of 6 percent for families headed by a person with no regular high school diploma/GED to a high of 38 percent for those headed by an individual with a master's or higher degree. Family income gaps by educational attainment were widening during the Miracle Decade of the 1980s.

Unfortunately, the economic boom of the 1980s came to a crashing halt in early 1989 in New England well before the 1990-1991 national recession took hold. The severe economic downturn of 1989-1991 took a serious toll on the region's workers and many of its families. The number of wage and salary jobs declined by nearly 10 percent between early 1989 and the end of 1991, with double-digit declines in manufacturing, retail trade, and especially construction, where payroll employment fell by nearly 30 percent. While job growth picked up from the end of 1992 to mid-decade (1995), median real family income in the region fell by 6 percent between 1989 and 1994, and both families with less-educated family heads and single-parent families saw above-average relative losses in their incomes.

Family income inequality continued to rise in both the region and the state through the first half of the 1990s. The broadly defined middle class (those occupying the 20th to 80th percentiles of the family income distribution) were losing ground over this period, and many were experiencing downward absolute mobility with some being pushed out of the middle class. Concerns were expressed about the ability of families in the bottom quintile of the distribution to make it into the middle class in the future. A growing fraction of these families had only one parent present in the home and many had no formal education beyond high school. A report published by MassINC in 1997, laid out strategies to improve the education and training of these low-income adults and enable them to raise their earnings potential.[5] These concerns with barriers to mobility by low-income adults proved to be highly prescient. In the past few years, a series of national studies have highlighted the declining economic mobility of US adults and the role of the parents' education, income, and marital status in influencing the income mobility of their children.[6]

One year later, MassINC published an update of the income and labor market situation in Massachusetts titled *The Road Ahead: Emerging Threats to Workers, Families, and the Massachusetts Economy*.[7] The report tracked changes from the late-1970s through the mid-1990s in the economic well-being of workers and families in the Boston metropolitan area, the state as a whole, as well as those residing in major geographic regions and counties across the state. The real per capita incomes of Massachusetts's residents and the median incomes of its families had improved sharply relative to the nation and most other states in the 1980s Miracle Decade. Massachusetts moved to 4th highest among the 50 states in its per capita income by 1988 and remained there until the mid-1990s. While residents and families in Massachusetts had clearly gained ground relative to their national counterparts over the 1980s, the relative size of these advantages narrowed in the first half of the 1990s and a major portion of those nominal income differences were being offset by a high and rising cost of living and above-average per capita tax burdens, both federal and state. High housing costs, in particular, were raising the cost of living, discouraging homeownership, and encouraging out-migration from the state.[8]

Disparities in both per capita incomes and annual earnings also were rising across geographic regions and counties of the state. The income gaps between residents in major parts of the Greater Boston region and the Central and Western regions of the state were increasing to a substantive degree. These findings created a clear need for regional economic development strategies to boost employment and earnings of workers in the Central, Southeast, and West regions of the state.

Following the close of the 1990s decade and the end of the state's economic and labor market boom in early 2001, the Center for Labor Market Studies embarked on a joint initiative with MassINC to update our 1996 report. Our next study focused on Massachusetts rather than the entire New England region and analyzed the degree of progress that had been achieved in improving employment, wages, and annual earnings of Massachusetts workers and the real incomes of our state's households and families, especially middle-class families. The title of this new report was *The State of the American Dream in Massachusetts: 2002*.[9]

After losing 10 percent of our payroll jobs in the 1989-1992 regional recession, job creation picked up steam from 1992 to 2000. Aggregate payroll employment rose by 531,000 or 19 percent over this eight year period. While most industries expanded their employment rolls, that was not true of the state's manufacturing industries, which lost another 28,500 jobs or 6 percent with jobs in computer manufacturing declining by nearly two-thirds. From the early to mid 1980s to 1999-2000, the state experienced very strong growth in the number of professional (41 percent) and management-related workers (60 percent), fueling the demand for college-educated workers. At the same time, however, the number of blue-collar production workers declined by 40 percent and office support workers by close to 10 percent, shutting off important entryways into the middle class for residents without any type of college degree.[10]

THE MIDDLE CLASS HAVE FAILED TO EXPERIENCE ANY GAIN IN THEIR REAL ANNUAL INCOMES OVER THE PAST DECADE.

The strong growth in employment after 1992 combined with very limited labor force growth over the decade helped push down the unemployment rate, from a high of 9.1 percent in 1991 to a low of 2.6 percent by 2000. This 2.6 percent unemployment rate was the fourth lowest in the nation during that year and the lowest

ever recorded for the state since the late-1960s when the new CPS-based data series began. The numbers of unemployed who were long-term unemployed (27 or more weeks) fell to a low of 8 percent, and there was a massive 80 percent drop in the number of unemployed dislocated workers, from 135,000 in 1991 to only 27,000 in 2000.

Despite the substantial improvement in labor market conditions from mid-decade on through 2000, median real annual earnings of the state's year-round, full-time workers failed to grow over the decade. The annual earnings of those at the lower end of the distribution (10th and 20th percentiles fell by about 11 percent). Annual earnings inequality continued to widen over the decade.

Median real household income in Massachusetts rose by only 1.4 percent between 1989 and 1999. Median real incomes of the state's families improved by only 3 percent over this period, with actual declines in median real incomes among young families (head under 30) and those families headed by individuals with no formal schooling beyond high school. Both household and family income inequality widened across the state. The ratios of household incomes at the 90th percentile to those at the bottom 20th and 10th percentiles grew, moving Massachusetts to the 10th most unequal states in the country. Similar developments took place in the family income distribution, with big increases in the relative income gaps between the top and bottom of the distribution. The top income quintile of families increased their share of total family income to 47 percent by 1999, 11 times as high as the 4.3 percent share garnered by state families in the bottom quintile. These represented historical highs for the state since the end of World War II.[11] The poverty rates of residents held fairly steady after 1992 despite strong employment growth.

The state continued to be characterized by widening disparities in job creation rates and in average annual wages for private sector job across regions during the 1990s. While each of the four regions gained private sector jobs between 1991 and 2000, the Western region (Berkshire, Franklin, Hampden, and Hampshire Counties) badly lagged behind the growth rates of the other three regions and by 2000 had not yet recaptured its 1989 private sector employment level. Growth rates in annual average wages of private sector workers also varied markedly over the decade with workers in the Southeast and Western regions substantially trailing the annual earnings gains of workers in the Greater Boston and Central regions. In 2000, the annual average wages of private sector wage and salary workers in the Southeast and Western regions of the state were only equal to 62 to 64 percent of those in Greater Boston.[11]

In the final remarks in the Executive Summary to this report, the authors noted that "Middle class families are at a crossroads. The time is ripe to engage in a thoughtful discussion of these issues for the sake of the health and well-being of our families and our Commonwealth."[12]

Unfortunately, most of these issues never made it into the political debates in our state, and both the middle class and many of those in the lower segment of the income distribution have suffered as a consequence. As is well-documented in this report, the bulk of the middle class in both our state and the nation have failed to experience any gains in their real annual incomes and living standards over the past decade, and the gaps in incomes between the top and the middle and bottom of the income distribution have continued to widen.

The Massachusetts Economy

Since the release of the 2002 report there has been no comprehensive update of many of the key findings until now.[13] Over the first half of the past decade (2000-2005), the Massachusetts

resident labor force experienced no net growth whatsoever.[14] Its civilian labor force growth rate was the third lowest in the entire country.

The absence of labor force growth was attributable to a very limited increase in the working-age population (16 and older) being offset by a small decline in the labor force participation rate. The low rate of growth in the working-age population was heavily influenced by substantial net domestic out-migration from the state. Between 2000 and 2005, Massachusetts lost a net of 233,000 residents to other states across the nation. All of the decline in the state labor force participation rate was attributable to men. Since the late 1980s, the degree of men's attachment to the labor force had been declining with the most severe reductions taking place among males with no post-secondary schooling, especially high school dropouts. These declining participation rates combined with rising un- and underemployment later in the decade sharply reduced year-round, full-time employment opportunities for males in the closing years of the decade. Reduced numbers of year-round jobs have had an adverse effect upon family annual earnings and incomes.

The state's strong payroll job growth from 1992 to 2000 came to an abrupt halt in early 2001 as the national recession took hold. The number of payroll jobs in Massachusetts would continue to decline through early 2004, when the payroll employment count fell to 3.184 million or close to 200,000 below its peak level in the first quarter of 2001.[15] The state absorbed severe job losses in its manufacturing, professional and technical services, information services, and major segments of its finance and insurance industries. Technology industries (both goods and service industries) that performed very strongly in the 1990s lost nearly a quarter of their jobs between 2000 and 2005. Many of these industries were key elements of the state's export base, producing goods and services for sale outside of the state and the nation. During the prosperity of the mid to late 1990s, they had generated favorable multiplier effects on other industries of the state. During the first half of the decade, many of the states largest cities absorbed above-average job losses, creating earnings and income problems for their residents and jeopardizing their ability to provide a ladder to the middle class.

Two other findings from this last report were important for the state's future well-being. First, a model of domestic in- and out-migration revealed that the net level of domestic migration among states was strongly linked to payroll job creation and the relative affordability of housing. The loss of wage and salary jobs leads to higher levels of domestic out-migration as do high relative costs of home ownership.[16] Second, national and state models of changes in the real weekly earning of workers across industries over the 2001-2005 period showed that wage growth was becoming delinked from the productivity performance. For the nation, the delinking was complete. Labor productivity growth had no significant impact on real wage growth for US workers. In Massachusetts, a modest, positive relationship between labor productivity and real weekly wage growth remained, but the strength of the link had become considerably weaker.[17] Future growth in the real wages and earnings of Massachusetts workers will be dependent on restoring stronger links between these variables.

Measuring the Performance of National/State Economies and Their Impacts on Workers, Families, and the Overall Economic, Social, and Psychological Well-Being of Adults

Many studies of the macroeconomic performance of national and state economies rely on measures of aggregate output, employment, and income. Concerns with the adequacy and reliability of these aggregate measures and averages in depicting changes in the economic and social well-being

of most members of society have risen over the past decade.

In the last few years, there have been a series of efforts in both the US and many other countries around the world to broaden the array of measures used to represent the general economic and social well-being of the population.[18] In their recent book *Mismeasuring Our Lives* (based on their report on measuring economic and social well-being for the Sarkozy Commission), Amartya Sen, Joseph Stiglitz, and Jean-Paul Fitoussi argued that countries need to go well beyond aggregate and average measures of output, such as Gross Domestic Product and aggregate incomes, to capture well-being in many other domains of life, including consumption, household income, employment, and the distribution of those incomes, jobs, and consumption opportunities.[19] They also argued that we need to include a wide array of non-market outcomes in our measurement system, including general health, satisfaction with life, active political participation, and other forms of community engagement.

A second set of studies have emphasized the importance of developing the capabilities of the population in a number of different economic and social domains. In her recent book *Creating Capabilities*, Martha Nussbaum has argued for a set of human development capability measures that would include the right to acquire a solid education and core literacy/math skills and to be able to utilize these skills in earning a decent living, to actively participate in the political process and to work with and on behalf of others.[20]

THE PAST DECADE HAS BEEN VIEWED BY SOME ECONOMISTS AND SOCIAL SCIENTISTS AS A LOST DECADE.

A third set of studies in both the US and across the world have focused on measuring the happiness and overall life satisfactions of a nation's adults.[21] Among the objectives of these studies is to measure happiness at a point in time and changes in happiness over time, variations in happiness across demographic and socioeconomic subgroups of the population, the determinants of an individual's happiness level (including their employment status, job satisfaction, income levels, marital status, physical and mental well-being, civic volunteering, and donating behavior), and the role of the government in promoting the happiness and overall perceived well-being of society. In the past few years, a number of national surveys in the US have provided large samples of observations for states that allow us to reliably estimate general life satisfaction and other forms of satisfaction (work, health, access to basic services) at the state level.[22]

The Lost Decade of 2000-2010

One of the primary objectives of this report is to describe and critically assess how Massachusetts workers and their families, especially middle-class families, fared over the past decade, 2000-2010. The overall macroeconomic performance of a state or national economy has an important influence on many of these labor market and income outcomes; however, the links are far from perfect since growth in real output may not be widely distributed across all groups of workers and families.

The past decade in the United States has been viewed by some economists and other social scientists as a Lost Decade similar to the so-called Lost Decade of Japan in the 1990s and in more recent years.[23] While the aggregate level of real output as measured by the nation's Gross Domestic Product did increase, per capita GDP only rose by 7 percent from 2000-2010, the only decade of single-digit growth in per capita GDP in the past 80 years, including the Great Depression decade of the 1930s.[24] Aggregate payroll

employment in private sector firms and government agencies combined was 2 million lower in 2010 than it was in 2000 at the peak of the 1990s labor market boom. This marked the first time in the past 70 years that the US economy failed to generate any net new payroll jobs over an entire decade. As a consequence of this job creation failure, unemployment, underemployment, and many other labor underutilization problems were considerably higher in 2010 than they were at the end of the previous decade.[25] The overall unemployment rate was between 9 and 10 percent in 2010, 2.4 times as high as it was in 2000, when American labor markets were operating at full employment.

The Great Dislocation of 2007-09 and the so-called Great Recession of 2007-2009 took a serious toll on US workers, especially males, workers in the nation's goods producing industries (construction/manufacturing), blue-collar workers, office support workers, and those employees without any post-secondary degrees.[26] Over the January 2007 to December 2009 time period, 15.4 million wage and salary workers permanently lost their jobs (i.e., they became dislocated workers). They represented nearly 11 percent of the average number of wage and salary workers in the nation over that time period. Many of these dislocated workers experienced severe difficulties in regaining any type of new employment. In January 2010, only 48 percent of them had become re-employed, the lowest ever re-employment rate of dislocated workers in the near 30 years of data collected by the Bureau of Labor Statistics as part of the national dislocated worker surveys dating back to the early 1980s.[27] The steep losses in payroll employment over the course of the Great Recession and its early aftermath helped increase the mean duration of unemployment and the number of long-term unemployed (six months or longer of continuous unemployment) to historically high levels and proportions.

The Great Dislocation of 2007-09 also took a serious toll on Massachusetts workers, with record numbers of permanent job displacements and historically high mean durations of unemployment in our state.[28] Re-employment difficulties of these dislocated workers remained quite severe and reduced the annual earnings of the workers themselves as well as the incomes of their families.

Average real weekly earnings of US workers were only modestly higher (2 to 3 percent) in 2010 than they were a decade earlier.[29] Median real household income in 2010 was more than 6 percentage points below its level in 2000, and median family income also declined over the decade. The average middle class family in America was treading water, and a high fraction (82 percent) of the public reported that they were struggling either a little or a lot to meet their economic needs in the fall of 2010.[30] For the very first time in the 28-year history of polling on this question, a majority (55 percent) of the American public reported in April 2011 that it was unlikely that "today's youth will have a better life than their parents."[31]

Overview of the Report

The pages that follow provide a detailed examination of the Massachusetts economy, its labor markets, and the economic well-being of workers, households, and families over the past decade.

Chapter Two focuses on the aggregate output performance of the Massachusetts economy during the past decade, including measures of growth in both total Gross State Product (GSP) and GSP per capita. The output generating performance of the Massachusetts economy is compared to that of the US economy during the Lost Decade of 2000-2010 and to the state's own much stronger output growth in the decades of the 1980s and the 1990s. The supply side GDP model is used to identify the sources of the

growth in real output of the state's economy during the past decade, including the contributions of changes in the labor force participation behavior of the state's working age population (16 and older), the employment rates of these active labor force participants, their annual hours of paid employment, and their labor productivity (real output per hour of paid employment). The real output growth performance of key industrial sectors of the state's economy is also examined, and the findings of a shift/share analysis of state output growth over the past decade is presented to identify changes in the competitive advantage of the state in producing output in key individual industries.[32]

THE AVERAGE MIDDLE CLASS FAMILY WAS TREADING WATER AND A HIGH FRACTION OF THE PUBLIC REPORTED THAT THEY WERE STRUGGLING EITHER A LITTLE OR A LOT TO MEET THEIR ECONOMIC NEEDS IN THE FALL OF 2010.

The third chapter is devoted to an analysis of payroll job growth and decline in the state over the past decade. Findings are compared to those of the nation and other states over the same time period, and to the growth of payroll jobs in Massachusetts over the prior two decades. The impact of the state's very weak job creation performance on the labor market fortunes of workers and the domestic migration behavior of the working-age population is examined.[33] Findings of a shift-share analysis of payroll job growth and decline in the state are discussed, along with changes in payroll job growth/decline across major industries of the state and counties across the state.[34]

The fourth chapter examines employment developments in Massachusetts over the past decade, including the self-employed, independent contractors, and wage and salary workers. The analysis explores changes in the total number of employed residents over the past decade and reviews changes in the number of employed residents across gender, age, educational attainment, and occupational groups.[35] Several scenarios of the impacts on state employment if the E/P ratios and full-time E/P ratios of 2000 had been maintained in 2010 are presented and analyzed. The state of Massachusetts would have been a much different state both economically and socially in 2010 if these earlier year 2000 employment/population ratios had been maintained in 2010.

The fifth chapter is devoted to an examination and analysis of labor market problems in Massachusetts over the past decade. In 2000, the state's annual average unemployment rate of 2.7 percent was among the lowest in the nation and was the lowest ever recorded for Massachusetts over the past 40 years for which comparable state unemployment data exist.[36] Trends in a wide array of labor market problems, including underemployment, hidden unemployment, and mal-employment are presented, together with changes in overall labor underutilization rates based on these more comprehensive data on labor market problems. The changing nature of unemployment problems, especially permanent worker dislocation problems and the average durations of unemployment spells, are also reviewed and assessed.

The sixth chapter is devoted to the changing real weekly earnings of Massachusetts workers over the past decade. Two different databases (the Quarterly Census of Employment and Wages, based on employer provided data, and the Current Population Survey, based on the monthly household survey of the US Census Bureau) were used to conduct this analysis. Weekly wage changes for Massachusetts workers are compared to those for the US and other states, and findings for Massachusetts are displayed for industry groups and counties as well as age, gender, and educational attainment groups.[37]

The seventh chapter focuses on the real annual incomes of Massachusetts households both over the past decade, and over the last 50 years. Again, the findings on changes in these real annual household incomes for the state are compared to those for both the nation and all other 49 states in recent decades. Estimates of median household income growth and decline are provided for demographic and geographic subgroups of households to account for changing social and spatial patterns.[38] Changes in the distribution of these annual household incomes over time and the shares of household income obtained by Massachusetts households in selected quintiles (fifths) and deciles of the income distribution over time are also examined.

Chapter Eight examines similar topics with a focus on families rather than households. Changes in real median family incomes over the past decade and previous decades are presented, alongside comparisons of family income growth in the nation over the same time period. The growth in the median real incomes of Massachusetts families in an array of age, educational attainment, family type, and race/ethnic groups are tracked over the past few decades.[39] The changing distribution of family incomes and the changing shares of income captured by families at the upper and lower ends of the distribution are also analyzed. Comparisons of the degree of family income inequality in Massachusetts with that for the US and other states across the nation are also presented.

The ninth chapter supplements the objective findings on changes in employment, real wages, household incomes, and family incomes. Findings from a number of public opinion polls and household surveys on the subjective views of Massachusetts and US residents with respect to their current economic well-being, their economic standard of living relative to that of their parents, their ability to achieve the American Dream, and their general life satisfaction are reviewed and assessed. Results from public opinion polls by MassINC and others allow us to identify whether Massachusetts residents are "Making it in Massachusetts." Who is and who is not? Data from these public opinion polls are accompanied by a detailed analysis of the assessments of Massachusetts adults of their overall life satisfaction in recent years (2009-2010). Findings of the Behavioral Risk Factor Surveillance System are used to conduct this latter analysis, including the demographic, labor market, and household income factors influencing the general life satisfaction of respondents.[40]

The final chapter presents a brief summary of the main findings of the study, describes key inter-relationships among these findings, and discusses their implications for future public policymaking at the national, state, and local level. What policies can public officials pursue to help strengthen the employment situation and the economic and social well-being of the middle class in our state and facilitate future entry into its ranks? The absence of any sustained progress in achieving either of these goals over the past decade both here in Massachusetts and across the nation makes a search for answers to the above question more important than ever before.

Endnotes

1 For a recent critical review of the fate of the American middle class, see Don Peck, "Can the Middle Class Be Saved?" *Atlantic*, September 2011, pp. 60-79.

2 See Jeffrey Frieden and Menzie Chinn, *Lost Decades: The Making of America's Debt Crisis and the Long Recovery,* W.W. Norton and Company, New York, 2011.

3 These income inadequacy problems included poverty, poverty/near poverty, and low income problems. For a recent review of trends in each of these areas over the past decade, especially for the nation's young families, see Andrew Sum and Ishwar Khatiwada, "The Poverty/Near Poverty and Other Income Inadequacy Problems of the Nation's Young Families," *Policy Research Brief Number 4* (Washington, DC: Children's Defense Fund, 2011).

4 See Andrew Sum and others, *The State of the American Dream in New England* (Boston, MA: MassINC, 1996).

5 See Edward Moscovitch, "Closing the Gap: Raising Skills to Raise Wages" (Boston, MA: MassINC, 1997).

6 See Isabel Sawhill and John Morton, *Economic Mobility: Is the American Dream Alive and Well?* (Washington, DC: Pew Charitable Trusts, 2009); Thomas DeLeire and Leonard Lopoo, *Family Structure and the Economic Mobility of Children* (Washington, DC: Pew Charitable Trusts, 2010); Gregory Acs, *Downward Mobility from the Middle Class: Waking Up from the American Dream* (Washington, DC: Pew Charitable Trusts, 2010); Austin Nichols and Melissa Faureault, "A Detailed Picture of the Intergenerational Transmission of Human Capital," (Washington, DC: Urban Institute, 2009).

7 Andrew Sum and others, *The Road Ahead: Emerging Threats to Workers, Families, and the Massachusetts Economy*, (Boston, MA: MassINC, 1998).

8 Andrew Sum and others, *Mass Jobs: Meeting the Challenges of a Shifting Economy* (Boston, MA: MassINC, 2007).

9 Sum and others (2002).

10 See Sum and others (2002). "Table 3-6," p.72.

11 For examples of such studies on middle class labor market and income problems in other states, see "The State of Minnesota's Middle Class" (New York, NY: DEMOS, 2011); "Under Attack: Wisconsin's Middle Class and the Jobs Crisis" (New York, NY: DEMOS, 2011).

12 See "Under Attack: Wisconsin's Middle Class and the Jobs Crisis" (New York, NY: DEMOS, 2011).

13 However there have been several policy papers on the Massachusetts labor force and its changing jobs picture produced by MassINC and the Center for Labor Market Studies. See Sum and others (2006); Sum and others (2007).

14 Sum and others (2006).

15 Sum and others (2007).

16 The housing affordability measure is based on the ratio of the median value of a house to the median value of household income.

17 A 10 percent increase in labor productivity in Massachusetts would raise expected weekly wages by only 1.7 percent.

18 Among the other countries establishing increased happiness as a national goal or developing efforts to measure happiness are China and Great Britain.

19 In 2008 the president of France, Nicolas Sarkozy, appointed an international commission to study the need for expanding upon and improving the existing measures of national economic performance, especially the Gross Domestic Product, The commission became known as the Commission on the Measurement of Economic Performance and Social Progress. In his foreword to the report of the commission, Sarkozy stated that "The problem stems from the fact that our world, our society, and our economy have changed and the measures have not kept pace." See Amartya Sen and Joseph Stiglitz, *Mismeasuring Our Lives: Why GDP Doesn't Add Up*, The New Press, New York, 2010.

20 Martha Nussbaum, *Creating Capabilities: the Human Development Approach*, The Belknap Press of Harvard University Press, Cambridge, 2011.

21 Among these studies of happiness and life satisfaction are the following, Derek Bok, *The Politics of Happiness*, Princeton University Press, Princeton, 2010; Arthur Brooks, *Gross National Happiness: Why Happiness Matters for America and How We Can Get More of It,* Basic Books, New York, 2008; Richard Layard, *Happiness: Lessons from A New Science*, Penguin Press, New York, 2005.

22 Among these new national surveys are the Behavioral Risk Factors Surveillance Systems of the National Centers for Disease Control. The Gallup organization also has undertaken surveys to measure health and well-being. See Gallup Inc., "Gallup – Health Ways Well Being Index: Methodology Report for Indexes, 2009."

23 For a review of the key features of the Lost Decade of 2000-2010 and the economic forces underlying it, see Menzie Chinn and Jeffrey Frieden, *Lost Decades: The Making of America's Debt Crisis and the Long Recovery*, W.W. Norton and Company, New York, 2011; Andrew Sum, "Ringing Out The Lost Economic Decade of 2000-2010 and Its Consequences: Part I," *The Huffington Post*, January 2011; Andrew Sum, "The Lost Decade: Part II," *The Huffington Post*, January 2011.

24 Despite a very severe loss in aggregate real GNP from 1929 to 1933, real output per capita was 17 percent higher in 1940 than it was in 1930. See US Council of Economic Advisers, *The Economic Report of the President: 1962*, (Washington, DC, US Government Printing Office, 1962).

25 The underemployed are those persons who are employed part-time (under 35 hours per week) but desire full-time jobs and are available for full-time work, see Andrew Sum and Ishwar Khatiwada, "The Underemployed in the Great Recession of 2007-09," *Monthly Labor Review*, November 2010.

26 See Andrew Sum, Mykhaylo Trubskyy, and Joseph McLaughlin, "The Great Dislocation of 2007-2009 and Its Impact on US Workers," *Challenge*, September – October; Andrew Sum and Joseph McLaughlin, "The Massive Shedding of Private Sector Jobs," *Challenge*, November – December, 2010.

27 See "US Worker Displacement from 2007-2009," (Washington, DC: US Bureau of Labor Statistics, 2010).

28 The mean duration of unemployment spells in Massachusetts reached nearly 32 weeks in the second half of 2010 and averaged over 35 weeks in the January-June period of 2011.

29 These findings are based on two separate wage data sources, the Quarterly Census of Employment and Wages and the Monthly Current Population Survey. For details on these two surveys, see www.bls.gov.

30 See "Four in 10 Americans Struggle to Pay the Bills, Anxious About Maintaining Middle Class Life," (New York, NY: Public Agenda, February 2010).

31 See Elizabeth Mendes, "US Optimism about the Future for Youth Reaches an All Time Low," (Washington, DC: Gallup, May 2011).

32 This shift share analysis allows us to estimate how the aggregate economic growth of the state was influenced by changes in the national output growth rates of industries and shifts in the state's share of national output within key industrial sectors.

33 See Joseph McLaughlin and Andrew Sum, "Comparisons of Job Vacancies With the Stock of Unemployed/Underemployed Workers in Massachusetts: Their Implications for Workforce Development Policy and Program Planning," (Boston, MA: The Workforce Solutions Group, 2011); Andrew Sum and others, "Labor Underutilization and Deep Job Deficit Problems in Massachusetts and the U.S: The Economic Case for Immediate Passage of the American Jobs Act of 2011," (Boston, MA: Center for Labor Market Studies, 2011); Andrew Sum, Ishwar Khatiwada, and Joseph McLaughlin, "An Assessment of Conditions in Massachusetts Labor Markets in 2009: Comparisons of the Numbers and Characteristics of Job Vacancies With the Pool of Unemployed and Underutilized Labor in the Commonwealth and Their Implications for Workforce Development Policy," (Boston, MA: Workforce Solutions Group, April 2010); Andrew Sum, Mykhaylo Trubskyy, and Sheila Palma, "The Depression in Blue Collar Labor Markets in Massachusetts and the US: The Implications of Growing Labor Surpluses Economic Stimulus and Workforce Development Policy," *Massachusetts Benchmarks* 13 (1) (2011).

34 Findings of a cross-state correlation analysis between the human capital attributes of a state based on the educational attainment of its labor force in 2000 and its job creation performance over the past decade also will be presented. In both 2000 and 2010, Massachusetts ranked first among the 50 states on the share of its employed workforce with a bachelor's or higher degree, but it ranked near the bottom in its job creation.

35 The CPS household surveys provide estimates of the number of employed residents in Massachusetts regardless of the geographic locations of their jobs while the payroll job surveys provide estimates of the number of wage and salary jobs in Massachusetts based on the locations of the firms or government agencies, not on the locations of the homes of their workers.

36 Annual average unemployment data for states based on the CPS household survey were not published by the US Bureau of Labor Statistics until the early 1970s; however, a few years of CPS based data for selected states were made available for earlier years.

37 The QCEW wage data can be used to assess findings for workers in industries and geographic areas across the state but not for any demographic or socioeconomic groups. The CPS wage data allow us to conduct a number of demographic and occupational analyses of the weekly wage data.

38 The official definitions of family households of the US Census Bureau have been used in identifying whether a given household in Massachusetts is to be categorized as a "family household." A family household is a household containing two or more individuals occupying separate living quarters who are related to each other by blood, marriage, or adoption.

39 Family types include married-couple families, male-headed families with no female spouse present in the home, and female-headed families with no male spouse.

40 See "The Behavioral Risk Factor Surveillance System, Data Codebook," (Washington, DC: Centers for Disease Control, 2011).

Chapter Two

Output Performance

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Introduction

The ability to extend the opportunity to achieve The American Dream to more households in Massachusetts is heavily dependent on the economic growth of the state. Increased employment and higher average annual wages are influenced by the growth of the state's aggregate output (its Gross State Product, or GSP) and the productivity of its workers.[1] The links between these variables run in both directions. On the one hand, the aggregate level of output that is produced within a given year is determined by the level of employment, average annual hours of work among the employed, and labor productivity (i.e., real output per hour of paid employment). At the same time, however, the demand by firms and government agencies for workers is influenced by their expected levels of output. Higher expected output typically leads to more employment.

The primary objectives of this chapter are to track and assess the real output performance of the Massachusetts economy over the past decade (2000-2010) and to compare its performance with that of the nation, the New England region as a whole, and all other states across the nation.[2] Comparisons of the aggregate output performance of the state economy in the most recent decade with those for the 1979-1989 decade and the 1990-2000 period also will be provided.

Analyses of growth rates in real GSP will be followed by a review of trends in per capita GSP levels and real output per worker in our state and the nation. A supply-side GSP model will be used to identify the role of demographics, labor force behavior, employment, annual hours of work, and labor productivity variables in influencing the growth of the state's GSP over the past decade and during that of the 1990s.[3] The final sections of this chapter will provide a shift-share analysis of the changing level of GSP of the state over the past decade, including the impacts of declining national shares of output in key industries on our low economic growth rate, the statistical links between changes in state output performance and the educational attainment of its employed workforce, and the links between the growth rates of payroll employment in states and their growth rates in aggregate real GSP over the 2000-2010 decade.

All of the estimates of the annual values of Gross State Product in Massachusetts and the other 49 states and of the nation's Gross Domestic Product (GDP) over the past 30 years are based on data provided by the Bureau of Economic Analysis (BEA) of the US Department of Commerce. The BEA generates annual estimates of a state's GSP based on the "value added" produced by all industries within a state. Value-added is derived by taking the market value of industry gross output minus all intermediate inputs from other industries in the state, nation, or the rest of the world. The BEA provides time-series data for both nominal and real Gross State Product for each state and for major industries. The BEA also publishes price deflators for each major industry that are used to convert nominal GSP by industry into their real dollar equivalents. The GSP can be considered as a measure of the real output produced by all capital and labor inputs located in the state regardless of the residences of their owners.

Trends in Real Gross State Product in Massachusetts, New England, all 50 States, and the Nation, 1979-2010

The new decade of 2001-2010 got off to a bad start in both Massachusetts and the nation. After eight years (1992-2000) of strong and steady economic growth that generated a substantial number of new job opportunities, a deep decline in unemployment, and rising productivity growth, the current decade started with the bursting of the Internet bubble that led to a recession in March 2001. The recession was relatively short-lived, ending in November 2001 and followed by a modest expansion in 2002-2007, before the national economy dipped into the abyss of the worst economic downturn since the Great Depression — a so-called Great Recession that lasted for 18 months and sharply reduced economic output. Economic growth in the nation over the past decade was the lowest in the last 80 years.

During the 2000-2010 decade, the Gross Domestic Product of the US grew modestly, as did output in Massachusetts and the New England region. In real terms, GDP grew by 17.7 percent in the US over the decade that started in 2000, with GDP rising from $9.9 trillion to $11.6 trillion. In New England, real GSP grew at a slower pace of 12.8 percent over the decade, with GSP increasing from $568 billion to $641 billion. The Massachusetts economy grew at an even slower rate of just 11 percent over the decade, with GSP increasing from $272 billion to $302 billion.

The growth rate of the Massachusetts economy over the past decade was far below its performance in the prior two decades. Between 1979 and 1989, the Massachusetts economy grew very rapidly from $127 billion in GSP to $201 billion, a growth rate of 58 percent. The New England economy also grew at a very high rate of 60 percent from $264.9 to $424.2 billion, and the national economy grew from $5 trillion to $6.8 trillion, a growth rate of nearly 36 percent. The 1980s is often referred to as the decade of The Massachusetts Miracle — a period when the Massachusetts economy expanded at a much higher rate than the US economy — and the term is clearly supported by our analysis.[4] During the 1990s, the pace of economic growth slowed down in both our state and the nation but still remained quite respectable, with the state economy growing at a 39 percent rate and the US economy at 42 percent.

Economic growth changed substantially during the past decade, and both the national and state economies were quite volatile. Both econo-

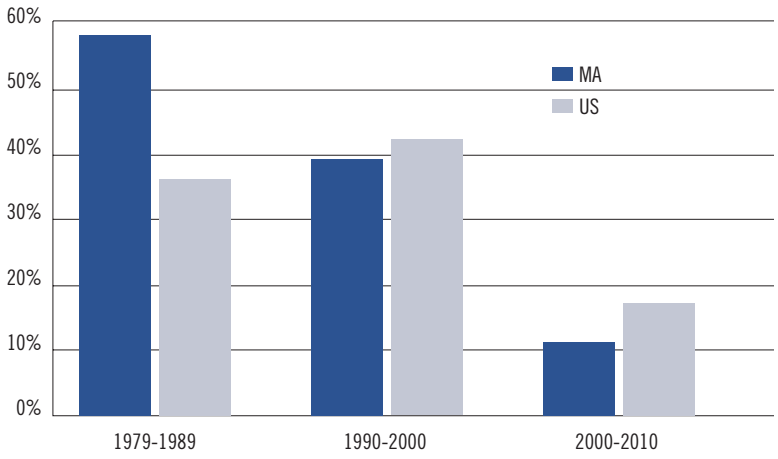
Table 2-1:

Trends in Aggregate Real Output in the US, New England, and Massachusetts, Selected Years, 1979-2010 (millions of chained 2000 dollars)

	MASSACHUSETTS	NEW ENGLAND	US
1979	$127,551	$264,866	$5,042,934
1989	$201,733	$424,196	$6,842,695
1990	$195,841	$417,497	$6,939,227
2000	$272,680	$568,641	$9,884,171
2010	$302,744	$641,710	$11,632,245
% CHANGE	**MASSACHUSETTS**	**NEW ENGLAND**	**US**
1979-1989	58.2	60.1	35.7
1990-2000	39.2	36.2	42.4
2000-2010	11.0	12.8	17.7

Chart 2-1:

Growth Rates of Real Gross State Product in Massachusetts and the US



mies were subject to two recessions: the modest and relatively short-lived national recession of 2001, which began in March 2001 and ended in November 2001, and the deeper and long-lived national recession from December 2007 to June 2009. The so-called Great Recession lasted for 18 months, the longest recession in post–World War II history, and real GDP fell by 5.1 percent from the fourth quarter of 2007 through the second quarter of 2009, the largest percentage point decline in real GDP in any post–World War II recession.

Neither the nation's nor the state's real GDP declined during 2001, despite the existence of the recession. The nation's real GDP increased by slightly over 1 percent in 2001 while the state economy grew by the same relative degree (about 1.2 percent). Over the 2001-2004 period, the US economy grew by 8.1 percent while the state economy eked out only a 3 percent growth rate.

A modest national employment expansion that lasted from 2004 to 2007 led to a growth rate of 7.8 percent for the US, while GSP in Massachusetts increased from $284 billion to $295 billion or 3.7 percent. The financial crisis of 2008 and the ensuing economic decline led to a sharp decrease in the employed population and a drop in state GSP from $295 billion in 2007 to $291 billion for Massachusetts by 2009, and from $11.6 trillion to $11.3 trillion for the nation by 2009. GSP increased to $302 billion in Massachusetts and $11.6 trillion in the US between 2009 and 2010.[5] Massachusetts fared better than the nation over this last year, growing by nearly 4 percent while the US grew by only 2.8 percent.

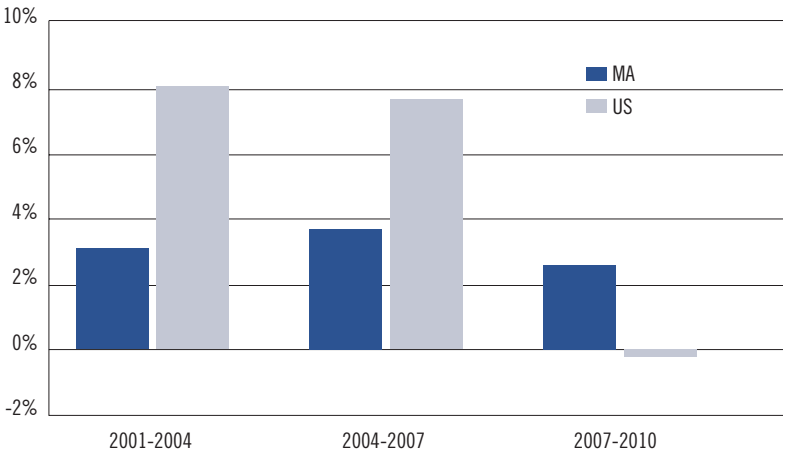
Table 2-2:

Real Output in the US, New England, and Massachusetts, 2000-2010 (millions of chained 2000 dollars)

	MASSACHUSETTS	NEW ENGLAND	US
2000	$272,680	$568,641	$9,884,171
2001	$276,057	$574,925	$9,992,269
2003	$280,229	$587,069	$10,431,420
2004	$284,610	$604,583	$10,806,762
2005	$286,842	$609,116	$11,138,733
2007	$295,108	$630,013	$11,667,490
2009	$291,517	$622,033	$11,331,870
2010	$302,744	$641,710	$11,632,245
GROWTH RATES			
2001-2004	3.1%	5.1%	8.1%
2004-2007	3.7%	4.4%	7.8%
2007-2010	2.7%	1.9%	-0.2%

Chart 2-2:

Growth Rates in Real Gross State Product in Massachusetts and the US from 2001-04, 2004-07, and 2007-10



Trends in Real GSP Per Capita in the US, New England, and Massachusetts, 1979-2010

GSP per capita is often viewed as a more appropriate measure of economic growth and economic well-being in the state because it captures not only changes in the total output produced by the state, but also changes in the size of the resident population. Over time, average living standards of residents will depend on the growth of real output per capita in a state or the nation. How rapidly did our real output growth outpace our population growth over the past few decades?

At the beginning of the Massachusetts Miracle decade in 1979, Massachusetts real output per capita stood at only $22,228 (in constant 2000 dollars) which was slightly lower than US real output per capita during that year, and the state ranked only 22nd highest among the 50 US states. By the end of the decade, in 1989, Massachusetts per capita output leaped to $32,551, which was now 21 percent higher than the nation's real output per capita, and the state ranked eighth highest in the nation, a very substantial improvement in just 10 years. Output per capita grew by an unprecedented 51 percent over 10 years, while the national economy grew at less than half that rate. Over the next decade, 1990-2000, fueled in part by the Internet boom and strong output growth after 1992, the rate of growth in GDP per capita for the US stood at 25.6 percent. Massachusetts's per capita growth rate slowed in the 1990s, but still outpaced the nation at nearly 32 percent. At the end of the past decade in 2000, Massachusetts real output per capita was $42,854 and ranked fourth highest among the 50 US states. It stood at 22 percent above the US average of $35,029.

The past decade saw a substantial slowdown in the growth of real output per capita in both the nation and the state. Over the 2000-2004 period, real output per capita in Massachusetts grew by only 3.1 percent to $44,117, while US output per capita grew at a slightly higher rate of 5.3 percent to $36,877. Our rank declined to fifth highest in 2004. The next three years, 2004-2007, saw a higher rate of improvement in real GDP per capita in the nation, fueled by the faster increase in employment which resulted in a higher growth in GSP per capita of 4.9 percent for the nation but only 2.9 percent for Massachusetts. The state's GSP ranking fell to 8th highest in 2007. During the 2007 to 2010 period, while the nation's GDP per capita contracted to $37,675, or 2.6 percent, it increased moderately to $46,237 in Massachusetts, a growth rate of 1.8 percent that was largely due to job losses being not as severe as in the nation. In 2010, output per capita in Massachusetts stood at $46,237, or the seventh highest in the nation, and 23 percent above the US average. The 2000-2010 decade in the US saw the lowest growth rate of per capita GDP of any decade since the 1930s decade that included the Great Depression. In fact, no

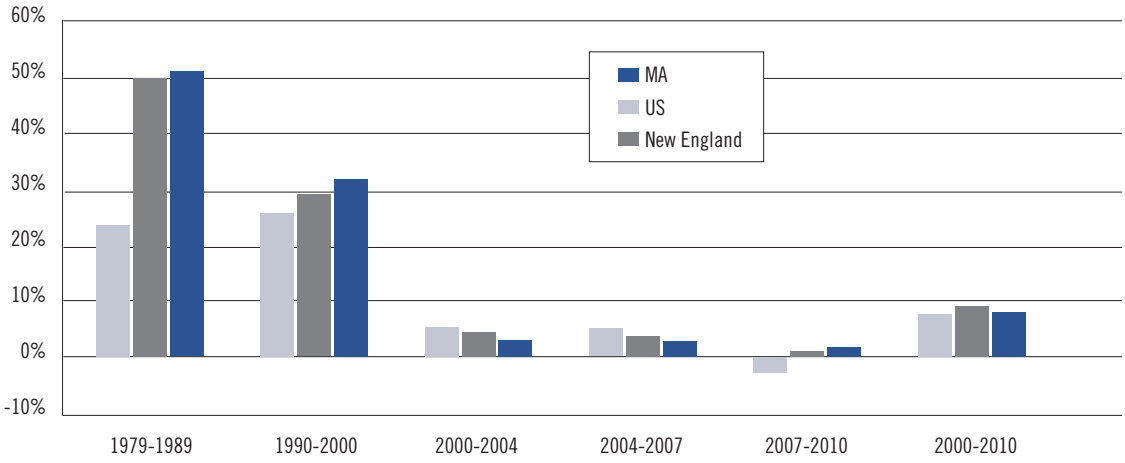
Table 2-3:

Trends in Real Output Per Capita in the US, New England, and Massachusetts, 1979–2010 (2000 constant dollars)

	US	NEW ENGLAND	MA	MA/US	MA RANK AMONG 50 STATES
1979	$22,456	$21,496	$22,228	0.990	22
1989	$27,724	$32,181	$33,536	1.210	8
1990	$27,901	$31,612	$32,551	1.167	9
1992	$28,012	$31,537	$32,358	1.155	9
2000	$35,029	$40,754	$42,854	1.223	4
2001	$35,051	$40,914	$43,055	1.228	4
2002	$35,351	$40,940	$43,016	1.217	5
2003	$35,930	$41,365	$43,435	1.209	5
2004	$36,877	$42,527	$44,117	1.196	5
2005	$37,662	$42,813	$44,451	1.180	6
2006	$38,314	$43,511	$44,887	1.172	8
2007	$38,688	$44,063	$45,406	1.174	8
2008	$38,309	$43,939	$45,655	1.192	7
2009	$36,911	$43,108	$44,212	1.198	7
2010	$37,675	$44,425	$46,237	1.227	7

Chart 2-3:

Growth Rates of GDP Per Capita in Massachusetts, New England, and US, 1979-2010



decade over the last 80 years has seen national growth of GDP per capita in the single digits, as was the case for the last 10 years.[6]

The Sources of Growth of Real Output in Massachusetts from 2000 to 2010: Findings of the Supply GSP Methodology

The level of state output and growth in state output over time (as measured by growth in GSP) are affected by a wide variety of forces including demographic trends, labor force participation, labor supply, labor utilization, technology, and labor productivity. For economic policymaking, it is important to know to what extent each of these measures influences GSP growth. Is the state growing extensively (i.e., due to the growth of the population and the employed labor force) or intensively (i.e., due to technology and productivity growth)? This knowledge would allow for a better understanding of the state's GSP growth dynamics.[7]

To analyze sources of GSP growth in both the state and the nation, we used the supply GDP model. In this model, the value of the annual GSP is disaggregated into five components: the size of the non-institutional civilian working age population, which captures the absolute size of the state's civilian population 16 and older; the share of the working-age population that is in the resident labor force, which captures the portion of the working age population that is actively participating in the labor force; the share of the labor force that was actually employed for pay or profit; the mean hours worked per employed person during the year, which gives the intensity of employment; and real output per hour of work, which captures the average value of labor productivity in the state.

We have generated estimates of each of these variables for Massachusetts and the US in both 2000 and 2010 and analyzed how they affected the growth of real GSP between 2000 and 2010. Over this period, the share of the resident population that was of working age in Massachusetts grew by about 4 percent, indicating that a larger share of the population was available for work, thus increasing a potential source of additional GSP. While the working-age population has grown, the share that was actually engaged in the labor force decreased by 3.1 percent. The labor force participation rate declined from 68 percent

Table 2-4:

Disaggregating the Sources of GSP of a State's Economy

GSP = Pw * L/Pw * E/L * H/E * GSP/H

Where, Pw = The number of persons 16+ in the state's resident, civilian non-institutional population.

L = The number of working-age (16+) persons who either worked or looked for work on an average month during the year.

E = The number of working-age persons who were employed on an average month during the year.

H/E = The mean annual hours of paid employment among the employed of a state.

GSP/H = Real output per hour of paid employment in the state.

Table 2-5:

Trends in Real GSP Per Capita in Massachusetts and the US and their Underlying Determinants, 2000-2010 (2000 constant dollars)

MASSACHUSETTS	2000	2010	PERCENT CHANGE
Real GSP (in millions)	$272,680	$302,744	11.0%
Real GSP per capita	43,055	46,237	7.9%
Civilian non-institutional population/total population	0.77	0.81	4.1%
Labor force/civilian non-institutional population	0.68	0.66	-3.1%
Employment participation rate	0.97	0.91	-5.9%
Average hours worked	1835	1750	-4.6%
Real output/hour	45.40	54.11	19.2%
US	**2000**	**2010**	**PERCENT CHANGE**
Real GDP (in millions)	9,884,171	11,491,621	17.7%
Real GDP per capita	35,029	37,675	7.6%
Civilian non-institutional population/total population	0.75	0.77	2.1%
Labor force/civilian non-institutional population	0.67	0.65	-3.6%
Employment participation rate	0.96	0.90	-5.9%
Average hours worked	1861	1788	-3.9%
Real output/hour	38.78	46.85	20.8%

to 66 percent from 2000 to 2010. Decreasing labor force participation had a negative impact on GSP growth over the decade. Not only did the labor force participation rate decline over the period under analysis, but also the employment rate dropped from a high of 97 percent to 91 percent, indicating that fewer people were able to find employment during the year, thus reducing the pace of GSP growth. Those workers who were able to find jobs worked 85 (or 4.6 percent) fewer hours per year on average in 2010 than in 2000, putting further negative pressure on GSP growth.

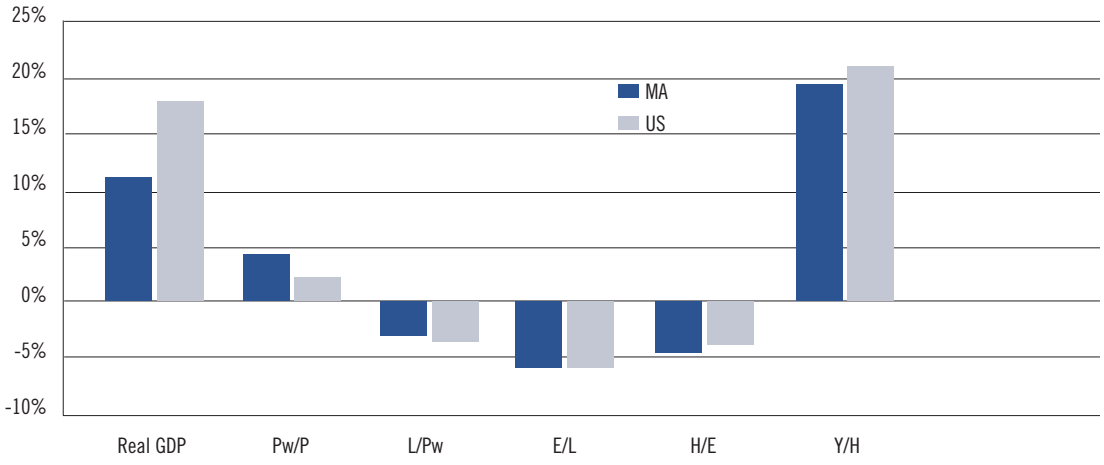
Though the employment rates and annual hours of work per employed person clearly declined over the decade, we found that each employed worker produced more output per hour of work (i.e., labor productivity increased). In 2000, workers contributed $45.40 to state output per each hour employed, while in 2010 this increased to $54.11, a 19.2 percent increase in labor productivity. Since all other labor force, employment, and hours of work measures turned out negative, this translated into a real GSP growth of only 11 percent and growth in real GSP per capita of only 7.9 percent. As noted above, these per capita GSP growth developments were well below those in the two prior decades and increased the difficulties of Massachusetts workers and their families in achieving the American Dream.

The United States exhibited similar dynamics in GSP growth. While all labor force, employment, and hours of work measures deteriorated, the labor productivity measure increased by 20.8 percent over the decade, translating into a 17.7 percent growth of real GSP, a higher growth rate than in Massachusetts, but only 7.6 percent growth in real GSP per capita due to faster population growth in the nation.

The above findings can be compared to those for a similar analysis that we conducted in our 2007 report *Mass Jobs*.[8] The previous decade, 1989-2000, was characterized by a much differ-

Chart 2-4:

Comparisons of Estimated Changes in Determinants of GSP, 2000-2010



ent set of GSP developments in Massachusetts. Except for the labor force participation rate, all other employment and hours of work measures showed a positive trend, with the employment rate rising to 97 percent (1.3 percent) and average annual hours worked to 1,842 (4 percent). At the same time, productivity grew by about 31 percent, from $32.06 to $42.12 per hour, which drove GSP per capita upward by a very strong 31.6 percent over the decade.

A comparison of the findings for these two decades clearly underscores the problems we have been having in generating growth in the Massachusetts economy. In 2000-2010, key labor market variables were in decline, and productivity growth also slowed considerably relative to its performance in the previous decade.

Overall, over the past decade, Massachusetts did not fare well on most supply GDP measures as compared to the US and the performance of the other 49 states. It ranked only 45th highest on the real GSP growth measure, 28th highest on per capita GSP growth, 34th highest on labor productivity growth, and only 32nd highest on change in the employment rate.

As was shown above, while performance on most labor market measures broadly declined

Table 2-6:

Trends in Real GSP Per Capita in Massachusetts and Their Underlying Determinants, 1989-2000 (1996 constant dollars)

MASSACHUSETTS	1989	2000	PERCENT CHANGE
Real GSP per capita	$32,223	$42,417	31.6%
Civilian non-institutional population/total population	0.78	0.79	0.7%
Labor force/civilian non-institutional population	0.69	0.68	-1.9%
Employment participation rate	0.96	0.97	1.3%
Average hours worked	1772	1842	4.0%
Real output/hour	$32.06	$42.12	31.4%

Table 2-7:

Percent Change in the Value of Supply GDP Model Variables between 2000 and 2010, Massachusetts vs. US

	MA	US	MA RANKING AMONG 50 STATES
Real GSP	9.7%	16.3%	45
Real GSP per capita	6.6%	6.3%	28
Civilian non-institutional population/total population	4.1%	2.1%	6
Labor force/civilian non-institutional population	-3.1%	-3.6%	23
Employment participation rate	-5.9%	-5.9%	32
Average hours worked	-4.6%	-3.9%	35
Real output/hour	17.7%	19.4%	34

Table 2-8:

Trends in Real Gross State Product, Payroll Employment, and Real Output Per Worker in the State of Massachusetts, 2000-2010

VARIABLE	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
Real gross state product (in billions of 2000 constant dollars)	$272.7	$302.7	$30.0	11.0
Payroll employment (in 1000s)	3,329	3,186	(143.0)	-4.3
Real output per worker	$81,916	$95,009	$11,385	16.0

Trends in Real Gross State Product, Payroll Employment, and Real Output Per Worker in the US, 2000-2010

VARIABLE	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
Real gross state product (in billions of 2000 constant dollars)	$9,884.2	$11,632.6	$1,607.45	17.7
Payroll employment (in 1000s)	131,785	129,818	-1,967	-1.5
Real output per worker	$75,002	$89,607	$14,605	19.5

over the past decade, labor productivity grew over the decade in both Massachusetts and the US. In Table 2-8, we present estimates of the growth in real output and real output per worker.[9] Between 2000 and 2010, real GSP in Massachusetts grew by $30.0 billion, or 11 percent. At the same time, payroll employment in the state fell by 4.3 percent. As a consequence, labor productivity as measured by real output per worker increased by 16 percent — a rate slightly higher than real GSP growth. In the US over the same decade, GDP grew by $1.6 trillion, or 17.7 percent, a rate slightly higher than that of Massachusetts. Payroll employment in the US also declined by about 2 percent — which implies that labor productivity (output per worker) grew by about 20 percent, or by about $14,600 per worker.

Links Between Labor Productivity Growth and Weekly Wage Growth in Massachusetts, 2000-2010

Did the increase in labor productivity result in an increase in mean weekly wages of Massachusetts and US wage and salary workers over the past decade? To answer this question, we used the Quarterly Census of Employment and Wages (QCEW), a database for workers in Massachusetts and the US that identifies average weekly wages of workers as reported by private and public employers covered by the unemployment insurance system on a quarterly basis. The QCEW database provides averages for weekly wages of all employees, working both part-time and full-time. The results of this analysis are presented in Table 2-9. In the US, weekly wages fell by about 1 percent at the beginning of the decade, from $680 in 2000 to $675 in 2003, then increased 5 percent to $708 by 2007, and then basically stayed flat to produce a modest growth rate of just 3.7 percent over the decade. Mean real weekly wages in Massachusetts showed a more volatile trend with no net increase over the decade. Weekly wages in Massachusetts decreased by almost 7 percent by 2003 (from $866 to $807), then regained most of the losses by 2007 and stayed flat through 2010. For the decade as a whole, wages showed only a small increase of 0.2 percent. Though we are not trying to explain the reasons for such poor growth in weekly earnings in this chapter, given the favorable growth in productivity, we want to point out one of the possible reasons for wage

stagnation. Over the decade, on the back of the weak economy and poor job generation, fewer workers were able to secure year-round, full-time jobs. These workers who wanted a full-time, year-round job were more likely to have a full-time job in 2000. By 2010, fewer workers were able to do so and often had to settle for a part-time or part-year position,[10] thus reducing his or her average weekly compensation as compared to the beginning of the decade.

Though output per worker grew by 16 percent and 19 percent in Massachusetts and the US respectively, the weekly wages have stayed basically flat over the decade, emphasizing a broken link between labor productivity growth and wages.

The failure of the mean real weekly earnings of Massachusetts wage and salary workers to rise over the past decade despite substantive gains in labor productivity suggests that the link between wage growth and productivity growth had become substantially severed at least for the time being. In our earlier report, *Mass Jobs*, we showed that there was only a modest positive relationship between labor productivity growth and the increases in the mean real weekly earnings of wage and salary workers in private sector industries of the state over the 2000-2004 period.[11] Nationally, the link between labor productivity growth in industries and mean weekly wages of their workers over the 2000-2004 period was already broken.

To identify whether productivity growth and real weekly wage growth in Massachusetts industries were positively linked to each other over the past decade, we estimated a multiple regression model. The dependent variable in the model is the percent increase (decrease) in the mean weekly wage of workers in each industry (53 separate industries) over the 2000-2010 period.[12] The explanatory variables are the percent change in employment, the percent growth in real output per worker, and the percent change in the price deflator of the industry. Findings of the regres-

Table 2-9:

Trends in the Mean Real Weekly Earnings of Full-Time Wage and Salary Workers in the US and Massachusetts Between 2000 and 2010 (in 2000 constant dollars)

UNITED STATES	MEAN WEEKLY EARNINGS
2000	$680
2003	$675
2005	$687
2007	$708
2010	$705
Absolute change 2000-2003	-5
Percent change 2000-2003	-0.8%
Absolute change 2003-2007	$34
Percent change 2003-2007	5.0%
Absolute change 2000-2010	$25
Percent change 2000-2010	3.7%
MASSACHUSETTS	**MEAN WEEKLY EARNINGS**
2000	$866
2003	$807
2005	$823
2007	$866
2010	$868
Absolute change 2000-2003	-59
Percent change 2000-2003	-6.8%
Absolute change 2003-2007	$60
Percent change 2003-2007	7.4%
Absolute change 2000-2010	$2
Percent change 2000-2010	0.2%

Table 2-10:

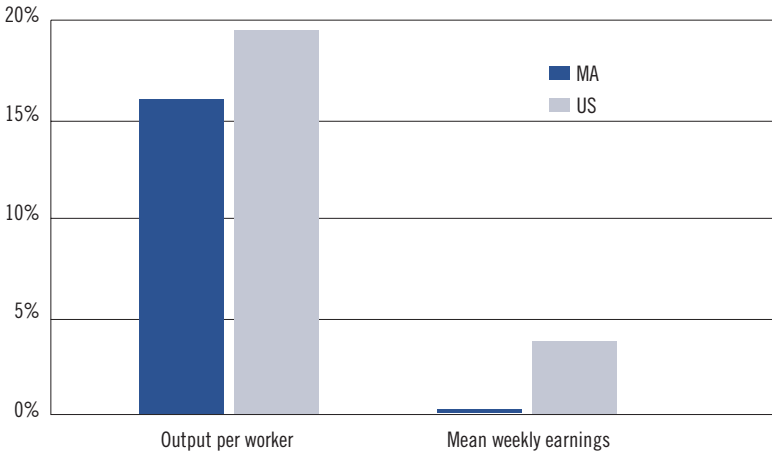
Findings of the Regression Model of Changes in the Real Weekly Earnings of Workers in Selected Industries of Massachusetts, 2000–2010

VARIABLE	COEFFICIENT	T-STATISTIC	SIG. LEVEL
Constant	-.007	-0.29	--
% change employment	.069	1.90	*
% change GSP per worker	.074	2.00	**
% change price deflator	.124	2.10	**

R2 = .13 D.F. = 3, 53 F = 2.02 Sig. = .10
Note: ** Sig. .05 -- not Significant

Chart 2-5:

Comparisons of Estimated Percent Changes in the Mean Weekly Earnings and Real Annual Output Per Worker in Massachusetts and the US, 2000-2010



sion analysis are displayed in Table 2-10.

All three of the independent variables had a statistically significant effect on the growth of real weekly earnings. The link between productivity growth and wage growth in Massachusetts was significant but quite modest. A 10 percent increase in labor productivity would raise weekly earnings by slightly less than 1 percent. Employment growth also had a small, positive, statistically significant effect on mean weekly earnings. A 10 percent increase in employment in an industry over the decade, *ceteris paribus*, would be expected to raise real weekly earnings by only .7 percent, a relatively modest impact. An increase in the price of the goods or services produced by the industry also would modestly raise wages. A 10 percent increase in the price deflator would raise weekly earnings by 1.2 percent.

Links Between State GSP Growth Rates and State Human Capital

Education is a form of human capital investment that influences the labor market behavior and productivity of many individuals.[13] Adults with higher levels of formal schooling are more likely to actively participate in the labor force, to work more hours during the year, and to be more productive per hour of paid employment.[14] Past research on state GSP performance has shown that the human capital level of a state's employed workforce has a powerful, statistically significant impact on its aggregate level of output during a given year, holding its capital stock and levels of employment constant.[15]

Nationally, a number of economists, educators, and political leaders, including President Obama, have commented on the importance of a college-educated workforce in promoting economic growth and the economic well-being of the population. President Obama recently has set a goal of making the US the world leader in the share of its working age population with a college degree by 2020.[16]

While higher levels of formal schooling clearly do help raise the level of real output in state and national economies, do states with a higher share of their workforce with college degrees also grow faster over time than their peers with a lower incidence of college educated workers? Earlier in this chapter, we analyzed the link between labor productivity growth and real output growth over time. It is reasonable to expect the growth in labor productivity to lead to faster growth in aggregate output and income — an effect that we have not observed over the current decade. One of the major drivers of labor productivity is believed to be the formal education of its workers. A better-educated population should drive productivity higher. Hence, we might expect a state in which the workforce is better educated to have a higher level of productivity and therefore higher growth rates of real GSP, real GSP per capita, and output per worker. The recent evidence, however, tells a quite different story.

Table 2-13 compares the top 10 states with workers having a college degree in 2000 with the 10 best performing states in real GSP growth

rates, real GSP per capita growth, and real GSP per worker growth rates from 2000-2010. It should be noted that Massachusetts ranked first on this key educational outcome measure in 2000 and was joined in the top 10 by three other New England states (Connecticut, New Hampshire, Vermont) and two other Northeast region states (New Jersey and New York). Yet, not one of these states made the top 10 list on any of the output performance measures.

Of the 10 states with the highest share of its employed workforce holding an associate's or higher degree in 2000, none appeared among the 10 fastest-growing states between 2000-2010, only one of them made the top 20, and three fell among the 10 slowest-growing states. It should be noted that the GSP growth rates of the top 10 states ranged from a low of 32 percent in Texas and Utah to a high of 81 percent in Wyoming. These growth rates were two to five times as high as the GSP growth rate of Massachusetts. If we switch our economic performance variable to the growth of GSP per capita, the situation improves only modestly. Two of the 10 best-educated states made the top 10, but only the same two made

Table 2-11:

Comparing the Economic Growth Performance between 2000-2010 of the 10 States with the Highest Share of Workers with a College Degree in 2000

GROWTH VARIABLE	NUMBER OF STATES IN TOP 10	NUMBER OF STATES IN TOP 20	NUMBER OF STATES IN BOTTOM 10
Aggregate GSP	0	1	3
GSP per capita	2	2	1
Labor productivity	0	2	3

Table 2-12:

Simple Correlations Between the Growth Rates of Real Output, Real Output Per Capita, and Labor Productivity of States between 2000-2010 and the Share of their Workforce with College Degrees, 2000

VARIABLE	CORRELATIONS BETWEEN SHARE OF WORKERS WITH COLLEGE DEGREE AND SELECTED VARIABLE	SIGNIFICANT LEVEL
Aggregate GSP growth rate	-.214	--
Growth rate of GSP per capita	-.095	--
Growth rate in labor productivity	-.287	*

Notes: -- not significant at .10 * sig. at .10

Table 2-13:

Top 10 Best Educated States and the Top 10 States in Terms of GSP Growth, GSP Per Capita Growth, and Growth in GSP Per Worker, 2000-2010

REAL GSP GROWTH RATE		REAL GSP PER HEAD GROWTH RATE		REAL GSP PER WORKER GROWTH RATE		PERCENT OF THE POPULATION WITH A COLLEGE DEGREE (ASSOCIATE'S OR HIGHER)	
Wyoming	80.7%	Wyoming	58.3%	Wyoming	69.7%	Massachusetts	54.9%
North Dakota	51.9%	North Dakota	44.8%	North Dakota	43.5%	Minnesota	51.9%
Alaska	51.5%	Alaska	33.9%	Alaska	36.4%	Colorado	50.2%
Montana	33.3%	Louisiana	31.2%	West Virginia	34.2%	Connecticut	49.7%
Louisiana	33.1%	South Dakota	23.3%	Louisiana	33.4%	New Hampshire	49.3%
South Dakota	32.8%	Montana	21.7%	Montana	29.0%	Maryland	49.0%
Nevada	32.3%	West Virginia	21.7%	Hawaii	28.4%	New York	48.1%
Utah	31.8%	Oklahoma	18.9%	Alabama	27.7%	New Jersey	48.0%
Texas	31.7%	Maryland	18.7%	Oklahoma	27.5%	Vermont	47.1%
Virginia	29.4%	New York	17.9%	Maryland	26.8%	Washington	47.0%

the top 20. One of the 10 best-educated states fell in the bottom 10 performers on GSP per capita growth. Switching our performance variable to growth rates in labor productivity, none of the 10 best-educated states made the top 10 list in productivity, and only two of them made the top 20. Three of the 10 best-educated states fell among the bottom 10 performers on labor productivity.

We also conducted a set of simple correlation tests between the three economic growth variables for each of the states and the share of their employed workforce with a college degree in 2000 (Table 2-12). The simple correlation between aggregate GSP growth and the share of workers with a college degree was a negative -.214, falling just shy of being statistically significant at the .10 level. The simple correlation between the growth rate of GSP per capita and the college-educated share of the employed was a negative -.10, but was not statistically significant. Finally, the simple correlation between the growth of labor productivity over the decade and the college educated share of the employed in 2000 was a negative -.287 which was significant at the .10 level. Having a highly educated workforce in 2000 did not have any positive significant correlation with their economic growth rates between 2000-2010 either in the aggregate or in per capita GSP.

HAVING A HIGHLY EDUCATED WORKFORCE IN 2000 DID NOT HAVE ANY POSITIVE SIGNIFICANT CORRELATION WITH ECONOMIC GROWTH RATES.

A Shift-Share Analysis of State Output Performance

To improve our understanding of the state's real output performance over the past decade, we have performed a shift-share analysis of output changes. Shift-share analysis involves disaggregating the change in the output of each industry into three components — the national growth effect, industry mix effect, and state-share effect.[17] Growth in the GSP of a state could come from multiple sources and be due to a number of different factors. Did total output of the state grow because the nation experienced an expansion of its output or because the state had a favorable mix of industries with above average national growth rates or because the state captured a larger share of output within individual industries?

The shift-share analysis of industrial output changes in the state reveals that the national growth effect by itself would have increased state real output by $44.4 billion over the 2000-2009 time period. This compares to an actual increase of only $26.9 billion, or a level of output that was $17.5 billion lower than predicted by the national growth effect. The below-average performance of the state in producing a higher level of GSP was not due to an unfavorable mix of industries with below-average growth in output nationally but instead due to declining state shares of output in key industries. The net industry mix effect was exactly equal to zero; however, the regional share effect for the entire economy was a $19.8 billion or between 5 percent and 6 percent of the state's real GSP in 2009.

All of the increase in state output over the 2000-2009 time period was generated by the private sector, including nonprofits. Output in the public sector declined modestly by about $217 million, or about 1 percent. In contrast, aggregate output in the private sector increased by $27 billion, or 10 percent. All of this increase in private sector output was due to the national growth effect with the regional mix effect being modestly negative (-$843 million) and the regional share effect being considerably more negative at $12.1 billion. The overall state share-effect is negative by a minus $17.8 billion, indi-

Table 2-14:

Growth in the Real GSP of the Massachusetts Economy Between 2000-2009 and the Sources of That Growth from a Shift-Share Analysis (millions of real dollars)

MASSACHUSETTS INDUSTRIES	REAL GSP 2000	REAL GSP 2009	ABSOLUTE CHANGE	% CHANGE	NATIONAL EFFECT	INDUSTRY MIX	REGIONAL SHARE
All industries	$301,321	$328,247	$26,926	8.9	44,412	0	-17,846
Private sector industries	$272,135	$299,278	$27,143	10.0	40,110	-843	-12,124
Public sector	$29,186	$28,969	$-217	-.7%	4,302	+843	-5,722

Table 2-15:

Winners and Losers in the Massachusetts Economy from Industry Mix and State Share Changes

TOP 10 INDUSTRIES WHO WERE MIX LOSERS IN MA	TOP 10 SHIFT-SHARE LOSERS IN MA	TOP 10 SHIFT-SHARE WINNERS IN MA
1 Construction	1 Computer and electronic products	1 Federal Reserve banks, credit intermediation and related services
2 Fabricated metal product manufacturing	2 Insurance carriers and related activities	2 Ambulatory health care services
3 Retail trade	3 Real estate	3 Other transportation equipment manufacturing
4 Accommodation and food services	4 Wholesale trade	4 Hospitals and nursing and residential care facilities
5 Management of companies and enterprises	5 Funds, trusts, and other financial vehicles	5 Chemical manufacturing
6 Educational services	6 Administrative and support services	6 Arts, entertainment, and recreation
7 Plastics and rubber products manufacturing	7 Construction	7 Other professional, scientific, and technical services
8 Legal services	8 Computer systems design and related services	8 Legal services
9 Machinery manufacturing	9 Fabricated metal product manufacturing	9 Publishing including software
10 Paper manufacturing	10 Retail trade	10 Performing arts, museums, and related activities

cating that Massachusetts was losing its competitiveness among other US states.

A number of state industries lost their share of national output over the decade, including such industries as construction, computer and electrical product manufacturers, insurance and real estate industry, wholesale trade, and computer systems design (Table 2-15). There have been a small number of state industries that were relative winners in their shares of national output. These industries include ambulatory health care, hospitals and nursing care, chemical manufacturing, parts of the information industry, and arts, entertainment, and recreation services.

The combined negative state-share effects dominated the state's poor output performance over the decade, indicating a loss of competitiveness of Massachusetts industries on many fronts. As noted above, these included the computer and electronics products and computer design industries, once a home to pioneers in this industry.

The Links Between State GSP Growth and Payroll Employment Growth Over the 2000-2010 Decade

The substantial slowdown in our state's GSP growth over the past decade has sharply curtailed the growth of payroll employment for Massachusetts workers. As the next chapter will reveal, both Massachusetts and the US ended the past decade with fewer payroll jobs than it had in 2000. This marked the first decade in the post–World War II era in which no net new payroll jobs were created in either our state or the nation.

Real GSP growth can occur without any increase in employment if either the employed work more hours per year and/or their productivity per hour of work increases. Growing labor productivity accounted for all of the state's modest GSP growth in the past decade. Considerably higher rates of GSP growth would have been needed to boost payroll employment. To test the simple relationship between GSP growth and payroll employment growth across states over the past decade, we estimated a simple model in which the percent growth (decline) in a state's payroll employment level was regressed against its real GSP growth rate over the decade. Findings are summarized in Table 2-16.

The regression findings reveal that the rate of GSP growth in a state was a very statistically significant predictor of its payroll employment growth. Each percentage point higher in GDP growth rate would add approximately .42 percentage points to payroll job growth. This coefficient was statistically significant at the .001 level. The constant term, however, was negative and also very significant. The value of the constant term coefficient was -.086. This finding implies that GSP growth in the state over the decade would have to be at least 20 percent to generate any increase in payroll employment due to labor productivity increases over the decade. A substantial acceleration of state GSP growth in the current decade will be needed to boost the number of payroll jobs in Massachusetts.

Table 2-16:

Findings of the Regression Model of Payroll Employment Changes for States, 2000-2010

VARIABLE	COEFFICIENT	STANDARD ERROR	T	SIG. LEVEL
Constant	-.086	.008	-10.75	.000
% Ch GSP	.424	.031	13.77	.000

R2 = .79 F-statistic = 189.6
Degrees of Freedom = 1, 49 Sig. of F = .001

Appendix: Detailed Industry Findings on the Shift-Share Analysis of GDP Developments, 2000-2009

This appendix presents findings of a detailed shift-share analysis for a number of major industries in Massachusetts from 2000 to 2009. Shift-share analysis is used to analyze sources of changes in real GSP by disaggregating output changes of each industry into three components — national growth effect, industry mix effect, and state share effect. National growth effect (NE) measures the change in industry GSP that is attributable to overall changes in national GDP. Industry mix effect (IM) measures changes attributable to differences in the state's industrial output composition from that of the nation, and regional share effect (RS) is the portion of the change in GSP that results from a change in the state's share of national output in industries over time. All numbers are in millions of dollars at 2000 prices.

Appendix:

Estimated Changes in Aggregate Real GSP of Massachusetts 2000-2009, Total and by Source (2000 dollars, numbers in millions)

			2000-2009				
INDUSTRY	2000	2009	ABSOLUTE CHANGE	PERCENT CHANGE	NE	IM	RS
All industry total	$301,321	$328,247	$26,926	8.9	44,412	0	-17,486
Private industries	$272,135	$299,278	$27,143	10.0	40,110	-843	-12,124
Agriculture, forestry, fishing, and hunting	$491	$742	$251	51.1	72	81	97
Crop and animal production (Farms)	$257	$273	$16	6.2	38	39	-61
Forestry, fishing, and related activities	$239	$462	$223	93.3	35	38	150
Mining	$228	$107	$-121	-53.1	34	-3	-151
Mining, except oil and gas	$223	$91	$-132	-59.2	33	-81	-84
Support activities for mining	$3	$14	$11	366.7	0	0	10
Utilities	$4,038	$3,974	$-64	-1.6	595	-891	232
Construction	$16,454	$9,605	$-6,849	-41.6	2,425	-7,639	-1,635
Manufacturing	$29,668	$31,713	$2,045	6.9	4,373	-2,818	490
Durable goods	$19,510	$23,105	$3,595	18.4	2,876	-7	726
Wood product manufacturing	$164	$142	$-22	-13.4	24	-50	4
Nonmetallic mineral product manufacturing	$608	$362	$-246	-40.5	90	-261	-75
Primary metal manufacturing	$666	$467	$-199	-29.9	98	-283	-14
Fabricated metal product manufacturing	$4,612	$2,161	$-2,451	-53.1	680	-1,947	-1,184
Machinery manufacturing	$2,617	$1,315	$-1,302	-49.8	386	-764	-923
Computer and electronic product manufacturing	$5,284	$13,617	$8,333	157.7	779	12,986	-5,431
Electrical equipment and appliance manufacturing	$1,259	$940	$-319	-25.3	186	-214	-291
Motor vehicle, body, trailer, and parts manufacturing	$124	$124	$0	0.0	18	-40	22
Other transportation equipment manufacturing	$793	$1,552	$759	95.7	117	-81	723
Furniture and related product manufacturing	$418	$285	$-133	-31.8	62	-242	47
Miscellaneous manufacturing	$3,690	$2,938	$-752	-20.4	544	275	-1,571
Nondurable goods	$10,459	$8,531	$-1,928	-18.4	1,542	-2,128	-1,342
Food product manufacturing	$1,793	$1,789	$-4	-0.2	264	-267	-1
Textile and textile product mills	$921	$338	$-583	-63.3	136	-533	-186
Apparel manufacturing	$500	$224	$-276	-55.2	74	-275	-75
Paper manufacturing	$1,274	$580	$-694	-54.5	188	-539	-343
Printing and related support activities	$1,006	$961	$-45	-4.5	148	-300	107
Petroleum and coal products manufacturing	$280	$265	$-15	-5.4	41	163	-219
Chemical manufacturing	$2,781	$3,385	$604	21.7	410	-506	700
Plastics and rubber products manufacturing	$1,744	$999	$-745	-42.7	257	-804	-198
Wholesale trade	$17,008	$19,608	$2,600	15.3	2,507	3,231	-3,138
Retail trade	$15,895	$15,723	$-172	-1.1	2,343	-1,532	-983
Transportation and warehousing, excluding Postal Service	$5,281	$5,040	$-241	-4.6	778	-391	-628
Air transportation	$769	$807	$38	4.9	113	7	-82
Rail transportation	$261	$163	$-98	-37.5	38	-83	-54

INDUSTRY	2000	2009	2000-2009 ABSOLUTE CHANGE	2000-2009 PERCENT CHANGE	2000-2009 NE	2000-2009 IM	2000-2009 RS
Water transportation	$85	$242	$157	184.7	13	166	-21
Truck transportation	$1,357	$1,275	$-82	-6.0	200	-222	-60
Transit and ground passenger transportation	$868	$798	$-70	-8.1	128	-156	-42
Pipeline transportation	$13	$26	$13	100.0	2	-1	12
Other transportation and support activities	$1,369	$1,194	$-175	-12.8	202	-122	-255
Warehousing and storage	$576	$564	$-12	-2.1	85	55	-152
Information	$10,934	$17,182	$6,248	57.1	1,612	5,607	-971
Publishing including software	$5,597	$8,041	$2,444	43.7	825	1,359	260
Motion picture and sound recording industries	$390	$527	$137	35.1	57	65	14
Broadcasting and telecommunications	$4,130	$6,104	$1,974	47.8	609	2,170	-805
Information and data processing services	$791	$2,546	$1,755	221.9	117	1,828	-189
Finance and insurance	$31,819	$36,700	$4,881	15.3	4,690	4,880	-4,689
Federal Reserve banks, credit intermediation and related services	$9,158	$12,888	$3,730	40.7	1,350	1,645	735
Securities, commodity contracts, investments	$7,965	$9,012	$1,047	13.1	1,174	409	-536
Insurance carriers and related activities	$13,368	$12,137	$-1,231	-9.2	1,970	603	-3,805
Funds, trusts, and other financial vehicles	$1,853	$2,933	$1,080	58.3	273	3,259	-2,452
Real estate and rental and leasing	$42,467	$46,803	$4,336	10.2	6,259	2,077	-4,000
Real estate	$39,467	$44,263	$4,796	12.2	5,817	2,483	-3,504
Rental and leasing services and lessors of intangible assets	$3,016	$2,538	$-478	-15.8	445	-217	-705
Professional and technical services	$30,823	$39,294	$8,471	27.5	4,543	3,977	-49
Legal services	$5,371	$5,681	$310	5.8	792	-774	293
Computer systems design and related services	$5,908	$8,577	$2,669	45.2	871	3,289	-1,491
Other professional, scientific and technical services	$19,258	$25,201	$5,943	30.9	2,838	2,812	293
Management of companies and enterprises	$7,195	$6,750	$-445	-6.2	1,060	-986	-519
Administrative and waste services	$9,049	$8,403	$-646	-7.1	1,334	-266	-1,714
Administrative and support services	$8,166	$7,418	$-748	-9.2	1,204	-227	-1,725
Waste management and remediation services	$866	$985	$119	13.7	128	-35	26
Educational services	$8,530	$8,012	$-518	-6.1	1,257	-812	-964
Health care and social assistance	$23,945	$31,953	$8,008	33.4	3,529	4,023	456
Ambulatory health care services	$8,829	$13,239	$4,410	49.9	1,301	2,375	734
Hospitals and nursing and residential care facilities	$12,653	$16,109	$3,456	27.3	1,865	872	719
Social assistance	$2,489	$2,621	$132	5.3	367	327	-562
Arts, entertainment, and recreation	$2,563	$2,969	$406	15.8	378	-384	412
Performing arts, museums, and related activities	$1,437	$1,753	$316	22.0	212	-151	255
Amusement, gambling, and recreation	$1,117	$1,214	$97	8.7	165	-213	145
Accommodation and food services	$8,398	$7,916	$-482	-5.7	1,238	-1,335	-385
Accommodation	$2,134	$2,186	$52	2.4	315	-349	86
Food services and drinking places	$6,262	$5,732	$-530	-8.5	923	-977	-476
Other services, except government	$8,098	$6,864	$-1,234	-15.2	1,194	-2,667	239

Endnotes

1 The GSP measure for a state economy is equivalent to the national Gross Domestic Product (GDP) measure. The GSP provides an estimate of the value of the final goods and services produced domestically within the boundaries of the state. For a review of GDP concepts and measures, see US Bureau of Economic Analysis, *National Income and Product Account, Gross Domestic Product, Second Quarter 2011,* Washington, D.C., 2011.

2 For an overview of the interrelationships between real output, employment, and productivity levels in the nation and individual states, see Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, *Mass Jobs: Meeting the Challenges of A Shifting Economy*, (Boston, MA: MassINC, 2007).

3 For a review of the supply side GDP model, see Andrew Sum, Neeta Fogg, and Sheila Palma, *The Northeast Region's Economy on the Eve of the Twenty-First Century*, Teresa and H. John Heinz Foundation, Washington, D.C., 2000.

4 See Edward Lampe, *The Massachusetts Miracle*, MIT Press, Cambridge, 1988.

5 For a detailed review of growing debt and other sources of the financial crisis of 2008 and its impacts on the macroeconomic performance of the US economy, see Menzie Chinn and Jeffery A. Frieden, *Lost Decades: The Making of America's Debt Crisis and the Long Recovery*, W.W. Norton and Company, New York, 2011.

6 For additional analysis, see Andrew Sum, "Ringing Out the Old Year and the Lost Decade of 2000-2010," The Huffington Post, December 30, 2010; Andrew Sum, "The Lost Decade: Part Two," The Huffington Post, January 2011. For a detailed review of growing debt and other sources of the financial crisis of 2008 and its impacts on the macroeconomic performance of the US economy, see Menzie Chinn and Jeffery A. Frieden, *Lost Decades: The Making of America's Debt Crisis and the Long Recovery*, W.W. Norton and Company, New York, 2011.

7 For further details on the supply GDP model, see Andrew Sum, Neeta Fogg, with Sheila Palma, *The Northeast Region's Economy on the Eve of the Twenty-First Century: An Appraisal of the 1990s and The Challenges Ahead*, Teresa and H. John Heinz Foundation, Washington, DC, 2000.

8 For a more detailed analysis of the 2000-2005 time periods, see Andrew Sum and others (2007).

9 Payroll employment in both the private and public sectors were used to estimate the level of employment in the state.

10 We call workers who desire a full-time job but only are able to find a part-time job as being "employed part-time for economic reasons," or underemployed.

11 See Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, *Mass Jobs: Meeting the Challenges of a Shifting Economy*, pp. 84-88.

12 Three industries with extremely high changes (over 100%) in either labor productivity or the price deflator were eliminated from the regression.

13 See Gary Becker, *Human Capital: A Theoretical and Empirical Approach*, Third Edition, University of Chicago Press, Chicago, 1996.

14 See Andrew Sum and others, *The State of the American Dream in Massachusetts: 2002*, (Boston, MA: MassINC, 2002).

15 See Andrew Sum, Donna Desrochers, and Neal Fogg, *State Aggregate Production Functions and Human Capital*, Center for Labor Market Studies, Northeastern University, Boston, 1989.

16 CNN News, August 10, 2011.

17 For an introduction to shift-share techniques, see Harvey Armstrong and Jim Taylor, *Regional Economics and Policy*, University of Lancaster, 1985.

Chapter Three

Payroll Job Creation

Introduction

Among the main components of the American Dream has been the ability to secure a stable, well-paying job that allows workers and their families to achieve a middle-class standard of living — including homeownership, post-secondary education, for their children and a retirement free of financial worries. To provide more residents with an opportunity to achieve the American Dream, the state of Massachusetts must create increasing numbers of stable, well-paying jobs to meet the continued growth in the resident labor force and the desire to improve upward economic mobility for lower-income residents.[1]

To assess the state's job creation record over the past decade and place it in proper comparative perspective, we have analyzed data on the numbers of nonfarm wage and salary jobs in the state from 2000 to 2010 and compared changes in these numbers with those of the nation, the other New England states, all other states in the country, and Massachusetts in earlier decades.[2] We also analyze job growth/decline by major industry in the state, present findings of a shift-share analysis of job changes over the past decade, and identify variations in job growth/decline across geographic areas of the state over the past decade. Earlier analysis of geographic variability in job and income growth in Massachusetts in the 1980s and 1990s has already revealed a number of disturbing, widening geographic disparities across the Commonwealth.[3]

Payroll Employment Developments in Massachusetts and the US, 2000-2010

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with
Sheila Palma

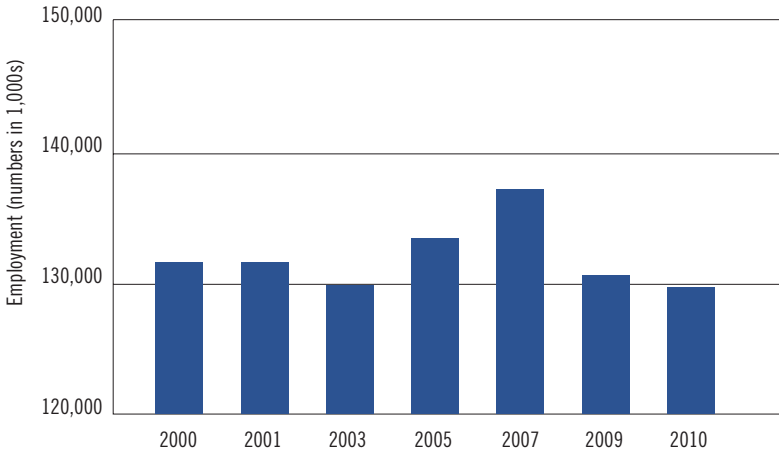
The 2000-2010 decade has been referred to by some economists as the Lost Decade.[4] It was the first time in post–World War II history that the nation ended a decade with fewer payroll jobs than when it began. In addition, GDP per capita grew at the lowest rate of the past eight decades — including the 1930s, when the Great Depression occurred.[5]

In 2000, right near the peak of an economic expansion, the nation had 131 million payroll jobs (Chart 3-1). The US then lost a considerable number of jobs as a result of the 2001 economic recession and the rather lengthy jobless recovery that followed through mid 2003. However, with the 2003-2007 expansion, the nation replaced those lost jobs, surpassing to the 2000 peak by 5.8 million.[6] The deep national economic recession that began in December 2007 and officially ended in June 2009 swept these gains away. From December 2007, the beginning of the recession, to February 2010, when employment bottomed out, the nation lost 8.7 million nonfarm wage and salary jobs (seasonally adjusted). Despite some growth in payroll employment after February, the 2010 annual average payroll employment in the US was still below 130 million, nearly 2 million lower than the level of jobs when the decade began. It was also 7.8 million below the 137.6 million annual average employment level in 2007, the peak year of payroll employment for the decade.

Unfortunately, Massachusetts did not escape the labor market problems of the Lost Decade. As was the case for the nation, changes in employment levels in Massachusetts varied quite widely over the time period. From the very beginning

Chart 3-1:

Trends in Nonfarm Payroll Employment in the US, Selected Years, 2000-2010 (annual averages)



Source: US Bureau of Labor Statistics, Current Employment Statistics

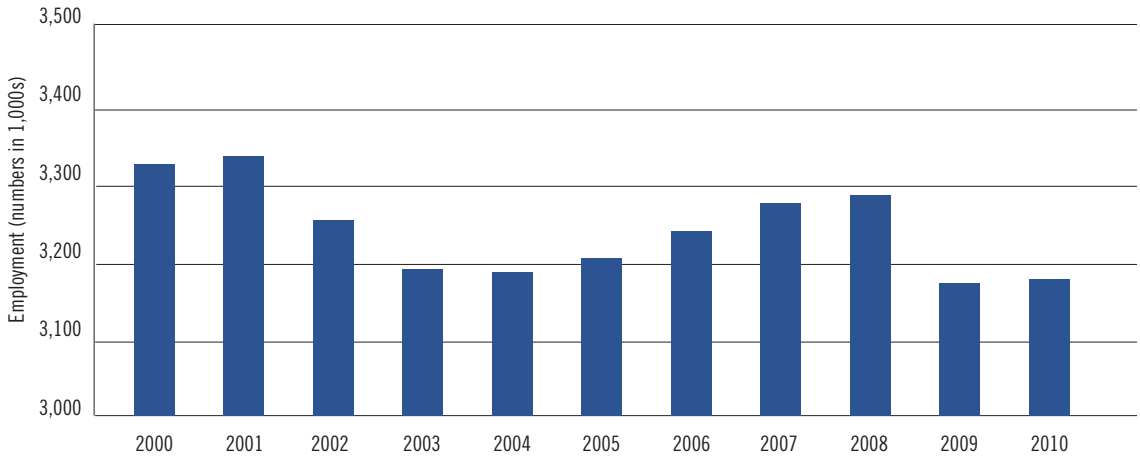
of the decade through the first quarter of 2001, Massachusetts continued the job growth that had begun in 1992 and picked up steam from the mid to late 1990s. Aggregate payroll employment levels peaked during the first quarter of 2001, with 3.4 million jobs. Over the next 10 years, the state would not regain this employment level. Prior to the onset of the Great Recession of 2007-2009, only three states other than Massachusetts had failed to regain their employment levels from the first quarter of 2001 (the industrial Midwest states of Illinois, Michigan, and Ohio).

During the national economic recession of 2001 and the jobless recovery through mid-2003, Massachusetts lost jobs at a faster rate than the nation. The nation lost nearly 2.6 million jobs, or 1.9 percent, from the first quarter of 2001 to August-October of 2003, when aggregate payroll employment bottomed out nationally. Over this same period, the state lost 188,000 jobs, or 5.6 percent of its payroll employment, which was nearly three times as high as the rate of job loss for the entire nation.[7] Massachusetts would continue to lose payroll jobs until early 2004. The total loss from peak employment in the first quarter of 2001 to early 2004 was nearly 200,000 jobs.

Annual average employment levels for Massachusetts for the 2000-2010 decade are displayed in Chart 3-2. The state's employment level peaked in 2001 and then declined through 2004 on an annual basis. Massachusetts added jobs for four consecutive years from 2004 to 2008; however, only 96,000 jobs were gained during this period. In 2008, the state remained nearly

Chart 3-2:

Trends in Payroll Employment in Massachusetts, 2000-2010 (annual averages)



50,000 jobs below the annual average employment level for 2001 and more than 90,000 jobs shy of the first-quarter 2001 peak. All of the gains from 2004 to 2008, and more, were wiped out by the deep job cuts experienced from the late spring of 2008 through 2009 and early 2010. The 2009 annual average employment level of the state was only 3.181 million, the low point for the decade. In 2010, the state began to increase employment, although the gains were quite choppy from month to month. The annual average employment level for 2010 was up 5,000 from 2009, with 3.186 million payroll jobs in the state — 143,000 below its level in 2000.

Table 3-1:

Changes in Wage and Salary Employment in Massachusetts and the US, Selected Time Periods, 1979-2010

TIME PERIOD	MA	US	MASSACHUSETTS'S SHARE OF US EMPLOYMENT CHANGE
1979-1988	534	15,413	3.5%
1988-1992	-340	3,381	0%
1992-2000	531	23,059	2.3%
2000-2010	-143	-1,967	7.3%

Source: Massachusetts Department of Workforce Development and US Bureau of Labor Statistics

Comparisons of Job Growth in the 2000s with that of the 1980s and 1990s

The very poor job-creation performance of the Massachusetts economy over the past decade stands in marked contrast to previous decades. In the two decades prior to 2000-2010, Massachusetts had three distinct periods of job growth and job loss, with the number of jobs growing very substantially in two of the three periods.

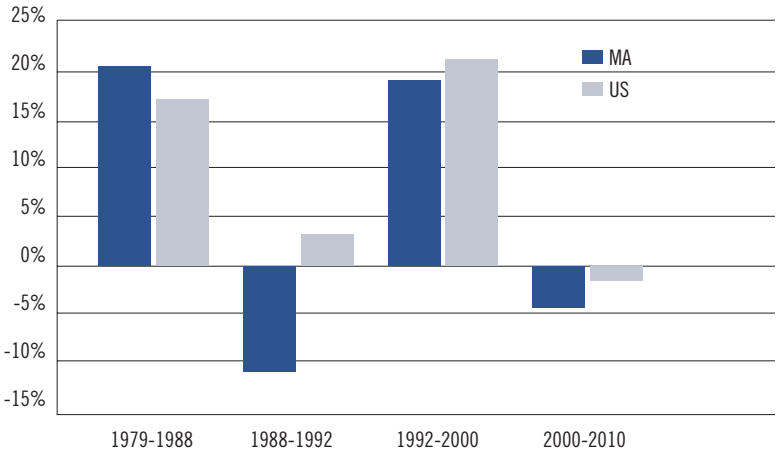
In 1979, Massachusetts had 2.6 million wage and salary jobs. Job growth between 1980 and 1983 was quite variable, as the nation experienced two economic recessions during this four-year period. However, Massachusetts emerged strongly from the 1981-1982 economic recession and added a substantial number of new payroll jobs from 1983 onward. Over the 1979-1988 period, wage and salary employment grew by 534,000, or more than 20 percent (Table 3-1 and Chart 3-3). The state's payroll job growth exceeded that of the nation over this nine-year period, the last time that we would do so. The economic expansion of the 1980s was known as the Massachusetts Miracle, and the state was viewed as a major technological leader and the "wave of the future."[8]

Following this period of very strong and broadly based prosperity, Massachusetts and other parts of New England entered a very severe recession at the end of 1988 that led to substantial wage and salary job losses. Over the 1988-1992 period, the state lost 340,000 wage and salary jobs, representing nearly 11 percent of all the jobs, well above the national average. Massachusetts also experienced high levels of domestic outmigration over this four-year period. By 1993, the state began to slowly gain jobs. It took until 1997 before employment reached its 1988 levels. In the mid 1990s, the state's employers were adding jobs at a steady and strong rate. In 2000, at the end of the 1992-2000 economic expansion, Massachusetts had 3.3 million wage and salary jobs, 531,000 above the number of jobs existing in the state in 1992 — a job growth rate of 19 percent that came close to matching the 21 percent payroll job growth of the nation (Chart 3-3).

As a consequence of the deep job losses during the 1988-1992 recession and the jobless recovery from the 2001 recession, Massachusetts's share of all wage and salary jobs in the nation has declined sharply from a high of nearly 3 percent in 1988 at the end of the state's Economic Miracle. By 1992, our share of payroll jobs had fallen to 2.57 percent, and it would drop to 2.52 percent in 2000 and to a new low of 2.45 percent in 2010 (Table 3-2). If Massachusetts had been able to maintain its 2.98 percent job share from 1988, there would have

Chart 3-3:

Trends in the Growth Rate of Wage and Salary Employment in Massachusetts and the US, Selected Time Periods, 1979-2010



Sources: Massachusetts Department of Workforce Development and US Bureau of Labor Statistics

Table 3-2:

Trends in Wage and Salary Employment in Massachusetts and the US, Selected Time Periods, 1979-2010 (annual averages, numbers in 1,000s)

YEAR	MA	US	MASSACHUSETTS' SHARE OF US EMPLOYMENT
1979	2,604	89,932	2.89%
1988	3,138	105,345	2.98%
1992	2,798	108,726	2.57%
2000	3,329	131,785	2.52%
2010	3,186	129,818	2.45%

Source: Massachusetts Department of Workforce Development and US Bureau of Labor Statistics

been 3.9 million jobs in our state in 2010, nearly 700,000 more than we actually had in that year. The American Dream would have been far more alive in Massachusetts in 2010 if our job creation record had been as strong as it was in the 1980s.

Trends in the Employment Levels of the Individual New England States and all 50 US States, 2000-2010

Over the past decade, the New England region also fared poorly in job creation. The region lost 258,000 payroll jobs between 2000 and 2010, a 3.7 percent decline and more than twice the 1.5 percent decline in payroll employment that occurred for the nation as a whole. Despite accounting for only 5.3 percent of the nation's payroll employment in 2000, the New England region incurred 13 percent of the total loss in US payroll employment over the 2000-2010 decade.

The three southern New England states (Connecticut, Massachusetts, and Rhode Island) accounted for nearly all (95 percent) of the decline in payroll employment in the region over the decade. Prior to the onset of the Great Recession of 2007-2009, employment growth in the region had been modest. Between 2000 and 2007, employment in New England increased from 7.023 million to 7.044 million, a gain of 21,500 jobs representing a growth rate of only 0.3 percent over this seven-year period. New Hampshire had the best job-generating performance, with 25,500 more jobs in 2007 than the state had in 2000. This was followed by gains of 15,900 in Rhode Island, nearly 14,200 in Maine, and 9,700 in Vermont. But while Rhode Island added payroll jobs at a modest pace up to 2007, it then slipped into a severe recession ahead of most of the other New England states. Rhode Island lost 33,800 jobs between 2007 and 2010, representing a near 7 percent job loss over those three years. Connecticut created only 5,000 jobs over this seven-year period. Massachusetts lost nearly 49,000 jobs between 2000 and 2007, but did gain 9,500 between 2007 and 2008, before experiencing the sharp job losses that began in 2008 and continued through 2009.

Findings on job growth developments in each of the 50 states and the District of Columbia from 2000 to 2010 are displayed in Table 3-4. Over the

Table 3-3:

Trends in Payroll Employment in New England, Selected Years, 2000-2010 (annual averages, numbers in 1000s)

STATE/ TOTAL	2000	2007	2008	2010	ABSOLUTE CHANGE, 2000-2010	PERCENT CHANGE, 2000-2010
Connecticut	1,693	1,698	1,699	1,608	-85.2	-5.0
Maine	603	617	617	592	-11.0	-1.9
Massachusetts	3,329	3,280	3,290	3,186	-143.0	-4.3
New Hampshire	622	647	648	622	0.6	0
Rhode Island	476	492	481	458	-17.9	-4.0
Vermont	298	308	307	297	-1.2	-.3
New England	7,023	7,044	7,043	6,765	-258	-3.7

Source: US Bureau of Labor Statistics, Current Employment Statistics

decade, 22 states and the District of Columbia increased the aggregate number of payroll jobs, while 28 states lost jobs. In terms of the percent change in employment over the decade, Massachusetts ranked 45th among the 50 states and District of Columbia. Only six states had worse performances in generating jobs, and they included a neighbor to our south (Connecticut); Mississippi, with much of the loss resulting from Hurricane Katrina; and four industrial Midwest states (Indiana, Illinois, Ohio, and Michigan), which were devastated by manufacturing-job losses that hampered national economic growth over the decade.

Among the six New England states, New Hampshire and Vermont fared the best. They had basically the same number of jobs in 2010 that existed in 2000. New Hampshire experienced a slight increase in the number of payroll jobs (+600), while Vermont had a slight decrease (-1,200). Maine lost close to 2 percent of its jobs over the decade, and Rhode Island lost 3.9 percent, which was the 10th worst performance in the country. The three southern New England states ranked among the 10 states with the steepest percent declines in their employment levels over the 2000-2010 decade. The New England region as a whole lost jobs over the decade.

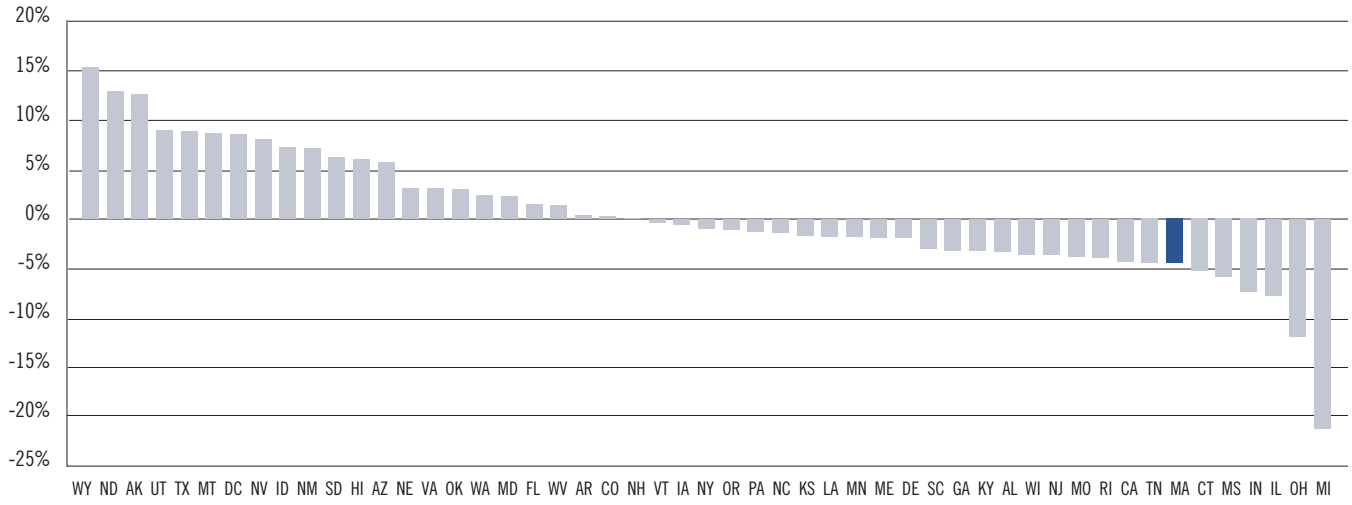
Trends in Employment Across Massachusetts Counties, 2001-2010

Data on employment trends across key regions of the state can help guide future economic development policy. Our earlier report on *The State of the American Dream in Massachusetts, 2002* identified growing disparities in both job creation and income growth across counties. To update findings through 2010, we analyzed information on wage and salary employment growth by county. The county-level data are available from the Quarterly Census of Employment and Wages (QCEW) database, which provides a complete count of all wage and salary jobs covered by the state's unemployment insurance system. A brief explanation of the sources and advantages/disadvantages of the QCEW database appears in the Appendix.

A key advantage of the QCEW database is that it can be used to provide reliable estimates of employment for many substate areas. In this section, changes in payroll employment across Massachusetts counties from 2001 to 2010 will be described and assessed using the QCEW employment estimates. The new database begins with 2001, as that was the year that industry classifications were converted to the North American Industrial Classification System (NAICS). For

Chart 3-4:

Trends in the Payroll Employment Levels of the Nation's 50 States and the District of Columbia, 2000-2010



Source: US Bureau of Labor Statistics, Current Employment Statistics

that reason, this section will describe employment changes from 2001 to 2010 — rather than 2000-2010, as was done in earlier sections.

During the economic expansion of the 1990s, every county in Massachusetts experienced some job growth. The statewide employment growth rate for the 1992-2000 period was 20 percent. However, there were substantial disparities in these job growth rates, as they ranged from lows of 10 percent and 12 percent in Berkshire and Hampden Counties in the western region; to 21 percent to 22 percent in Middlesex, Bristol, and Franklin Counties; and to highs of 51 percent and 54 percent in Dukes and Nantucket Counties, the two small island counties.

Unfortunately, from 2001 to 2010, the state lost 126,716 covered wage and salary jobs, representing nearly 4 percent of the jobs at the beginning of this time period. Again, there were considerable differences across counties in the state. The majority (10 of 14) of Massachusetts counties lost jobs. The only counties to experience job growth over the 2001 to 2010 time period were Plymouth, Hampshire, Dukes, and Nantucket. Among the gainers, growth rates ranged from 1.7 percent and 2.3 percent in Nantucket and Plymouth Counties, respectively, to nearly 5 percent in Hampshire County and 7.5 percent in Dukes County. The total gains in the two island counties amounted to only 634 jobs.

Among the job-losing counties, five of them experienced declines of 5 percent or more over the 2001-2010 period. The largest county in the state, Middlesex, lost more than 46,000 jobs, representing a loss rate of 5.4 percent. Suffolk County, which includes the city of Boston, lost just under 30,000 jobs, or 5 percent of its employment. Hampden County lost nearly 12,000 jobs, or 5.6 percent of its employment. Bristol County lost more than 12,000 jobs, or 5.5 percent of its employment, and Franklin County lost approximately 1,800 jobs, which amounted to a 6.6 percent decline. Hampden, Norfolk, and Essex Counties all had substantial job losses in both absolute and relative terms.

Table 3-4:

Trends in Total Covered Wage and Salary Employment in Massachusetts by County, 2001-2010 (annual averages)

	2001	2010	CHANGE IN LEVEL 01-10	PERCENT CHANGE
Barnstable	89,761	88,524	-1,237	-1.4%
Berkshire	62,192	60,238	-1,954	-3.1%
Bristol	218,818	206,743	-12,075	-5.5%
Dukes	7,181	7,718	537	7.5%
Essex	306,111	294,227	-11,884	-3.9%
Franklin	27,415	25,607	-1,808	-6.6%
Hampden	204,824	193,334	-11,490	-5.6%
Hampshire	56,127	58,864	27,37	4.9%
Middlesex	850,295	804,050	-46,245	-5.4%
Nantucket	5,591	5,688	97	1.7%
Norfolk	327,067	312,828	-14,239	-4.4%
Plymouth	166,471	170,255	3,784	2.3%
Suffolk	602,983	573,076	-29.907	-5.0%
Worcester	321,044	308.983	-12,061	-3.8%
Massachusetts (Total)	3,276,224	3,149,508	-126,716	-3.9%

Source: US Bureau of Labor Statistics, Current Employment Statistics

Employment Changes Across Major Industries in Massachusetts, 2000-2010

Knowledge of changes in the level of job opportunities by major industry is critical to understanding the job creation performance of the state and the fate of workers in selected industrial areas. To track changes in the industrial distribution of jobs in the state over the past decade, we analyzed findings of the CES survey for Massachusetts and the US. The US Bureau of Labor Statistics classifies business establishments into industries using the North American Industrial Classification System (NAICS). NAICS is based on 1,140 industry codes and follows a hierarchical coding system. The 1,140 industries are classified into 20 major industry sectors. In Table 2-5, payroll employment levels in Massachusetts over the past decade are shown for total nonfarm employment, all private sector employment, 18 of the 20 NAICS private industry sectors (with manufacturing split in two sectors), and the public sector.[9] Payroll employment changes for the 19 private industry sectors are ranked from highest to lowest by their growth rates. Over the decade, total private sector payroll employment in Massachusetts fell from 2.894 million to 2.748 million, a loss of nearly 146,000 jobs. All of the payroll job loss was felt in the private sector. Total government employment increased modestly by 2,800 jobs with increases in state and local government offsetting job losses in federal government employment in the state.

Among the state's 19 major industry sectors, only six added jobs over the decade. Health care and social assistance was the single best performing industry sector by a wide margin for the state. The number of payroll jobs in the health care and social assistance sector (many of which are

dependent on government funding) increased from 404,000 in 2000 to 501,000 in 2010, for a gain of 97,000 representing a 24 percent increase. Employment in private educational services also grew strongly over the decade, rising from 141,300 in 2000 to 163,100 in 2010, for an increase of nearly 22,000 jobs, or 15 percent. The two industry sectors that are grouped under "leisure and hospitality" also grew fairly strongly over the decade. Both arts, entertainment, and recreation (up 20.6 percent) and accommodation and food services (up 9.8 percent) boosted employment over the decade. The "other services" sector also grew over the decade (up 6.9 percent), and the professional, scientific, and technical sector increased its employment levels by 10,200 jobs, or 4.3 percent, over the decade. Government employment grew slightly, with gains in state and local government barely offsetting a near 12 percent reduction in federal government employees in Massachusetts over the 2000-2010 period.

THESE DEVELOPMENTS HAVE DESTROYED GOOD-PAYING JOBS FOR BLUE-COLLAR WORKERS.

Among the 13 industry sectors experiencing employment losses over the decade, there were rather wide variations in the magnitude of these job losses. In both absolute and percentage terms, the manufacturing category was by far the biggest loser, with employment in its two sectors declining from 403,100 in 2000 to only 254,000 in 2010 — a loss of 149,100 jobs, or 37 percent. Durable goods industries shed 38 percent of their jobs, while non-durable goods industries lost 34 percent. The decline in manufacturing over the decade was an acceleration of a longer-term decline that began in the late 1980s and has persisted with minor spurts in growth over the past 22 years. These job losses have been especially damaging to Massachusetts since much of this manufacturing work involved the creation of goods for sale outside of the state. The loss of export-oriented jobs created negative multiplier effects throughout the state, both for the industries selling goods and services to manufacturers and to the employees and managers of these firms.

The ability of state residents to achieve the American Dream is dependent on the annual earnings levels of the jobs created by the economy, as well as their distribution across household income and educational attainment groups of workers. The loss of many well-paid jobs in manufacturing and other goods-producing industries in the past decade reduced the real incomes and living standards of many middle-class, blue-collar workers and their families. It also contributed to growing disparities in earnings and incomes across the state.[10]

The state's information industries, another previous growth sector, also experienced substantial employment losses over the decade. The information industry sector is largely composed of firms in book, newspaper, and software publishing; sound and motion picture recording; radio and broadcasting; and telecommunications. Over the past decade, this industry has experienced rapid technological development, thanks to the Internet and other innovations, that have changed the way information is distributed and consumed. Employment in this sector fell from 111,100 in 2000 to 85,500 in 2010. One in every four information sector jobs in Massachusetts were lost over the decade. These developments have destroyed good-paying jobs for blue-collar workers, technicians, professionals, managers, and administrative support workers.

The boom in the nation's housing and commercial property markets from the early part of the decade through 2007 led to sharp increases in the number of wage and salary construction jobs across the US. In Massachusetts, wage and salary employment in construction grew between 2003 and 2006, but at a much more modest pace

Table 3-5:

Change in Employment by Major Industry, Massachusetts, 2000-2010 (numbers in 1000s)

	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
Total nonfarm	3,329	3,186	-143	-4.3%
Total private	2,893	2,748	-145.7	-5.0%
Health care and social assistance	404	501	97.1	24.0%
Arts, entertainment, and recreation	39	48	8.2	20.6%
Educational services	141	163	21.8	15.4%
Accommodation and food services	234	257	23.1	9.8%
Other services	111	118	7.7	6.9%
Professional, scientific, and technical	237	248	10.2	4.3%
Retail trade	362	338	-24	-6.6%
Finance and insurance	183	167	-16	-8.7%
Real estate and rental and leasing	44	39	-4.6	-10.4%
Wholesale trade	139	122	-17	-12.2%
Utilities	12	10	-1.5	-12.5%
Transportation and warehousing	82	72	-10.4	-12.6%
Administrative and support and waste management and remediation	179	155	-24.5	-13.6%
Mining and logging	1	1	-0.2	-14.3%
Construction	129	106	-22.7	-17.6%
Information	111	85	-25.6	-23.0%
Management of companies	75	57	-17.5	-23.3%
Nondurable goods manufacturing	134	88	-46.1	-34.4%
Durable goods manufacturing	268	165	-103	-38.3%
Government	435	438	2.8	0.6%
Federal government	57	50	-6.6	-11.6%
State government	114	122	7.6	6.6%
Local government	263	265	1.9	0.7%

than at the national level. Though not benefiting greatly from the national boom, construction sector employment in our state still fell substantially after the bursting of the housing and commercial property price bubbles. Massachusetts ended the 2000-2010 decade with 22,700 fewer construction jobs, a loss of nearly 18 percent of the payroll positions in this industry. The losses in both the construction and manufacturing industries devastated the state's blue-collar workforce, creating enormous labor surpluses. In 2009, there were 44 unemployed construction workers for every available job opening in this industry and 19 unemployed manufacturing workers for every job opening, representing massive labor surplus problems in each of these industries.[11] Most unemployed blue-collar workers were permanently dislocated from their jobs. A substantial share of construction workers also indicated that they were underemployed (i.e., working part-time but desiring full-time employment), thereby reducing their weekly wages and earnings and reducing economic output in the state.

Job losses were also quite substantial in whole-

sale trade, transportation and warehousing, and administrative support and waste management services. Employment in these industries fell by 12 percent to 13 percent over the decade. Many of the jobs in these industries are low-to-middle-skill. The losses in these industries disproportionately affected workers without four-year college degrees, especially less-educated males who represented a high share of employment in wholesale trade and transportation and warehousing.

The finance and insurance sector had been one of the state's key job-generating sectors prior to the 2000-2010 decade. As a result of the 2001 recession, the relocation of jobs out of Massachusetts by some of the state's larger financial service employers, and the impact of the Great Recession of 2007-2009, employment in this sector fell by 16,000, or nearly 9 percent over the decade. The job losses in these industries have affected workers in higher-education groups, including the state's recent college graduates seeking employment in this sector upon graduation.

A Shift-Share Analysis of Industry Employment Changes in Massachusetts

A more detailed understanding of the sources of employment changes across industries is needed to help make informed public policy decisions aimed at boosting the number and quality of jobs in Massachusetts. Past and current trends in the level of employment in a state can be disaggregated into three components using an analytical tool developed by urban and regional economists known as shift-share analysis.[12] Shift-share analysis allows us to divide a state's employment growth (or decline) into three components:

- National effect: the growth (decline) that would be expected due to the overall growth (decline) of jobs in the national economy.
- Industry mix effect: the job growth/loss due to the industrial composition of jobs at the state level relative to the nation.
- State share effect: the change in the number of state jobs due to changes in the share of jobs in each national industry that were captured by the state over time.

The state share effect can be used to analyze the state's competitive position both overall and in each industry. A positive state share effect in a given industry would indicate that Massachusetts is increasing its share of national employment in that industry. Conversely, a negative state share effect indicates that an industry in Massachusetts has experienced a declining share of national employment in that industry. A negative state share effect is indicative of a deterioration in the state's competitive position in an industry.

In *Mass Jobs: Meeting the Challenges of a Shifting Economy*, shift-share analyses were conducted for three distinct time periods from 1992-2006.[13] The shift-share analysis for the 1992-2000 economic expansion revealed that Massachusetts's job growth over this period fell below the national average due to a declining state share. The favorable industry mix effect partly offset a declining state share of national employment.

A shift-share analysis was also conducted for the time period from the first half of 2001 to the first half of 2004 to capture the source of employment changes resulting from the recession of 2001 and the largely jobless economic recovery through the fall of 2003. Among the key findings of this analysis was that the national growth effect accounted for only about one-third of the jobs lost during this time period and that Massachusetts had a favorable industry mix effect. The bulk of the jobs lost during this period were due to declining state shares of national employment within many industries. Among the 19 major industrial sectors analyzed, 14 had negative state share effects, with large losses in manufacturing, professional and technical services, finance and insurance, administrative and waste management, and information services.

The third time period analyzed in this earlier

report focused on employment changes occurring between January-June of 2004 and January-June 2006. The state gained 43,573 jobs during this time period. The gains were entirely due to a national growth effect and a slightly favorable industry mix effect. The national growth effect by itself should have added over 112,000 jobs during this two-year period. Unfortunately, a negative state share effect of 70,000 jobs wiped out a major portion of those gains. From 2000 through 2006, the shift-share analysis revealed that Massachusetts industries were losing their competitive advantage.

How did the state fare over the entire 2000-2010 decade? The following analysis will bring up to date this earlier analysis and determine the sources of employment growth and decline in Massachusetts over this period.

The findings of the shift share analysis for Massachusetts by major industry in 2000-2010 are displayed in Table 3-6. The national share effect reveals that 95,500 jobs would have been expected to be lost due to the 3.3 percent decline in private sector employment nationally — or about 50,000 fewer jobs than the actual private sector loss of 145,000 payroll jobs in our state. A state's actual performance may differ substantially from the country if it has a considerably different industry mix or a declining national share. Over the past decade, Massachusetts had a favorable industry mix. Nationally, the professional, scientific, and technical industries, health care and social assistance industries, and education industries fared better than most other industries in terms of employment growth over the 2000-2010 decade. These industries are quite large in Massachusetts. As a result, the shift-share analysis finds that Massachusetts's favorable industry mix would have added 75,700 jobs in the state, with the above three industries gaining the most but also with gains in finance and insurance, management of companies and enterprises, leisure and hospitality industries, and "other" services. The favorable industry mix could have offset a substantial share of the loss due to the national decline in jobs. The gains in these industries should have offset the losses in construction, manufacturing, information, and the trade industries due to declining national employment. However, the state-share effect for Massachusetts was -125,500 jobs, more than offsetting the favorable industry mix. Massachusetts had a positive state-share effect in only four industries. They were construction, information, arts/entertainment/and recreation, and other services.

The 2000-2010 shift-share analysis again revealed substantial negative state share effects in many of Massachusetts' leading industries. The education industry sector had a negative share effect of -23,200 jobs, followed by -20,500 in health care and social assistance, -20,300 in management of companies, -16,400 in the finance and insurance industry sector, and -15,400 in the professional, scientific, and technical industry sector. If Massachusetts had maintained its share of national jobs in these industry sectors, then the state would have considerably reduced the magnitude of its actual job loss. The reasons for our declining competitive advantage go beyond the scope of this report. Further research on these issues is clearly needed.

MASSACHUSETTS HAD A FAVORABLE INDUSTRY MIX.

The Links Between the Educational Attainment of the Employed Population and Employment Growth Over the 2000-2010 Decade

In the previous chapter on economic growth developments over the past decade, we examined the links between the educational attainment of

Table 3-6:

Shift-Share Analysis of Massachusetts Wage and Salary Employment by Major Industry, 2000-2010 (numbers in 1000s)

INDUSTRY	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE	NATIONAL SHARE EFFECT	INDUSTRY MIX EFFECT	STATE SHARE EFFECT
Total private	2,893.9	2,748.2	-145.7	-5.0%	-95.5	75.7	-125.5
Mining and logging	1.4	1.2	-0.2	-14.3%	0.0	0.3	-0.4
Construction	129.1	106.4	-22.7	-17.6%	-4.3	-19.7	1.3
Durable goods manufacturing	268.9	165.9	-103	-38.3%	-8.9	-85.3	-8.8
Nondurable goods manufacturing	134.2	88.1	-46.1	-34.4%	-4.4	-36.1	-5.6
Wholesale trade	139.5	122.5	-17	-12.2%	-4.6	-6.6	-5.8
Retail trade	362.7	338.7	-24	-6.6%	-12.0	-8.6	-3.4
Transportation and warehousing	82.5	72.1	-10.4	-12.6%	-2.7	-1.5	-6.2
Utilities	12	10.5	-1.5	-12.5%	-0.4	-0.6	-0.5
Information	111.1	85.5	-25.6	-23.0%	-3.7	-24.5	2.6
Financial and insurance	183.8	167.8	-16	-8.7%	-6.1	6.5	-16.4
Real estate and rental and leasing	44.3	39.7	-4.6	-10.4%	-1.5	-0.1	-3.0
Professional, scientific, and technical	237.8	248	10.2	4.3%	-7.8	33.5	-15.4
Management of companies	75.2	57.7	-17.5	-23.3%	-2.5	5.3	-20.3
Administrative and support and waste management and remediation	179.8	155.3	-24.5	-13.6%	-5.9	-11.0	-7.6
Educational services	141.3	163.1	21.8	15.4%	-4.7	49.6	-23.2
Health care and social assistance	404.2	501.3	97.1	24.0%	-13.3	130.8	-20.5
Arts, entertainment, and recreation	39.8	48	8.2	20.6%	-1.3	4.0	5.5
Accommodation and food services	234.7	257.8	23.1	9.8%	-7.7	31.9	-1.2
Other services	111	118.7	7.7	6.9%	-3.7	7.9	3.4

workers and the economic growth rates and productivity growth rates for the 50 states. A similar analysis can be conducted to determine the relationship between educational attainment and employment growth over the 2000-2010 decade. Did states with higher shares of college-educated workers fare better than less-educated states on employment growth?

In Table 3-7, the 10 states with the largest shares of workers with an associate's or higher degree, and with a bachelor's or higher degree, are displayed. Nine of the 10 states with the largest share of associate's or higher degree holders among its employed population also made the list of top 10 states with a bachelor's or higher degree. The one state that did not was Washington, and it was replaced by Virginia, which had the 6th highest share of bachelor's degree holders among its employed population. Massachusetts ranked first on each of these two educational attainment measures, with nearly 55 percent of its employed residents holding an associate's or higher degree and 46 percent having a bachelor's or higher degree. Connecticut, New Hampshire, and Vermont were the three other New England states to make the top 10 on these two measures.

We also ranked all 50 states in terms of their payroll employment and household employment growth rates from 2000-2010. None of the 10 states with the largest share of workers with an associate's or higher degree made the top 10

list when ranked on payroll employment growth (Table 3-8). Only two of these states with the largest share of college-educated workers made the top 20 in payroll job growth rates. Two of them actually fell into the bottom 10 states ranked by payroll employment growth. The best-educated states were more likely to fall in the bottom 10 on payroll employment growth than in the top 10, implying a very weak or no statistical relationship between educational attainment and payroll job growth.

A slightly stronger connection was found between the educational attainment of the employed and household employment growth. Two of the 10 states with the highest shares of associate's or higher degree holders among its employed ranked in the top 10 on household employment growth over the 2000-2010 decade. A total of five of these states ranked among the top 20, and none ranked among the bottom 10 on household employment growth, which includes self-employment and independent contractors.

In addition to comparing the rankings of the 50 states on these educational attainment and employment growth measures, we also estimated Pearson correlation coefficients for these variables (Table 3-9). We found a small, slightly negative correlation (-.166) that was not statistically significant between payroll employment growth rates and the share of the employed with an associate's or higher degree. The correlation coefficient for payroll job growth rates and share of the employed with a bachelor's degree or higher also was negative (-.238) and significant. There was a relatively modest but negative linear relationship between these two variables, implying that a rise in the share of college-educated workers in the state would be associated with a slower employment growth rate. This is a very disappointing result that needs further exploration.

On the household employment growth rate measure, there also was a small, slightly negative correlation between the share of the employed with a college degree and growth in household employment. The small correlation coefficients, which were not statistically significant, imply that there is no relationship between the two variables. The findings indicate that having a highly educated employed population is not sufficient by itself to generate jobs in the state. On average, the best-educated states had very mediocre job growth performances relative to the other states.

Table 3-7:

The 10 States with the Highest Shares of Workers with an Associate's or Higher Degree and Bachelor's or Higher Degree in 2010

TOP 10 STATES	SHARE OF EMPLOYED WITH AN ASSOCIATE'S OR HIGHER DEGREE	TOP 10 STATES	SHARE OF EMPLOYED WITH A BACHELOR'S OR HIGHER DEGREE
Massachusetts	54.9	Massachusetts	45.8
Minnesota	51.9	Colorado	42.1
Colorado	50.2	Connecticut	41.7
Connecticut	49.7	Maryland	41.5
New Hampshire	49.3	New Jersey	40.5
Maryland	49.0	Virginia	39.5
New York	48.1	New York	38.1
New Jersey	48.0	New Hampshire	37.8
Vermont	47.1	Minnesota	36.5
Washington	47.0	Vermont	36.4

Table 3-8:

The Employment Growth Performance Between 2000 and 2010 of the 10 States with the Highest Shares of the Employed with an Associate's or Higher Postsecondary Degree in 2010

EMPLOYMENT MEASURE	NUMBER OF STATES IN TOP 10	NUMBER OF STATES IN TOP 20	NUMBER OF STATES IN BOTTOM 10
Payroll employment growth rate	0	2	2
Household employment growth rate	2	5	0

Table 3-9:

Links Between 2000-2010 Growth Rates of Payroll and Household Employment in the 50 US States and the Share of the Employed with a Postsecondary Degree in Each State in 2010

EMPLOYMENT MEASURE	CORRELATION BETWEEN SHARE OF WORKERS WITH AN ASSOCIATE'S DEGREE OR HIGHER AND THIS EMPLOYMENT MEASURE	CORRELATION BETWEEN SHARE OF WORKERS WITH A BACHELOR'S OR HIGHER DEGREE AND THIS EMPLOYMENT MEASURE
Payroll Employment Growth	-.166	-.238
Household Employment Growth	-.014	-.019

Summary and Conclusion

Over the last decade, the decline in goods-producing jobs and increases in service industry jobs continued to change the industrial and occupational structure of employment in Massachusetts. The state's transition toward a "boutique economy" has created highly specialized jobs that often pay well, but it has left fewer opportunities for those without the educational backgrounds and skills to compete for these positions.[14] These changes not only affected the state's labor productivity and gross state output, but also the weekly and annual earnings of its workers. The decline in goods-producing jobs has disproportionately affected males in the state, especially those without a college degree. It has substantially reduced middle-skilled employment opportunities, making it far more difficult for younger males with less than a college degree to achieve the American Dream. The lack of broader job growth across more industries and occupations has limited the ability for more of the state's residents to move up the economic ladder.

Despite having the highest share of college graduates among our employed in both 2000 and 2010, Massachusetts has struggled to add payroll jobs. Over the 2000-2010 decade, only six states in the US fared worse in terms of payroll job growth. Among the 10 states with the best educated employed population in 2010, not one of them ranked in the top 10 in payroll job growth over the 2000-2010 decade and only two (Washington and Maryland) ranked in the top 20 states. Two of these best educated states ranked among the bottom 10 states in payroll job growth between 2000 and 2010. The best educated states were overwhelmingly mediocre in job creation and, in fact, were more likely to rank near the bottom among the 50 states on payroll job growth than rank near the top. These findings indicate that having a highly educated workforce alone is not sufficient for generating strong job growth.

Appendix:

The Quarterly Census of Employment and Wages (QCEW) database is jointly maintained by the. US Bureau of Labor Statistics and state employment security agencies such as the Massachusetts Department of Labor and Workforce Development. The QCEW employment data are often viewed as being more reliable than the Current Employment Statistics (CES) employment data because employment counts are based on actual employment tax records submitted by employers rather than being based on a monthly sample survey of employers. Ultimately, the CES employment results are benchmarked back to the QCEW. The major drawback of the QCEW data is the six- to nine-month lag before preliminary employment estimates are made available to the public. Data on the 2010 annual average employment levels first became available in early August 2011.

Endnotes

1 For earlier reviews of the elements of the American Dream, see Andrew Sum and others, *The State of the American Dream in Massachusetts, 2002.* (Boston, MA: MassINC, 2002).

2 The estimates of wage and salary jobs in the state and nation are based on the monthly Current Employment Statistics program, which provides a count of the number of jobs on the payrolls of private-sector firms, including nonprofit agencies, and government agencies in the state. The payroll jobs count excludes the self-employed, those working as independent contractors or off the books, and unpaid workers in family firms. It is a count of jobs by the location of the firm, not of the worker. Persons living in other states who commute into Massachusetts to work in a payroll job are included in the count, but Massachusetts residents commuting across state lines to work in other states are not included in the CES count for Massachusetts. For further information on differences in employment concepts between the CES and CPS surveys, see Appendix in the following chapter.

3 See Andrew Sum and others (2002).

4 A recent set of articles on key political, social, and economic features of the Lost Decade was recently published in the September 2011 edition of *The American Prospect*. Also see Andrew Sum and others, *The Deterioration in the Labor Market Fortunes of America's Young Adults During the Lost Decade of 2000-2010*, prepared for The Children's Defense Fund, Washington, D.C., June 2011.

5 Andrew Sum, "Ringing Out the Old Year and the Lost Decade of 2000-2010," *The Huffington Post*, December 30, 2010; Andrew Sum, "The Lost Decade: Part Two" *The Huffington Post*, January 2011.

6 The new payroll jobs that were gained between 2003 and 2007 were not in the same industries or geographic areas in which the jobs were lost between 2000 and 2003.

7 For a review of these findings and changes in the employment levels and industrial/occupational composition of employment in Massachusetts over the 2000-2006 time period, see Andrew Sum and others, *Mass Jobs: Meeting the Challenges of a Shifting Economy* (Boston, MA: MassINC, 2007).

8 See David R. Lampe, *The Massachusetts Miracle*, The MIT Press, Cambridge, MA, 1988.

9 The missing sectors are "unclassified" and agriculture, forestry, fishing and hunting, a small employer in the state.

10 See Andrew Sum and others, *The Road Ahead* (Boston, MA: MassINC, 1998) and Andrew Sum, Paul Harrington, and Neeta Fogg, *The State of the American Dream in Massachusetts, 2002* (Boston, MA: MassINC, 2002).

11 For earlier assessments of the labor surplus problems in Massachusetts in 2009 and the blue collar labor market depression, see Andrew Sum and others, *An Assessment of Conditions in Massachusetts Labor Markets in 2009: Comparisons of the Numbers and Characteristics of Job Vacancies With the Pool of Unemployed and Underutilized Labor in the Commonwealth and Their Implications for Workforce Development Policy*, prepared for the Workforce Solutions Group, April 2010; Andrew Sum and others, "The Depression in Blue Collar Labor Markets in Massachusetts and the US: Their Implications for Future Economic Stimulus and Workforce Development Policies," *Massachusetts Benchmarks*, 13(1) (2011).

12 For a review of the methodology and purposes of the shift-share analysis, see John M. Levy, *Urban and Metropolitan Economics*, Virginia Polytechnic Institute and State University, 1985; Harvey Armstrong and Jim Taylor, *Regional Economics & Policy*, University of Lancaster, 1985; Walter Isard, *Methods of Regional Analysis: An Introduction to Regional Science*, The MIT Press, Cambridge, MA, 1960.

13 Sum and others (2007).

14 The term "boutique industries" was coined by the authors of *Mass Jobs: Meeting the Challenges of a Shifting Economy.*

Chapter Four

Changes in the Composition of the Workforce

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Introduction

Labor markets in Massachusetts over the past few decades have performed quite variably in generating job opportunities for residents. Knowledge of the changes in the numbers of employed residents, who got jobs and who didn't, and changes in the occupational characteristics of these jobs is indispensable for gauging progress of the state's residents in achieving key elements of the American Dream.

As the previous chapter has shown, the state failed to create any net new payroll wage and salary jobs over the past decade, but some residents might be able to compensate for this failure by becoming self-employed or independent contractors, or by working in the informal sector. This chapter is devoted to an analysis of overall employment developments among working-age residents (16 and older) over the past decade together with comparisons for the US and all other states over the same time period. We will track employment development for Massachusetts workers in gender, age, and educational subgroups and in major occupational groups over the past decade. We also will present findings of a set of simulations of the numbers of 16-to-54-year-old residents who would have been employed and those who would have held full-time jobs in 2010 if the state had been able to maintain the employment rates for each gender/age group that had prevailed in 2000. We will begin by describing the employment concepts, measures, and data sources underlying all of the employment estimates appearing in this chapter.

Employment Concepts, Measures, and Data Sources

All of the state and national employment estimates in this chapter are based on the findings of the monthly Current Population Survey (CPS), a national household survey conducted by the US Census Bureau for the US Department of Labor's Bureau of Labor Statistics. It is the source of the monthly estimates of the employed, unemployed, and underemployed populations, and the monthly unemployment rate. The CPS survey includes interviews with a representative sample of households in each state and the District of Columbia. Findings of the 12 monthly surveys for each year are used to generate estimates of the annual average number of employed persons in the nation, the state of Massachusetts, and the other 49 states.

The employment definition underlying the CPS employment measure is quite comprehensive.[1] The universe for the survey is all working-age persons (16 and older) who are members of the civilian, non-institutional population. Residents who are serving in a branch of the armed forces or are inmates of jails, prisons, homeless shelters, mental hospitals, and nursing homes are excluded from the survey. The employed are all persons who:

- Worked for pay or profit in the reference week of the survey[2]
- Worked without pay for 15 or more hours in a family-owned business
- Had a job from which they were temporarily absent for reasons such as vacation, temporary illness, weather, or an industrial dispute at the workplace

The CPS employment measure is broader in key respects than the CES payroll employment measure.[3] It includes wage and salary workers, the self-employed, and unpaid family firm workers. Persons holding multiple jobs at the time of the survey are counted only once in the CPS survey.[4] The CPS estimate of the employed includes independent contractors who are not on the official payrolls of the firm for whom they are working and some persons who work off the books, provided they report such employment to the CPS interviewer. At the state level, the CPS employment count is based on the residence of the worker, not the geographic location of the firm. A New Hampshire wage and salary worker who commutes to work in Massachusetts is counted as employed in New Hampshire by the CPS survey but would be counted as employed in Massachusetts by the monthly CES payroll survey. Similarly, a Massachusetts resident who commutes to work in Rhode Island is treated as an employed worker of Massachusetts by the CPS but would be classified as a Rhode Island employee in the CES survey. A description of CPS/CES differences in employment concepts and the sources of differences in their employment decline estimates over the past decade is presented in the appendix to this chapter.

The monthly CPS survey also collects information from respondents on their demographic characteristics (age, gender, race/ethnic group), their educational backgrounds and school enrollment status, and the occupational duties and titles of their jobs.[5] The last set of information is used by US Census Bureau researchers to assign SOC-based occupational titles to their jobs. Our analysis will provide employment growth/decline estimates for gender, age, educational attainment, and occupational groups of workers in our state and the nation over the past decade. Employment outcomes for Massachusetts residents over the 2000-2010 decade varied quite widely across demographic, educational, and occupational subgroups of the population.

Growth in Civilian Employment in Massachusetts Over the Decades

Similar to findings from the payroll survey of wage and salary jobs, growth in the number of employed working-age adults (16 and older) in Massachusetts also has been characterized by substantial variability over the past few decades. During the Massachusetts Miracle decade of the 1980s, total civilian employment grew from 2.731 million in 1979 to 3.041 million in 1988 — a gain of 310,000, or 11.3 percent, in nine years (Chart 4-1). Over the following four years of steep economic decline, however, the state experienced a very sharp drop in the number of employed residents, with total employment falling by nearly 180,000 between 1988 and 1992. The following eight years were marked by steady and strong growth in employment, with the number of employed civilians increasing by 376,000 or 13 percent. This strong growth in employment, combined with limited labor force growth, helped push the state's unemployment rate down to 2.7 percent in 2000, the lowest rate in the state since CPS unemployment data become available in the late 1960s.

During the past decade, the state experienced no net growth in civilian employment. The number of employed residents fell during the early years of the decade, which were marked by the national recession of 2001 and a largely jobless recovery from 2002 to 2003. Civilian employment in Massachusetts in 2003 was still 21,000 below its 2000 annual average level. Employment growth returned from 2004 to 2007, when civilian employment reached 3.253 million, but then fell by 53,000 over the following three years as the Great Recession took hold in Massachusetts, followed by a largely jobless recovery through early 2010. During 2010, annual average employment in Massachusetts stood at only 3,200,000 million, which was 38,000 below its estimated level at the start of the decade. This marked the first decade in the past 60 years, dat-

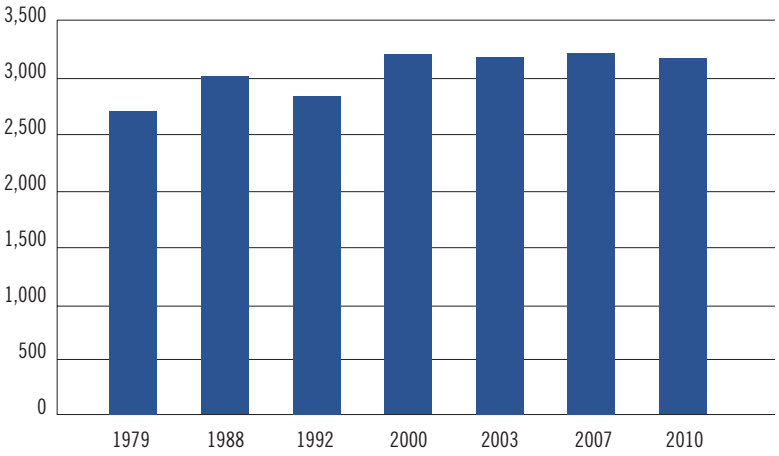
ing back to the 1950 Census, that the state failed to increase the number of employed residents. Total civilian employment did, however, fall to a lower extent than payroll employment over the decade due to a combination of factors, including increased self-employment, a rise in out-commuters to jobs in other states, and increased employment of independent contractors and informal workers (off-the-books workers).[6]

A decline in civilian employment over time can be generated by a variety of demographic developments and changing labor force behaviors, including lower rates of labor force participation and higher unemployment rates. (Each of the latter two factors would lower the employment/population ratio, or E/P, of state residents.) A significant demographic development in Massachusetts was that during the first half of the decade, the state experienced a very high rate of domestic net out-migration (i.e., more residents left Massachusetts to move to other states than came here to live from other states).[7] From July 2000 to July 2006, net domestic out-migration was equal to 286,000, or 4.6 percent of the state's resident population. Natural increase in the population (births in excess of deaths) and foreign immigration allowed the state's total resident population to rise, and the working-age population (16 and older) increased by slightly over 100,000, or 2 percent, between 2000 and 2006, well below the national average change of nearly 6 percent over the same time period (Chart 4-2). Over the following four years (2006-2010), the state's working-age population grew at a faster rate as domestic out-migration slowed, then actually reversed course at the end of the Great Recession and its aftermath. The working-age population rose to 5.291 million in 2010, an increase of slightly more than 7 percent over the decade.

But by the end of the decade, the state's overall civilian labor force participation rate had declined from 67.6 percent to 66.1 percent, a drop of 1.5 percentage points, with all of the loss taking place among men (Table 4-1). The 8.5 percent unemployment rate in 2010 was substantially higher than at the beginning of the decade, when the state's 2.7 percent unemployment rate was fourth lowest in the nation. The combination of a declining labor force participation rate and a rising unemployment rate pushed the state's E/P ratio down from 65.6 percent in 2000 to 60.75 percent in 2010, a substantial decline of 5 full per-

Chart 4-1:

Trends in Civilian Employment in Massachusetts, Selected Years, 1979 to 2010 (annual averages, numbers in 1000s)



Sources: US Bureau of Labor Statistics, Geographic Profiles of Employment and Unemployment, 1979, 1988, 1992, Selected Years 2003 to 2010; Monthly CPS public use files, 2000, tabulations by authors

Chart 4-2:

Trends in the Civilian Working-Age Population (16+) of Massachusetts, Selected Years, 2000–2010 (numbers in 1000s)

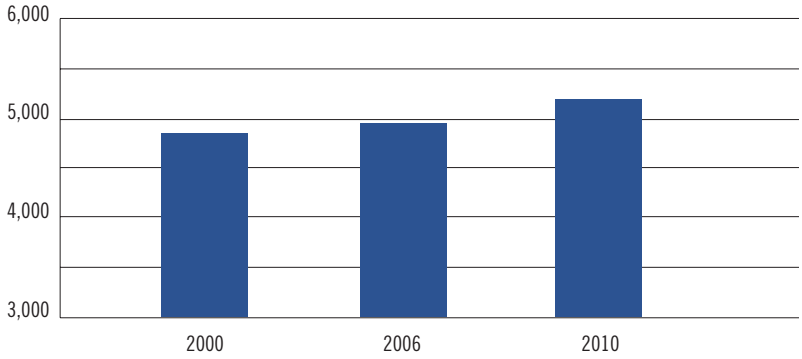


Table 4-1:

Trends in Civilian Labor Force Participation Rates, Unemployment Rates, and Employment/Population Ratios of Working-Age Adults (16+) in Massachusetts, 2000-2010

MEASURE	2000	2010	PERCENTAGE POINT CHANGE
Labor Force Participation Rate	67.6%	66.1%	-1.5%
Unemployment Rate	2.7%	8.5%	5.8%
E/P Ratio	65.6%	60.5%	-5.0%

Table 4-2:

Trends in the Ranking of the Employment/Population Ratio of Massachusetts Adults Across the 50 States

YEAR	EMPLOYMENT/POPULATION RATIO	STATE RANK
1979	62.5%	19th
1988	66.2%	12th
2000	65.6%	29th
2010	60.5%	18th (tied with Texas)

centage points. The relative drop in the E/P ratio exceeded the percent gain in the resident working-age population, thereby pushing down the number of employed persons by about 1 percent.

The E/P ratio of the state has not exhibited any upward movement since 1988, when it stood at 66.2 percent at the height of the state's labor market boom and ranked 12th highest in the nation (Table 4-2). After declining sharply from 1988 to 1992, the E/P ratio edged back up to 65.6 percent in 2000 but ranked only 29th highest among the 50 states. Although the state's E/P ratio fell very sharply by the end of the decade in 2010, so did the E/P ratios of many other states. Thus, Massachusetts's ranking among the 50 states actually improved over the decade from 29th in 2000 to 18th in 2010. Among the 15 most populous states in the latter year, Massachusetts's E/P ratio ranked third highest.[8]

Comparisons of Civilian Employment Growth in the National Context

The state's employment generating performance over the past decade was quite poor relative to its own job creation record in prior decades and in comparison with that of the nation and most other states. Table 4-3 displays findings on the state's share of net new national employment growth over the past three decades. During the decade of the Massachusetts Miracle (1979-88), the state economy generated an additional 310,000 jobs for its residents, equivalent to just under 2.0 percent of the 16.1 million new employment opportunities across the entire nation over the same time period.

The labor market boom in Massachusetts came to an abrupt end at the end of 1988, and over the following four years, the state shed a considerable number (180,000) of jobs for its residents.[9] During the economic boom from 1992 to 2000, the number of employed residents in Massachusetts jumped by 376,000, accounting for about 2 percent of the 18.4 million gain in employment across the entire nation (Table 4-3).[10] Over the past decade, however, the state failed to capture any share of the 2.173 million gain in civilian employment across the country. As noted earlier, this marked the first decade in the post–World War II era where aggregate civilian employment in Massachusetts failed to grow.

Massachusetts's employment growth performance in the past decade also ranked poorly relative to that of most other states. Our -1.2 percent employment growth rate ranked 14th lowest among the 50 states, just slightly above that of Connecticut's -1.3 percent (Table 4-4). This job performance record was somewhat better than the -4.5 percentage point change in payroll employment in our state. Four of the six New England states (Connecticut, Maine, Massachusetts, and Rhode Island) fell in the bottom 14 performers. Two New England states (New Hampshire and Vermont) added jobs. The top 10 performers

in the nation, which were dominated by states in the Rocky Mountain Region and the Pacific Coast (Alaska, Washington), had employment creation rates ranging from 7 percent to 18 percent over the decade.

Trends in Male and Female Employment Over the Past Decade

The economic fate of Massachusetts men and women in the labor market have varied quite substantially over the past decade. This finding stands in strong contrast to that for the employment boom period from 1992-2000, when both men and women achieved very strong gains in their employment levels (Table 4-5). Between 1992 and 2000, the number of employed men rose from 1.487 million to 1.702 million — a rise of 215,000, or between 14 percent and 15 percent. The ranks of employed women increased by 161,000, or 12 percent, over the same time period.

Over the past decade, however, Massachusetts males have fared far more poorly than women, primarily due to their steep job losses over the 2007-2010 period (Table 4-5 and Chart 4-3).[11] From 2000 to 2007, male employment according to the CPS household survey is estimated to have risen by 24,000, but over the following three years of the Great Recession and its aftermath, male employment declined by 105,000 while employment of women actually increased. For the decade as a whole, male employment declined by 81,000 while female employment increased by 43,000 (see Charts 4-3 and 4-4).

The 4.8 percent decline in male employment over the past decade meant that Massachusetts ranked 44th lowest among the 50 states (Table 4-6). In contrast, female employment increased by 43,000, or 2.8 percent, and ranked 24th highest, approximately in the middle of the state distribution of female employment growth rates. Clearly, the extremely poor employment situation among the state's males was responsible

Table 4-3:

Civilian Employment Growth in Massachusetts and the US and the State's Share of National Employment Growth, Selected Years, 1979-2010 (numbers in 1000s)

TIME PERIOD	MA	US	MASSACHUSETTS SHARE OF US EMPLOYMENT GROWTH
1979-1988	310	16,144	1.9%
1988–2000	197	21,922	0.9%
1992–2000	376	18,399	2.0%
2000–2010	-38	2,173	<0%

Sources: Geographic Profiles of Employment and Unemployment, 1979, 1988, 2010; CPS monthly public use files, 2000, tabulations by authors; US Bureau of Labor Statistics, CPS employment statistics

Table 4-4:

14 States with the Lowest Civilian Employment Growth Rates and the 10 States with the Highest Civilian Employment Growth Rates, 2000-2010

FOURTEEN LOWEST		TEN HIGHEST	
STATE	GROWTH RATE	STATE	GROWTH RATE
Michigan	-13.5%	Arizona	18%
Mississippi	-7.6%	Texas	12%
West Virginia	-6.4%	Alaska	12%
Indiana	-6.1%	Nevada	12%
Ohio	-4.4%	Colorado	9%
Maine	-4.0%	Idaho	9%
Illinois	-3.6%	Washington	8%
Missouri	-3.4%	Wyoming	8%
Alabama	-3.2%	Florida	7%
Kentucky	-2.6%	Virginia	7%
Rhode Island	-2.0%		
New Jersey	-1.4%		
Connecticut	-1.3%		
Massachusetts	-1.2%		

Sources: 2000 and 2010 monthly CPS surveys, public use files, tabulations by authors

Table 4-5:

Trends in Total Civilian Employment (16+) in Massachusetts by Gender, Selected Years, 1988-2010 (annual averages, numbers in 1000s)

	1988	1992	1994	2000	2007	2010	CHANGE 1988–2010	CHANGE 2000–2010
All	3,041	2,862	2,988	3,238	3,253	3,200	159	-38
Men	1,610	1,487	1,586	1,702	1,726	1,621	11	-81
Women	1,431	1,375	1,402	1,536	1,528	1,579	148	43

Sources: 1988, 1992, 1994, 2007, and 2010, Geographic Profiles of Employment and Unemployment, US Bureau of Labor Statistics; Monthly CPS Surveys, public use files, 2000, tabulations by authors

Chart 4-3:

Trends in Male Employment in Massachusetts, Selected Years, 1988-2000 (annual averages, numbers in 1000s)

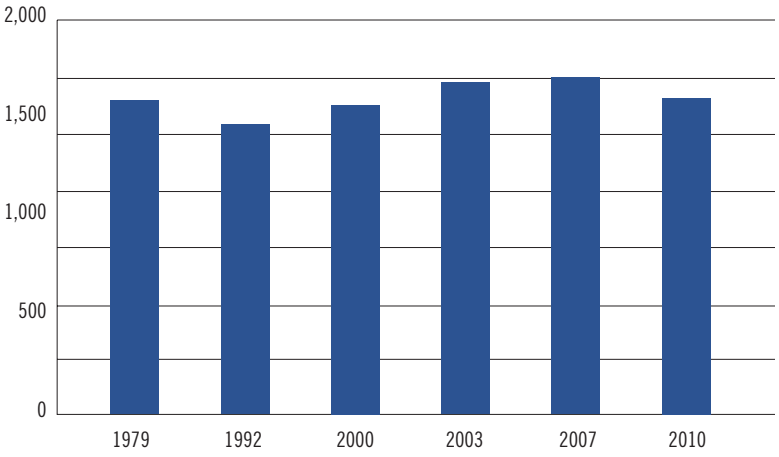
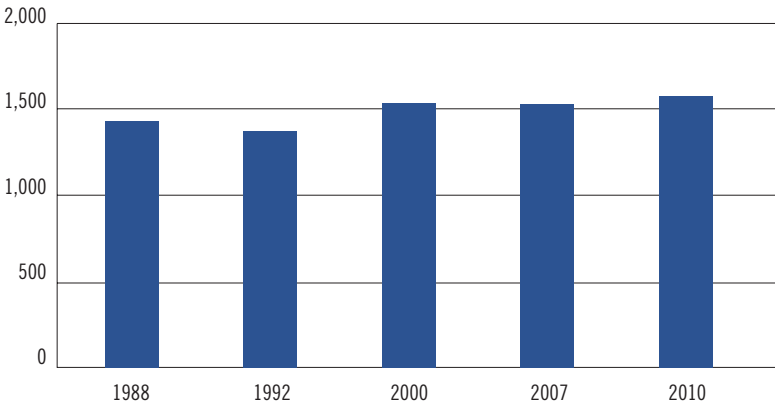


Chart 4-4:

Trends in Female Employment in Massachusetts, Selected Years, 1988-2000 (annual averages, numbers in 1000s)



for the relatively weak employment growth rate for the state as a whole. The negative 1.2 percent growth rate for total civilian employment placed Massachusetts 37th among the 50 states over the past decade.

Gender Employment Developments Over the Great Recession and Its Early Aftermath, 2007–2010

Overall employment in the state held up until the early spring of 2008. Both civilian employment and payroll employment took big hits in our state and the nation during 2008 and 2009. The nation's goods-producing industries, especially construction and manufacturing, and other intensive employers of blue-collar workers (e.g., transportation) shed workers at above-average rates.[12] Nationally, males incurred a disproportionate share (70 percent) of the job losses between 2007 and 2010, which led some observers to call it a "he-cession."

Within Massachusetts, total estimated civilian employment declined by 51,000 between 2007 and 2010 (Table 4-7). All of this decline in employment took place among men. The number of employed males (16 and older) fell by 103,000 over this three-year period, while the number of employed women rose by 52,000. While the rate of decline in male employment

(-6.0 percent) in Massachusetts over the 2007-2010 period was close to the national average, no other state came close in the share of job loss over the 2007-2010 period that was attributable to men. Over 200 percent of the net decline in civilian employment over the 2007-2010 period in our state was due to job losses among men, the highest such ratio among the 50 states. Young males under 30 were particularly hard hit by these employment developments in our state.

Employment Developments in Massachusetts Over the Entire 1988-2010 Period: The Absence of Male Job Growth

The 1980s decade in Massachusetts was on many fronts the most impressive economic performance of the state in the post–World War II era. The so-called Massachusetts Miracle produced very impressive gains in employment, real output, real wages, annual earnings, and family incomes.[13] Over the past 22 years, however, total civilian employment in Massachusetts has been characterized by anemic growth, and nearly all of the growth has been attributable to women. Over the 1988-2010 period, total civilian employment in Massachusetts rose by only 159,000 (Chart 4-5), while the ranks of the employed in the US increased by just under 24.1 million over the same time period. The state captured less than 1 percent of the increase in national civilian employment over this 22-year period. Women were responsible for the overwhelming share of the employment gain. Their employment levels rose by 148,000 between 1988 and 2010, while male employment increased by only 11,000 over 22 years. Only seven out of every 100 new jobs among residents were obtained by men between 1988 and 2010.

To place the employment growth experiences of men and women in Massachusetts over the 1988-2010 period into perspective, we compared their employment increases with those for the entire nation over the same time period (Table 4-8). As noted above, aggregate male employment in the state rose by only 11,000 over the entire 1988-2010 period. In contrast, total male employment across the entire country increased by nearly 10.1 million. Massachusetts captured only 1 in 1,000 — or 0.1 percent — of the total growth in national male employment over this 22-year period. Yet, in 1988, the state was the home for 2.6 percent of all male workers in the country.

Massachusetts women fared somewhat better in capturing a larger share of national employment growth over the same time period. Total civilian employment of women in Massachusetts grew by 148,000 between 1988 and 2010, while employment of their national counterparts grew by 14.0 million. Still, Massachusetts women captured only 1 percent of national employment growth versus the 2.8 percent of total female employment that they held in 1988.

Table 4-6:

Growth in Civilian Employment in Massachusetts (16+) by Gender and the State's Rank among the 50 States, 2000-2010 (numbers in 1000s)

GROUP	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE	STATE'S RANK
All	3,238	3,200	-38	-1.2%	37th
Men	1,702	1,621	-81	-4.8%	44th
Women	1,536	1,579	+43	2.8%	24th

Table 4-7:

Changes in Civilian Employment of Men and Women in Massachusetts from 2007-2010 and the Male Share of Job Decline

GROUP	2007	2010	CHANGE 2007–2010	MALE SHARE OF OVERALL CHANGE	MA RANK AMONG 50 STATES
Men	1,724	1,621	-103	202	1st
Women	1,527	1,579	+52		
All	3,251	3,200	-51		

Sources: US Bureau of Labor Statistics, Geographic Profiles of Employment and Unemployment, 2007 and 2010

Chart 4-5:

Trends in Civilian Employment Among Men and Women in Massachusetts from 1988-2000, 2000-2010, and 1988-2010 (annual averages, numbers in 1000s)

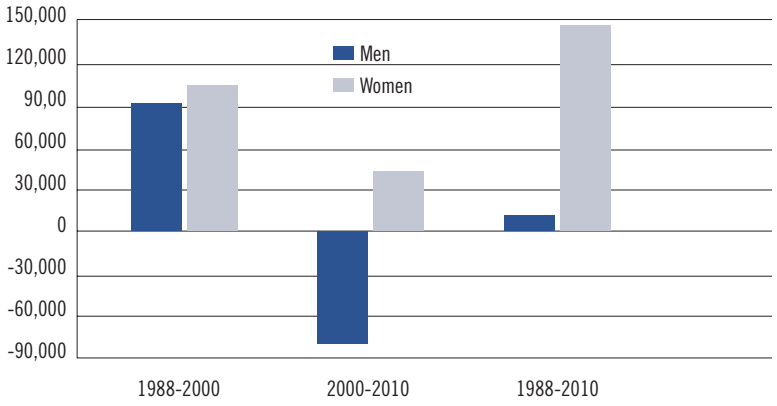


Chart 4-6:

Time Trends in the E/P Ratios of Working-Age Adults (16+) in Massachusetts, 2000-2010 (annual averages)

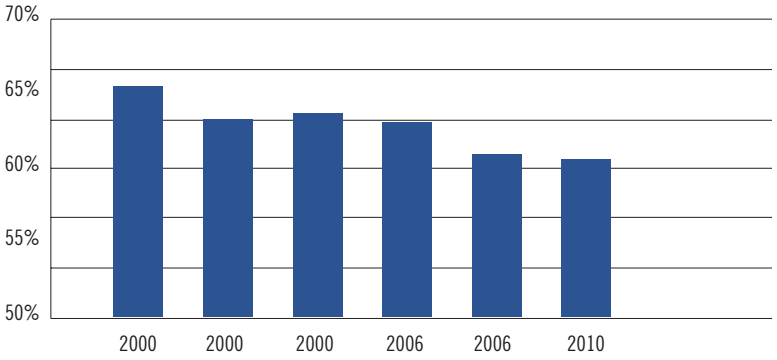


Table 4-8:

Comparisons of the Growth of Male and Female Employment in Massachusetts and the US, 1988–2010 (numbers in 1000s)

GENDER GROUP/AREA	1988	2010	ABSOLUTE CHANGE
Male			
Massachusetts	1,610	1,621	11
US	63,273	73,359	10,086
Massachusetts Share of US	2.6%	2.2%	-.4%
Female			
Massachusetts	1,431	1,579	148
US	51,656	65,705	14,049
Massachusetts Share of US	2.8%	2.4%	-.4%

Changes in the Employment/ Population Ratios of Massachusetts Residents, 2000-2010

As noted earlier in this chapter, changes in the number of employed residents in a state over time can be generated by changes in the size of the civilian, non-institutional working-age (16 and older) population and by shifts in the employment/population ratios (E/P) of the working-age population.[14] Over the 2000-2010 period, the working-age population of Massachusetts increased by nearly 7 percent, while the employment/population ratio fell sharply from 65.7 percent to 60.7 percent (Chart 4-6). The steep drop in the state's E/P ratio was driven by a combination of a decline in the civilian labor force participation rate (from 67.5 percent to 66.4 percent) and a sharp rise in the unemployment rate, from 2.7 percent in 2000 to 8.5 percent in 2010. All of the decline in the overall civilian labor force participation rate was attributable to men, whose participation rate fell from 74 percent in 2000 to slightly below 71 percent in 2010. Sharp increases in the male unemployment rate appear to have discouraged some men, particularly those under age 35, from actively looking for work. The female participation rate did not exhibit any significant change over the decade.

The steep drop in the E/P ratio of working-age adults over the past decade was not unique to Massachusetts. The E/P ratio of the nation also dropped sharply over the decade, falling from 64.5 percent in 2000 to 58.5 percent in 2010, a decline of 6 full percentage points (Table 4-9). A drop of such unprecedented magnitude in the E/P ratio over 10 years implies an extraordinary decline in the potential pool of employed persons in the nation — by nearly 14.4 million over the past decade.

The employment/population ratio of males in Massachusetts declined considerably over the past decade. In 2000, slightly more than 72 percent of all working-age males in the state held

a job (Chart 4-7). By 2006-2007, their E/P ratio was only about 2 percentage points lower than it was in 2000. However, between 2007 and 2010, the male E/P ratio fell considerably, from 70.7 percent to 64.1 percent. At the same time, males in many other states also experienced steep drops in their E/P ratios. In 2007, the state's male E/P ratio ranked 24th highest among the 50 states; by 2010, it had moved up one place in the ranking, to 23rd.

Trends in the employment/population ratios of women in Massachusetts over the past decade are displayed in Chart 4-8. In 2000, the E/P ratio of women stood at 59.8 percent, or 2.3 percentage points above the US average and 25th among the 50 states (Table 4-10). By 2007, it had declined to 57.4 percent, but it came close to holding its own by 2010, dropping by only 0.3 percentage points to 57.1 percent and ranking 16th among the 50 states. Increased employment in the health care, social services, and education industries helped prevent the E/P ratio for women from falling to the same extent as it did for men across the state.

Table 4-9:

Comparisons of the Employment/Population Ratios of Working-Age Adults in Massachusetts and the US, 2000-2010 (annual averages)

	2000			2010		
GROUP	MA	US	MA – US	MA	US	MA – US
All 16+	65.7%	64.5%	1.2%	60.7%	58.5%	2.2%
Men	72.2%	71.9%	.3%	64.1%	63.7%	0.4%
Women	59.8%	57.5%	2.3%	57.1%	53.6%	3.5%

Table 4-10:

Time Trends in the Employment/Population Ratios of All Working-Age Men and Women (16+) in Massachusetts, and the Rank among the 50 States, Selected Years (annual averages)

GROUP	2000	2007	2010	PERCENTAGE POINT CHANGE
Men	72.2%	70.7%	64.1%	-8.1%
Rank	30th	24th	23rd	
Women	59.8%	57.4%	57.1%	-2.7%
Rank	25th	30th	16th	

Note: Ranks are from top (1) to bottom (50)

Trends in Employment Developments in Massachusetts Over the 2000-2010 Period Across Age Groups

While total civilian employment (16 and older) in the state declined by 38,000, or about 1.2 percent, over the past decade, employment decline/growth varied extraordinarily widely across age groups. Persons in each of the five age groups under 45 experienced declines in their employment levels over the decade, with very large declines among teens (-28 percent) and 30-to-34-year-olds (-20 percent).[15] Each age group 45 and older saw their employment levels rise, with very substantial increases in the number of employed 55-to-64-year-olds (159,000) and those 65 and older (64,000). The employment level of employed 55-to-64-year-olds rose by 46 percent and those 65 and older by 63 percent. At no other time in

Chart 4-7:

Time Trends in the Employment/Population Ratios of Working-Age Men (16+) in Massachusetts, Selected Years, 2000-2010 (annual averages)

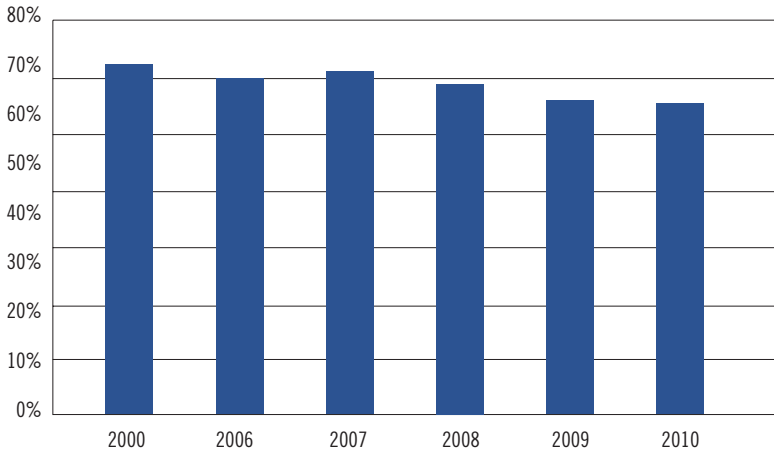


Chart 4-8:

Trends in the Employment/Population Ratios of Working-Age Women (16+) in Massachusetts, Selected Years, 2000-2010 (annual averages)

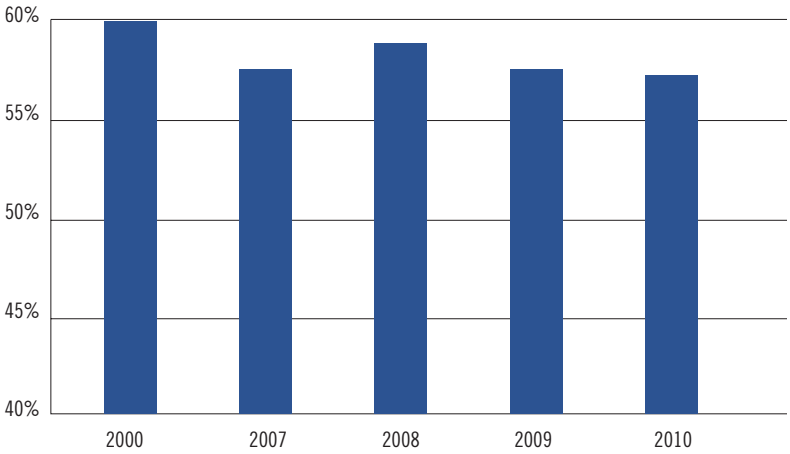


Table 4-11:

Trends in the Number of Employed Persons (16+) in Massachusetts by Age, 2000-2010 (annual averages, numbers in 1000s)

AGE	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
16 – 19	158	113	-45	-28%
20 – 24	283	271	-12	-4%
25 – 29	359	323	-36	-10%
30 – 34	380	305	-75	-20%
35 – 44	881	750	-131	-15%
45 – 54	729	768	39	5%
55 – 64	345	504	159	46%
65+	102	166	64	63%
Total	3,238	3,200	-38	-1%

Sources: 2000 monthly CPS surveys, public use files, tabulations by authors; 2010 Geographic Profile of Employment and Unemployment

the post–World War II era has there been such a dramatic shift toward older workers.

Overall, the number of employed persons ages 16 to 54 in the state fell by 261,000 between 2000 and 2010, while the aggregate number of those 55 and older rose by 223,000 (Table 4-11). The divergence across age groups was similar for both men and women (Table 4-12). The number of employed older men increased by 111,000, while their employed younger peers fell by a massive 191,000. Older women in Massachusetts increased their employment ranks by 113,000, while those women under 55 years old dropped by 73,000.

The substantial growth in the number of employed 55-to-64-year-olds in Massachusetts over the past decade was the consequence of both a series of demographic developments and a substantial rise in their employment rate. Between 2000 and 2010, the number of working-age persons in the civilian non-institutional population of the state increased from 4.925 million to 5.291 million — a gain of 366,000, or 7 percent (Table 4-13). The number of persons ages 16 to 24 and every age group 45 and older experienced population growth, while 25-to-34-year-olds and 35-to-44-year-olds declined in numbers. Many of the latter individuals were members of the "baby bust" generation born from 1965 to the late 1970s. In contrast, those persons 55 to 64 years old in 2010 — who were the early members of the post–World War II Baby Boom generation and were born between 1946 and 1955 — experienced huge gains in their population.[16] Their numbers rose by 37 percent over the decade, the highest growth rate by far of any age group in the state.

At the same time, the very high growth (46 percent) in the number of employed older persons in Massachusetts was due to an increase in their employment rate over the decade (Table 4-14). Each age group 55 or older experienced a rise in their E/P ratios over the decade, while

every age group under 55 saw their employment rates decline, with very steep drops in the employment rates of every age group under 35. Identical developments in the age patterns of E/P ratios took place across the entire nation over the same time period.

The state's ranking among the 50 states on their E/P ratios in 2010 varied widely across age groups. For the youngest workers (those under 25), the state ranked either in the middle of the distribution or near the bottom (Table 4-15). The state also ranked at or near the middle for those 45 to 54 and for those 65 and older. Our best performance was for adults from 55 to 64 years old. The 68 percent E/P ratio for this age group ranked 9th highest among the 50 states, tied with South Dakota (Table 4-16). Four of the top 10 states with the highest E/P ratios for 55-to-64-year-olds were in New England, including Vermont (2nd), Connecticut (5th), and New Hampshire (6th). The very large increases in the number of employed 55-to-64-year-olds can potentially create an above-average set of replacement needs over the coming decade, as more of these workers choose to retire from the labor force.

Table 4-12:

Trends in the Number of Employed Men and Women in Massachusetts by Age, 2000-2010 (annual averages, numbers in 1000s)

GENDER/AGE	2000	2010	ABSOLUTE CHANGE
Men	1,702	1,621	-81
16-54	1,470	1,279	-191
55+	231	342	111
Women	1,536	1,579	43
16-54	1,319	1,246	-73
55+	216	329	113
Total	3,238	3,200	-38
16-54	2,791	2,530	-261
55+	447	670	223

Sources: Monthly CPS surveys, 2000 and 2010, public uses files, tabulations by authors
Note: Estimates for age subgroups are based on the CPS public use files

Table 4-13:

Trends in the Number of Working-Age Civilians in the Population of Massachusetts by Age, 2000-2010 (annual averages, numbers in 1000s)

AGE GROUP	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
16–24	741	853	112	15%
25–34	876	814	-62	-7%
35–44	1,057	944	-113	-11%
45–54	875	998	123	14%
55–64	544	745	201	37%
65+	833	939	106	13%
Total	4,925	5,291	366	7%

Table 4-14:

Trends in the Employment/Population Ratios of Massachusetts Residents by Age, 2000-2010

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	47.5%	29.8%	-17.7%
20–24	69.3%	59.1%	-10.2%
25–29	85.3%	76.9%	-8.4%
30–34	83.5%	77.7%	-5.8%
35–44	83.3%	79.7%	-3.6%
45–54	83.4%	77.1%	-6.3%
55–64	63.5%	68.1%	4.6%
65–74	19.5%	27.5%	8.0%
75+	5.1%	7.8%	2.7%
All	65.7%	60.7%	-5.0%

Table 4-15:

Employment/Population Ratios of Massachusetts Residents by Age and Rankings among the 50 States

AGE	E/P RATIO	RANKING AMONG 50 STATES
16–19	28.7%	26th
20–24	58.7%	36th
25–34	77.2%	17th
35-44	79.6%	16th
45–54	76.9%	24th
55–64	68.0%	9th (tied with South Dakota)
65+	17.5%	21st
All 16+	60.5%	19th

Source: 2010 Geographic Profile of Employment and Unemployment, tabulations by authors

Table 4-16:

The 10 States with the Highest Employment/ Population Ratios for 55-64-Year-Olds in 2010

STATE	E/P RATIO
North Dakota	77.5%
Vermont	71.9%
Nebraska	71.5%
Wyoming	69.8%
Connecticut	69.1%
New Hampshire	68.8%
Iowa	68.6%
Minnesota	68.5%
South Dakota	68.0%
Massachusetts	68.0%

Source: 2010 Geographic Profile of Employment and Unemployment, tabulations by authors

Growth in Employment in Massachusetts by Educational Attainment, 2000-2010

Employment growth in Massachusetts in recent decades has strongly favored the well-educated. Rising demand for professional, technical, managerial, and high-level sales workers (stockbrokers, financial sales representatives, real estate agents, buyers, and wholesale and industrial marketing representatives) has boosted the employment of college graduates.[17] From the mid-1980s through the end of the 1990s, employment for those with some college (13 to 15 years of schooling, including associate's degree holders) increased by nearly 52 percent, and employment for those with a bachelor's or higher degree increased by 55 percent. In contrast, employment of those with only a high school diploma fell by 16 percent, and employment for those lacking a high school diploma fell by 26 percent.

The monthly CPS household surveys for the years from 2000 to 2010 were used to track changes in the annual average number of employed Massa-

chusetts residents by educational attainment over the decade. The information on educational attainment in the CPS survey was used to classify each employed respondent into one of the following six educational groups:

- 12 or fewer years of schooling, no high school diploma or GED certificate[18]
- High school diploma or GED, no completed years of college
- 13 to 15 years of schooling, no college degree
- Associate's degree
- Bachelor's degree
- Master's or higher degree — i.e., Ph.D. degree or professional degree (medicine, law)

Over the past decade, employment growth in Massachusetts varied widely across these six educational attainment groups. Employment increased among those with a bachelor's degree (+100,000, or 13 percent) and substantially among those with a master's or higher degree (+171,000, or 39 percent) while it declined steeply among those with no high school diploma (-41 percent) and those with a high school diploma (-15 percent), and more modestly (-1 percent) among those with an associate's degree. Total civilian employment in Massachusetts increased by nearly 270,000 among those with some type of college degree but declined by more than 300,000 among those lacking any post-secondary degree.

The extraordinarily large increase in the number of employed college graduates with a bachelor's or higher degree over the past decade was attributable to two separate factors: a very large increase in their numbers in the working-age population of the state over the past decade and a smaller than average decline in their employment/population ratio over the past decade. (No educational group in the Commonwealth was able to escape a decline in their E/P ratio over the past decade.)

Between 2000 and 2010, the total working-age population of the state rose by 366,000, or

Table 4-17:

Trends in the Number of Employed Civilians (16+) in Massachusetts by Educational Attainment, 2000-2010 (annual averages, numbers in 1000s)

EDUCATIONAL GROUP	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
<12 or 12 years, no high school degree/GED	338	200	-138	-41%
High school degree/GED	908	776	-132	-15%
Some college, no degree	503	472	-31	-6%
Associate's degree	297	293	-4	-1%
Bachelor's degree	758	857	99	13%
Master's or higher degree	437	608	171	39%
Total	3,238	3,200	-38	-1%

Table 4-18:

Growth in the Civilian Working-Age Population (16+) in Massachusetts by Educational Attainment, 2000-2010 (numbers in 1000s)

EDUCATIONAL GROUP	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
<12 or 12 years, no high school diploma/GED	851	703	-148	-17%
High school diploma/GED	1,466	1,385	-81	-6%
13-15 years, including associate's degree	1,124	1,254	130	12%
Bachelor's degree	958	1,156	198	20%
Master's degree or higher	527	793	266	50%
Total	4,925	5,291	366	7%

Chart 4-9:

Percent Change in the Working-Age Population of Massachusetts by Educational Attainment, 2000-2010

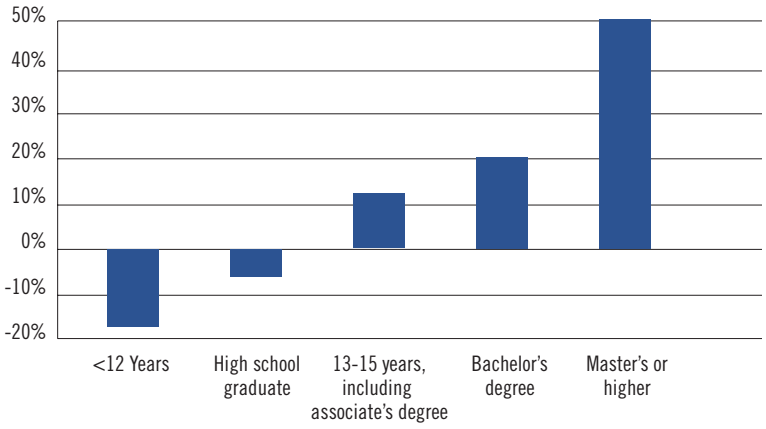


Table 4-19

Trends in the Employment/Population Ratios of Working-Age Persons in Massachusetts by Educational Attainment, 2000-2010 (annual averages)

EDUCATIONAL ATTAINMENT	2000	2010	PERCENTAGE POINT CHANGE
<12 or 12 years, no high school diploma/GED[1]	39.7%	28.4%	-11.3%
High school diploma/GED	61.8%	56.1%	-5.7%
Some college, including associate's degree	71.1%	61.0%	-10.1%
Bachelor's degree	79.1%	74.3%	-4.8%
Master's or higher degree	83.0%	77.3%	-5.7%
Total	65.7%	60.5%	-5.2%

[1] This group also includes high school students 16 and older

slightly more than 7 percent (Table 4-18). Every population group with some post-secondary schooling increased in number, with particularly large absolute and relative increases in the ranks of those with a bachelor's degree (close to 200,000, or 20 percent) and with a master's or more advanced degree (266,000, or 50 percent). In sharp contrast, the number of working-age adults with no high school diploma declined by 17 percent, despite some increases in new immigrants with poor schooling, and there was a 6 percent drop in the number of high school graduates who did not go on to college.

The employment/population ratios of working-age adults in Massachusetts varied quite widely across educational attainment groups in both 2000 and 2010, rising steadily and steeply with their levels of schooling (Table 4-19). In 2000, the E/P ratios of the state's working-age adults varied from a low of slightly under 40 percent among those with no high school diploma/GED, to 62 percent among high school graduates, and to highs of 79 percent and 83 percent among those with a bachelor's or a master's or higher degree, respectively.

Between 2000 and 2010, the E/P ratio of every educational attainment group in Massachusetts fell; however, the size of these declines varied somewhat across these educational groups. The largest declines took place among those persons lacking a high school diploma[19] (-11 percentage points) and those with 13 to 15 years of schooling, including associate's degree holders (-10 percentage points). The smaller declines were quite similar among the other three groups, ranging from high school graduates to those with a bachelor's or higher degree (-5 to -6 percentage points). While bachelor's degree holders experienced the lowest drop in their E/P ratios, many in this group under the age of 30 encountered growing mal-employment problems, discussed in greater detail in a following chapter. In 2010, again we find that the E/P ratios of Massachusetts adults rose steadily and often strongly with their level of educational attainment. The values of these E/P ratios ranged from a low of 28 percent among those lacking a high school diploma, to 56 percent for high schools graduates, and to a high of 77 percent for those with a master's or higher academic degree.

Trends in the Share of Employed Massachusetts Adults with a College Degree and Comparisons with the US and All Other States, 2000-2010

By the end of the 1990s, Massachusetts workers were among the best educated in the country. To track the state's progress in the comparative educational attainment of its workforce over the past decade, we estimated the share of Massachusetts workers who held an associate's or higher degree in 2000, 2007, and 2010 and compared those findings with those for the nation and each of the other 50 states (See Tables 4-20 and 4-21).

In 2000, 46 percent of the employed in Massachusetts held an associate's or higher degree (Table 4-20). That percentage share was 10 percentage points above the US and ranked first among the 50 states during that year (Table 4-21). Over the

decade, the share of Massachusetts workers with an associate's or higher degree rose steadily, rising to just under 52 percent in 2007 and to 55 percent in 2010. The state's lead over the nation on this educational measure rose modestly over the decade to 12 percentage points by 2010, and the state remained in first place among the 50 states.

Massachusetts also remained a national leader in the share of its employed workforce with a bachelor's or higher degree. In 2000, nearly 37 percent of the state's workers held a bachelor's or higher degree, 9 percentage points above that of the nation and the highest among the 50 states. Over the decade, the share of Massachusetts workers with a bachelor's or higher degree rose steadily, increasing to 46 percent in 2010 — 13 percentage points above the nation and again highest among the 50 states in each of the three years (2000, 2007, 2010). There were only five states (Colorado, Connecticut, Maryland, Massachusetts, and New Jersey) with 40 percent or more its workers with a bachelor's or higher degree in 2010.

While the above findings on the outstanding performance of Massachusetts in producing a highly educated workforce should be applauded, praise for the results should be tempered. Massachusetts performed very poorly over the past decade (as did Connecticut and New Jersey) in producing jobs for its residents. The state ranked seventh lowest in payroll job creation (we lost close to 5 percent of our jobs) and 14th lowest in civilian job creation for our residents. Our state's real output performance fell far below that of the earlier decade and ranked low among the 50 states. The lesson is quite clear for both the state and the nation: High levels of formal schooling may be necessary for future economic growth but they are far from sufficient. A better understanding of our unimpressive output and job creation record is needed. The death of our state's blue-collar workforce is likely a key factor.

Table 4-20:

Comparisons of the Share of Employed Persons (16+) in the US and Massachusetts with an Associate's Degree or Higher or a Bachelor's Degree or Higher, 2000, 2007, and 2010

	ASSOCIATE'S OR HIGHER DEGREE			BACHELOR'S OR HIGHER DEGREE		
YEAR	US	MA	MA – US	US	MA	MA – US
2000	36.0%	46.1%	10.1%	27.6%	36.9%	9.3%
2007	40.4%	51.9%	11.5%	31.0%	44.6%	13.6%
2010	43.1%	54.9%	11.8%	33.1%	45.8%	12.7%

Table 4-21:

The Share of the Civilian Employed (16+) in Massachusetts with an Associate's Degree or Higher or a Bachelor's Degree or Higher and Rank among the 50 States, 2000, 2007, and 2010

YEAR	ASSOCIATE'S DEGREE OR HIGHER	STATE RANK	BACHELOR'S DEGREE OR HIGHER	STATE RANK
2000	46.1%	1st	36.9%	1st
2007	51.9%	1st	44.6%	1st
2010	54.9%	1st	45.8%	1st

Trends in Massachusetts Employment by Major Occupational Group, 2000-2010

The combination of shifts in the industrial structure of employment in Massachusetts over the past decade (especially the increased share of jobs in professional and business services industries and the decline in employment in key goods-producing sectors) and changes in the occupational composition of employment toward professional and management positions within industries would be expected to have important impacts on the growth/decline of employment by major occupational area. From the mid 1980s through the late 1990s, the number of executive/managerial workers and professional workers in Massachusetts grew very strongly (40 percent to 60 percent), while clerical and office support fell by 10

percent, and blue-collar operatives/assemblers/fabricators declined considerably, by 41 percent.[20]

To track changes in the occupational distribution of employment in Massachusetts over the past decade, we analyzed the findings of the monthly CPS surveys for 2000 and 2010.[21] The occupations of the jobs held by employed Massachusetts residents in both 2000 and 2010 were classified into 24 major occupational groups. Twelve of these occupational groups experienced an increase in their employment levels over the decade while the remaining 12 encountered employment declines varying widely in both levels and intensity. The 12 growing occupational groups were dominated by professional occupations five but three of them were in the services occupations, including personal care (home care, child care, barbers, hairdressers/manicurists, personal fitness), health care support, and protective services (police, fire, sheriffs). The 12 declining occupations were dominated by blue-collar occupations (crafts, operatives, laborers) and office/administrative support, but also included some professional occupations (community/

Table 4-22:

Trends in Civilian Employment in Massachusetts by Major Occupational Group between 2000 and 2010 (annual averages, numbers in 1000s)

MAJOR OCCUPATION	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
Education, training, library professionals	172	246	74	43%
Personal care and service	77	125	48	62%
Management	372	412	40	11%
Health care support	64	101	37	58%
Health care practitioners	162	190	36	22%
Protective service	41	59	18	42%
Transportation/moving	134	148	14	10%
Computer and mathematical	117	127	5	4%
Life and physical scientist	56	61	5	8%
Arts, design, entertainment	74	77	3	4%
High level sales	117	119	2	2%
Farm, fishing, forestry	6	8	2	33%
Legal	47	46	-1	-2%
Low level sales	206	203	-3	-1%
Security/crossing guards	17	14	-3	-17%
Community/Social services	55	49	-6	-11%
Engineering and architecture	89	80	-9	-10%
Installation, maintenance, repair	98	88	-10	-10%
Building and ground cleaning	102	83	-19	-18%
Food prep and serving	173	152	-21	-12%
Business/financial operations	171	147	-24	-14%
Construction and extraction	162	136	-26	-16%
Office/administrative support	478	385	-93	-19%
Production	244	150	-94	-38%

social services, engineers), high level management support/financial operatives, and some service occupations, including building and ground maintenance/cleaners and food prep and serving occupations (cooks, waiters, and waitresses).

The five major occupations with the largest absolute increases in employment over the past decade were primarily in the health care and education professions (Chart 4-10). Three of the five occupational groups were professional health care practitioners (doctors, nurses, technologists), health care support, and education/training professionals. Personal care workers had the second highest growth (+48,000). The five major occupations with the largest absolute declines in employment over the decade included two blue-collar occupations (construction crafts and production operatives) and clerical/office support, but also business/financial services.

To identify Massachusetts's comparative advantage in attracting national employment growth in high-level professional and management/business operations occupations over the past decade, we estimated the state's share of national employment growth in six selected occupational categories (Table 4-23). In 2000, Massachusetts was home for 2.36 percent of all employed persons in the country. During the following decade, the state failed to capture any growth in the 667,000 new jobs in business and financial operations, and we captured a slightly below-average share of national job growth among health practitioners. We performed a bit above average for life/physical scientists (3.2 percent) and arts/design/entertainment professionals (4 percent) and well above average for management occupations (6 percent).

Among those major occupations losing jobs nationally over the past decade, we performed well in avoiding job losses in high-level sales occupations, we were about average in losing jobs in engineering, architecture occupations and production jobs, and we lost an above-average share of jobs in office support/clerical occupations (4 percent) and construction crafts occupations (6 percent).

Chart 4-10:

Five Major Occupational Groups with the Largest Gains in Employment in Massachusetts, 2000-2010 (numbers in 1000s)

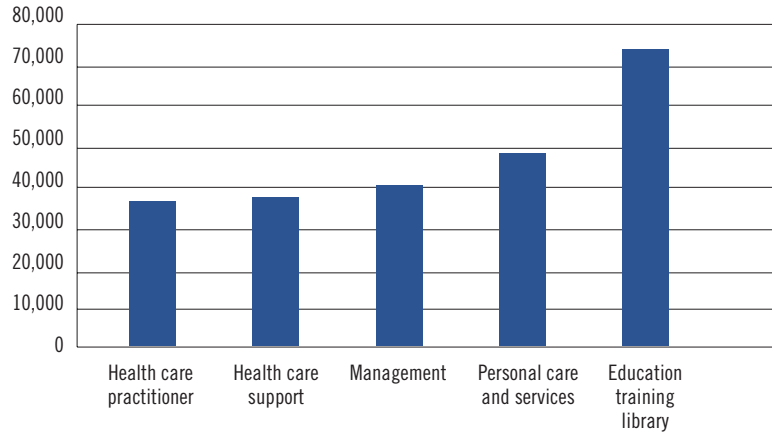
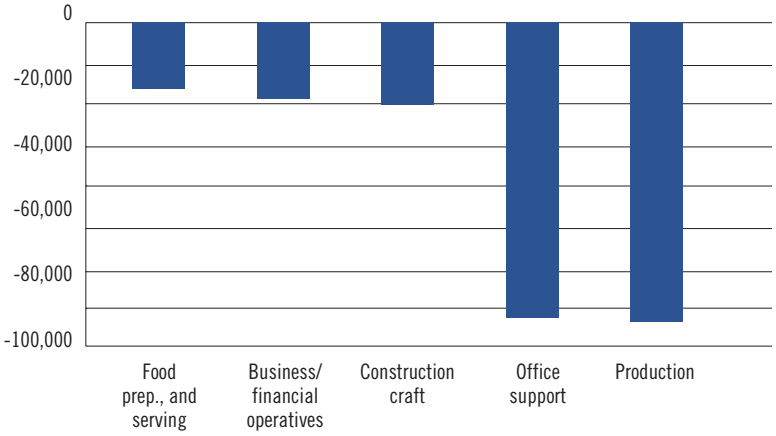


Chart 4-11:

Five Major Occupational Groups with the Largest Employment Losses in Massachusetts, 2000-2010 (numbers in 1000s)



The state's continued high loss of many blue-collar occupations and office support jobs has continued the earlier trends from the mid-1980s through 2000. The blue-collar and white-collar working class has been decimated, thanks to the elimination of many well-paid jobs for workers with only a high school education or a year of college. The loss of such jobs has decreased the middle of the earnings distribution and led to

Table 4-23:

Massachusetts Workers' Share of National Employment Growth in Key Professional, Technical, Management/Occupations, 2000-2010 (numbers in 1,000s)

OCCUPATIONAL GROUP	US GAIN IN EMPLOYMENT	MASSACHUSETTS GAIN IN EMPLOYMENT	MASSACHUSETTS' SHARE OF NATIONAL GAIN IN EMPLOYMENT
Management	674	40	6%
Business and financial operations	667	-24	<0%
Computer and mathematical	216	5	2%
Life, physical, and social service	158	5	3%
Arts, design, entertainment, and media	83	3	<4%
Health care practitioners	1,908	36	<2%

Table 4-24:

Massachusetts Share of Job Losses in National Major Occupational Groups Experiencing Job Losses, 2000-2010 (numbers in 1000s)

OCCUPATIONAL GROUP	US EMPLOYMENT CHANGE	MASSACHUSETTS EMPLOYMENT CHANGE	MASSACHUSETTS SHARE OF LOSS
Engineers and architects	-378	-9	2%
High level sales	-282	+2	<0
Office support	-2,386	-93	4%
Construction & extraction	-443	-26	6%
Production	-3,457	94	3%

increased inequality in the distribution of weekly wages, annual earnings, and family/household incomes in the state over the past few decades. As detailed in Chapters 7 and 8, Massachusetts has moved from one of the most egalitarian states in the nation in the 1950s and 1960s to one of the most unequal states in annual earnings, household incomes, and family incomes today.

Trends in the Employment-to-Population Ratios of Massachusetts Residents by Gender and Age, 2000-2010

Over the past decade in the US, there was a historically unprecedented age twist in the structure of employment rates.[22] In 2010, the employment/population ratios of adults in nearly every age group 55 and older were above those prevailing in 2000, while all workers under age 55 were less likely to be working. The percentage point sizes of the declines in the E/P ratios were highest for the nation's youngest workers. Males under 30 were working at a lower rate in 2010 than at any time in post–World War II history. To identify whether similar age twists in employment rates took place in Massachusetts, we analyzed E/P

ratios of men and women by age group in both 2000 and 2010. The results show that similar developments have indeed occurred here.

Among the state's males, the overall E/P ratio declined substantially, (8.1 percentage points), between 2000 and 2010 (Table 4-25). Similar to findings for the nation as a whole, all of these declines in E/P ratios took place among men under age 55, with the largest declines occurring among those males under 30 years of age. Males from ages 55 to 64 basically kept their employment rate constant over the decade, while those from ages 65 to 74 experienced a large 12 percentage point increase in their employment rate. To place these findings in perspective, consider the following. In 2000, a teenaged male (ages 16 to 19) was twice as likely to have been working as a male 65 to 74 years old — a man who could have been his grandfather, in many cases. Ten years later, males 65 to 74 years old were one-third more likely to be employed than teenaged males (34 percent versus 26 percent).

Similar age twists in employment rates took place among Massachusetts women over the past decade. The E/P ratio for all working-age women declined by slightly more than 2 percentage points over the decade, from just under 60 percent in 2000 to below 58 percent in 2010 (Table 4-26). All age groups of women under 55 experienced declines in their E/P ratios with the largest drops recorded by the youngest age groups (those 16 to 19, 20 to 24, and 25 to 29 years old). In contrast, the E/P ratios of all women over age 54 increased over the decade, with particularly large increases for those women 55 to 64 and 65 to 74 years old — whose E/P ratios increased by 8 and 5 percentage points, respectively. By 2010, older men and women ages 55 to 64 combined had the 7th highest E/P ratio for this age group across the 50 states.

Table 4-25:

Trends in the Employment/Population Ratios of Massachusetts Men by Age, 2000-2010 (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	45.2%	26.0%	-19.2%
20–24	72.4%	59.8%	-12.6%
25–29	89.9%	77.7%	-12.2%
30–34	91.8%	83.0%	-8.8%
35–44	89.9%	84.2%	-5.7%
45–54	87.4%	78.6%	-8.8%
55–64	70.5%	71.0%	0.5%
65–74	22.0%	33.5%	11.5%
75+	8.5%	10.9%	2.4%
All	72.2%	64.1%	-8.1%

Table 4-26:

Trends in the Employment/Population Ratios of Massachusetts Women (16+) by Age, 2000-2010 (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	49.9%	33.7%	-16.2%
20–24	66.2%	58.4%	-7.8%
25–29	80.8%	76.0%	-4.8%
30–34	74.9%	72.7%	-2.2%
35–44	77.1%	75.7%	-1.4%
45–54	79.3%	75.6%	-3.7%
55–64	57.5%	65.5%	8.0%
65–74	17.5%	22.3%	4.8%
75+	3.1%	5.8%	2.7%
All	59.8%	57.6%	-2.2%

Estimating the Pool of Employed Men and Women 16-54 Years Old in 2010 if Their 2000 E/P Ratios Had Been Maintained

The across-the-board declines in the E/P ratios of Massachusetts men and women under age 55 during the last decade clearly reduced the pool of residents that would have been employed in 2010 if each gender/age group had been able to maintain their employment rates from 2000. To estimate the magnitude of this lost pool of workers in 2010, we conducted the following hypothetical exercise. For each of the six age groups under 55 for both men and women separately, we estimated the number of additional residents who would have been employed in 2010 if each group had maintained their 2000 E/P ratio. Findings of our analysis are presented in Tables 27, 28, and 29.

Among males, the additional pool of employed persons ages 16 to 54 in 2010 would have been quite considerable, totaling somewhat over 180,000. As expected, given their much sharper declines in E/P rates, males under age 25 would have gained the most jobs (68,000), but their peers from 25 to 34 and from 45 to 54 have each lost more than 43,000 job opportunities.

LOWER EMPLOYMENT REDUCES THE ABILITY TO FORM INDEPENDENT HOUSEHOLDS AND TO MARRY.

Among women, the hypothetical pool of additional workers is smaller than that of men but is still of considerable size. If women in each age group had been able to match their year 2000 E/P rates, there would have been an additional 83,350 women under age 55 at work in 2010. As was the case for men, an above-average share of these jobs would have gone to those under age 25 (43,400), but nearly another 19,000 women 45 to 54 years old would have been employed.

Combining the findings for men and women yields an extraordinarily large pool of additional workers (Table 4-29). If each age/gender group had matched their 2000 E/P ratios, then total employment of persons ages 16 to 54 in the year 2010 would have been 2.804 million, rather than the 2.541 million that were actually employed during that year. This would have represented a gain of 263,400 employed persons, or more than 10 percent — instead of a huge loss of human resource utilization and their output potential.

The loss of such a large number of potential employees has adverse consequences for the workers themselves and society at large. Lower employment today yields a lower level of real output for the state economy. Those foregoing such employment also acquire less work experience that will reduce their productivity tomorrow, lowering future state output. The absence of employment today reduces the annual earnings and incomes of the jobless, which lowers their ability to buy goods and services, thereby reducing the demand for output from affected industries and further lowering employment (a negative multiplier effect). Lower employment, especially among the young, reduces the ability to form independent households and to marry, reducing the demand for housing and leading to lower levels of new residential construction. Higher shares of men and women under 30 remain living at home with parents and other relatives. Lower marriage rates among the young have also been accompanied by high increases in the share of births taking place out of wedlock, thereby increasing the number of single-parent families — many of whom are at risk of low-income problems and economic dependency.

The steep drop in employment reduces tax collections at each level of government in multiple areas. The loss of employment means lower payroll taxes from both the workers and their employers (including Social Security payroll taxes, unemployment insurance taxes, and worker disability insurance taxes), lower pay-

ments of income taxes at both the federal and state level, lower state sales tax receipts, and lower property tax receipts due to reduced household formation. Higher joblessness also increases the demand for various public cash transfers (such as unemployment insurance, TANF benefits, and Supplemental Security Income for the disabled) and non-cash transfers — especially food stamps, rental subsidies, and Medicaid health insurance benefits. The combined drop in tax receipts and the rise in cash and in-kind benefits has had a massive adverse impact on national and state budgets and has contributed to the growing fiscal crises at the national and state levels.[23]

Trends in the Full-Time Employed in Massachusetts and the Hypothetical Loss in Full-Time Employment Among 16-to-54-Year-Olds in the State from 2000 to 2010

Not only have working-age residents under age 55 in Massachusetts experienced greater difficulties in finding any type of employment in recent years, but a higher fraction of the employed have ended up in part-time jobs (less than 35 hours of work per week). If the rising share of part-time workers is due to voluntary reasons, this poses no particular economic problem. Unfortunately, most of the rise in part-time employment in recent years is due to those employed part-time for economic reasons — i.e., the underemployed.[24] These are individuals who are working part-time either because of reduced hours at their regular full-time jobs or due to an inability to find full-time work.[25] The bulk of this substantial national increase in underemployment took place during and after the Great Recession of 2007-2009. For the nation as a whole, the annual average number of underemployed persons increased from 3.227 million in 2000 to 8.886 million in 2010, a near tripling in their numbers. Here in Massachusetts, the number of underemployed more

Table 4-27:

Comparisons of the Actual and Hypothetical Levels of Employment in 2010 among Massachusetts Men, 16-54 Years Old by Age

AGE	ACTUAL 2010	HYPOTHETICAL 2010	HYPOTHETICAL-ACTUAL EMPLOYMENT
16–19	51,975	90,357	38,382
20–24	140,252	169,804	29,552
25–29	167,805	194,153	26,348
30–34	160,103	177,078	16,975
35–44	378,302	403,912	25,610
45–54	385,994	429,210	43,266
All, 16–54	1,284,431	1,464,514	180,083

Table 4-28:

Comparisons of the Actual and Hypothetical Levels of Employment in 2010 among Massachusetts Women 16-54 Years Old by Age (annual averages)

AGE	ACTUAL 2010	HYPOTHETICAL 2010	HYPOTHETICAL-ACTUAL EMPLOYMENT
16–19	64,648	90,357	25,709
20–24	132,494	150,190	17,696
25–29	155,775	165,613	9,838
30–34	145,780	15,492	4,412
35–44	374,483	381,409	6,926
45–54	383,550	40,234	18,771
All, 16–54	1,256,730	1,340,082	83,352

Table 4-29:

The Increases in Employment of 16-54-Year-Old Men and Women Combined in Massachusetts in 2010 if 2000 E/P Ratios in Each Age Group Had Been Maintained in 2010

GROUP	ACTUAL 2010	HYPOTHETICAL 2010	INCREASE
All	2,541,161	2,804,596	263,435
Men	1,284,431	1,464,514	180,083
Women	1,256,730	1,340,082	83,352

Table 4-30:

Comparisons of the Share of Employed Persons in Massachusetts Holding Full-Time Jobs in 2000 and 2010 by Age (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	28.8%	16.5%	-12.3%
20–24	73.1%	58.9%	-14.2%
25–29	89.1%	85.8%	-3.3%
30–34	87.5%	86.3%	-1.2%
35–44	85.7%	81.4%	-4.3%
45–54	87.9%	83.7%	-4.2%
55–64	85.5%	80.1%	-5.4%
65–74	40.4%	58.9%	18.5%
75+	35.7%	34.0%	-1.7%
All	81.7%	77.1%	-4.6%

Note: Estimates are based on usual weekly hours of work

Table 4-31:

Comparisons of the Share of Employed Men in Massachusetts Holding Full-Time Jobs in 2000 and 2010 by Age (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	33.5%	21.9%	-11.6%
20–24	81.8%	64.3%	-17.5%
25–29	94.5%	90.6%	-3.9%
30–34	97.6%	91.2%	-6.4%
35–44	97.8%	94.6%	-3.2%
45–54	97.3%	94.8%	-2.5%
55–64	91.4%	88.3%	-3.1%
65–74	49.2%	70.2%	21.0%
75+	44.0%	29.8%	-14.2%
All	91.0%	86.5%	-4.5%

than tripled from 56,000 in 2000 to 171,000 in 2010, with very large increases taking place among both men and women in every age group except teens.

Comparisons of the share of employed persons in Massachusetts who were working full-time in 2000 and 2010 by age group are displayed in Table 4-30. During 2000, nearly 82 of every 100 employed persons in Massachusetts were holding down full-time jobs (Table 4-30). Full-time jobs are defined as those which usually provide 35 or more hours of work per week. By 2010, only 77 of every 100 employed Massachusetts residents held a full-time job, down nearly 5 percentage points from 2000. Workers in every age group except those 65 to 74 years old were less likely to be working full-time in 2010. The declines in full-time work were most severe among the state's youngest workers, with rising underemployment a particular problem for those 20 to 24 years old.

Declining full-time employment occurred among both men and women in the state. Among males, the share of the employed that was full-time fell from 91 percent in 2000 to slightly above 86 percent in 2010. Again, these drops in full-time employment took place for every major age group of males except those 65 to 74 years old, who experienced a big jump in full-time jobs. Very large drops in full-time employment took place among teens and especially 20-to-24-year-olds over the decade.

The estimates of E/P ratios and the share of the employed with full-time jobs can be combined to generate estimates of full-time E/P ratios. These ratios represent the number of males holding full-time jobs per 100 males in the civilian working-age population. Given both the drop in the male E/P ratio and the share of employed males with full-time jobs, the male full-time E/P ratio declined considerably over the decade, from nearly 66 percent in 2000 to 55.4 percent in 2010, or a drop of more than 10

percentage points (Table 4-32). All age groups of males under 55 experienced steep drops in their full-time E/P ratios over the decade, with 20-to-34-year-olds faring the worst.

The share of employed women holding full-time jobs in Massachusetts also fell over the decade, from 71.5 percent in 2000 to just under 68 percent in 2010 — a drop of 3.6 percentage points. Similar to the findings for males, the largest drops took place among the youngest age groups of female workers (i.e., those under 25). There were, however, three age groups of women (30 to 34, 65 to 74, and 75 and older) who became more likely to be employed full-time over the decade.

The much smaller decline in the overall E/P ratio for women, combined with a modestly lower drop in their full-time share of jobs, led to a 3.6 percentage point decline in their full-time E/P ratio over the decade, versus a drop of 10 percentage points for men (see Table 4-34). Again, younger women were typically the most adversely affected; however, every age group of women over 55 achieved a higher full-time E/P ratio over the decade as did those 30 to 34 years old.

Estimating the Potential Pool of Full-Time Workers in Massachusetts in 2010

Similar to our previous exercise in estimating the number of 16-to-54-year-olds in Massachusetts that would have been employed in 2010 if members of each gender/age group had been able to maintain their 2000 E/P ratios, we have conducted a similar simulation exercise, estimating the pool of 16-to-54-year-old residents who would have been working full-time in 2010 if each gender/age group had been able to maintain their 2000 full-time E/P ratios. Findings for men, women, and both genders combined are displayed in the following three tables.

For men, the steep declines in full-time E/P ratios for most age groups substantially reduced

Table 4-32:

Comparisons of the Full-Time Employment/Population Ratios of Men in Massachusetts in 2000 and 2010 by Age (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	15.2%	5.7%	-9.5%
20–24	59.3%	38.4%	-20.9%
25–29	85.0%	70.4%	-14.6%
30–34	89.6%	75.7%	-13.9%
35–44	87.9%	79.6%	-8.3%
45–54	85.0%	74.5%	-10.5%
55–64	64.5%	62.7%	-1.8%
65–74	10.8%	23.5%	12.7%
75+	3.7%	3.2%	-0.5%
All	65.7%	55.4%	-10.3%

Table 4-33:

Comparisons of the Share of Employed Women in Massachusetts Holding Full-Time Jobs in 2000 and 2010 by Age, 2000-2010 (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	24.1%	12.5%	-11.6%
20–24	64.1%	53.4%	-10.7%
25–29	83.2%	80.8%	-2.4%
30–34	74.6%	81.0%	6.4%
35–44	72.4%	68.3%	-4.1%
45–54	77.6%	72.7%	-4.9%
55–64	79.4%	72.3%	-7.1%
65–74	31.5%	44.6%	13.1%
75+	22.9%	38.6%	15.7%
All	71.5%	67.9%	-3.6%

Table 4-34:

Comparisons of the Full-Time Employment/Population Ratios of Women in Massachusetts in 2000 and 2010 by Age, 2000-2010 (annual averages)

AGE	2000	2010	PERCENTAGE POINT CHANGE
16–19	12.0%	4.2%	-7.8%
20–24	42.4%	31.2%	-11.2%
25–29	67.3%	61.5%	-5.8%
30–34	55.9%	58.9%	3.0%
35–44	55.8%	51.7%	-4.1%
45–54	61.6%	55.0%	-6.6%
55–64	45.7%	47.4%	1.7%
65–74	5.5%	10.0%	4.5%
75+	0.7%	2.2%	1.5%
All	42.7%	39.1%	-3.6%

Table 4-35:

Comparisons of the Actual and Hypothetical Levels of Full-Time Employment in 2010 among Massachusetts Men, 16-54 Years Old by Age

AGE	ACTUAL 2010	HYPOTHETICAL 2010	HYPOTHETICAL–ACTUAL EMPLOYMENT
16–19	11,394	30,385	18,991
20–24	90,061	139,079	49,018
25–29	152,040	183,571	31,531
30–34	146,022	172,834	26,812
35–44	357,634	394,925	37,291
45–54	365,859	417,424	51,665
All, 16–54	1,123,010	1,338,218	215,208

their potential levels of full-time employment in 2010. There were very large reductions in full-time employment among 20-to-24- and 25-to-29-year-olds combined (80,000) and among those 45 to 54 years old (52,000). There would have been 215,000 more full-time employed males in 2010 if the 2000 full-time E/P ratios had been maintained.

Among women, the expected increase in full-time employment was smaller, but it still exceeded 100,000 (Table 4-36). The only non-older age group with no decline in full-time employment were those 30 to 34 years old. Losses in full-time employment were quite large among 20-to-24-year-olds and those 35 to 54. By combining the potential full-time job losses of men and women, we end up with a loss of somewhat more than 315,000 full-time workers in Massachusetts in 2010 — of which 215,000, or nearly 70 percent, were men. Nearly one-half of these hypothetical full-time employment losses were among men and women under age 30. These young workers bore the brunt of the poor labor market performance over the past decade.

The loss of full-time job opportunities for Massachusetts residents who end up being involuntarily underemployed creates a wide array of costs for the workers themselves and society at large. Those working part-time for economic reasons tend to work on average (median) for only 21 to 22 hours per week versus the 41 to 42 hours of the full-time employed. They also typically earn lower hourly wages than comparable full-time employed persons. Thus, their average weekly earnings are less than half of the full-time employed.[26] Part-time workers are also less likely to be trained by their employers, and they are less likely to receive key employee benefits such as health insurance coverage and pension benefits.[27] Recent research for young women based on national longitudinal surveys has found that the economic returns of part-time work experience in terms of higher future hourly earnings

is equal to zero, while full-time work experience yields significantly higher future hourly wages.[28] By substantially lowering current weekly earnings, underemployment also reduces tax receipts from employment, including lower payroll taxes from the workers and their employers, lower state and federal income taxes, and lower state sales tax receipts.

Appendix: The Potential Sources of the Large Gap in the Employment Change Estimates of the Current Population Survey and Current Employment Statistics Survey in Massachusetts, 2000–2010

Findings in this chapter and the preceding one have revealed that both wage and salary payroll employment and resident civilian employment (for persons 16 and older) in Massachusetts declined during the past decade, 2000-2010. The estimated magnitude of the difference in these two employment changes (105,000) was fairly large: a decline of 38,000 in the CPS survey versus a much larger 143,000 decline in the payroll employment survey. Large differences in CES and CPS employment change estimates also prevailed during the steep state recession of 1989-92, when payroll job declines substantially outstripped the declines in CPS civilian employment in both our state and the region.[29] A large imbalance in the other direction (CES job growth far exceeding CPS employment growth) took place during the labor market boom years of 1992 to 2000.

The employment concepts underlying the measures of employment in the CES and CPS surveys differ from each other in a number of important ways that could produce these differences in estimated employment changes over the past decade. Key definitional differences are listed in Table A-1 below, and a subset of estimates of their potential impacts on the gap in the employment changes from these two surveys

Table 4-36:

Comparisons of the Actual and Hypothetical Levels of Full-Time Employment in 2010 among Massachusetts Women, 16-54 Years Old by Age

AGE	ACTUAL 2010	HYPOTHETICAL 2010	HYPOTHETICAL – ACTUAL EMPLOYMENT
16–19	8,057	23,020	14,963
20–24	70,784	96,194	25,410
25–29	126,054	137,942	11,888
30–34	118,108	112,092	-6,016
35–44	255,756	276,039	20,283
45–54	279,037	312,522	33,485
All, 16–54	857,796	957,809	100,013

Table 4-37:

The Increases in the Number of Full-Time Employed 16-54-Year-Old Men and Women that Would have Occurred in Massachusetts in 2010 if 2000 Full-Time E/P Ratios Had Been Maintained

GROUP	2010 ACTUAL	2010 HYPOTHETICAL	INCREASE
All	1,980,806	2,296,027	315,221
Men	1,123,010	1,338,218	215,208
Women	857,796	957,80	100,013

Table A-1:

Potential Sources of Differences between the Counts of Payroll Wage and Salary Jobs and CPS Civilian Employment Counts in Massachusetts

SOURCE	PAYROLL SURVEY	CPS HOUSEHOLD SURVEY
Number of employed 14-to-15-year-olds	Count if appear on payroll	Excluded
Self-employed (not incorporated)	Excluded	Counted
Unpaid family firm workers (15+ hours)	Excluded	Counted
Household workers (maids, butlers)	Mostly excluded	Counted
Multiple job holders	Counted twice if hold two wage and salary jobs	Only counted once
In-commuters from other states	Counted	Excluded (must be resident)
Out-commuters to other states	Excluded	Included
Contract workers not on payroll	Excluded	Included
Off-the-books workers	Excluded	Included if report jobs to CPS interviewers

are presented in Tables A-2 and A-3.

The CPS employment count only includes persons 16 and older; the CPS survey discontinued the collection of data on 14-to-15-year-olds back in the mid-1980s and has not included them in the official labor force statistics since the late 1960s. A number of 14-to-15-year-olds do, however, work in our state, and some of them are picked up by the CES survey. A new national longitudinal survey of America's youth (14 to 17 years old in 1997) did collect data on the employment behavior of 15-year-olds for several years. The survey data found that about 18 percent of the nation's 15-year-olds held some type of job during a typical week in 1997-1999, although many of these jobs were in the informal sector (babysitting, lawn maintenance, newspaper delivery) and would not have appeared on the payrolls of firms.[30] Overall, employment among teens (ages 16 to 19) fell steeply in our state over the past decade, with the youngest members losing the most, and it is quite likely that the state's 15-year-olds would have been the biggest job losers. This development by itself would have pushed the CES payroll employment count down over the decade but left the CPS count unchanged, since 15-year-olds are not included in the latter.

All of the self-employed are included in the CPS employment count; however, only the self-employed that are incorporated would be picked up by the CES payroll survey. Any increase in the number of self-employed in unincorporated businesses would raise the CPS employment count but leave the CES count unchanged. Similar findings would apply to independent contractors (those paid on 1099 forms) and to workers hired off the books, provided that these latter informal workers reported their employment to the CPS interviewer. Developments similar to this took place in our state during the severe labor market downturn in 1989 to 1992. CPS employment fell far less steeply than CES employment as some workers who lost wage and salary jobs shifted to self-employment, independent contractor, and off-the-books jobs.[31]

Persons holding unpaid positions in family-owned firms are counted as employed in the CPS survey but are not counted in the CES survey.[32] A rise in the number of unpaid family workers (or vice versa) would affect the CPS employment count but not the CES job count.

Private household workers (maids, butlers, nannies) working for pay would be counted on the CPS household survey, but they are not included

in the universe of employers in the CES monthly payroll survey. A rise in private household employment would increase the CPS employment count but leave the CES job count unchanged.

Each employed person in the CPS survey is counted only once, regardless of the number of jobs they hold, but the survey does collect monthly data on the number of multiple job holders. A multiple job holder who held two wage and salary jobs in the state of Massachusetts would be counted twice on the CES payroll survey. National evidence from the late 1980s and early 1990s showed that about one-quarter of multiple job holders in the US held a wage and salary job and a self-employment position. Such individuals would not affect the CES payroll job count. A decline in multiple jobholding in our state, as did occur over the past few years, would exert downward pressure on the CES job count while leaving the CPS employment level unchanged.

The last two differences between the CPS and CES employment counts are related to the treatment of in- and out-commuters. The CPS employment measure is based on the residences of the workers, not on the locations of their employers, while the CES payroll job measure is based on the geographic location of the firm, not of the worker. Commuters into Massachusetts would add to the CES employment count in our state, but not the CPS count of the employed. On the other hand, Massachusetts workers commuting outside of the state for work would be counted as employed in the CPS survey in our state but not in the CES job count. During the past decade, there was an increase in the number of out-commuters that exceeded that of in-commuters.

Developments in the Structure of Employment in Massachusetts Between 2000-2010 and Its Impacts on CPS/CES Employment Changes

How have changes in the character of employment in Massachusetts over the past decade possibly affected the observed differences in CPS and CES employment changes? To answer this key question, we estimated employment changes in seven different areas over the past decade. First, with respect to the employment of 14-to-15-year-olds, our estimates are highly tentative. There were about 90,000 15-year-olds in our state in 2000. If 18 percent were employed on an average month and half of them were on the payrolls of firms, then CES employment of 15-year-olds in 2000 would have been 8,100. The E/P ratio of 15-year-olds may have declined to 10 percent in 2010, and only 5 percent were likely working in payroll jobs. Given about 85,000 15-year-olds in 2010, this would have reduced payroll employment to 4,200 — a decline of 3,900 payroll jobs over the decade.

Table A-2:

Changes in Self-Employed, Multiple Job Holders, Unpaid Family Workers, Household Workers, In-Commuters, and Out-Commuters in Massachusetts from 2000–2010

EMPLOYMENT GROUP	2000	2010	CHANGE FROM 2000 – 2010
14-to-15-year-olds	~8,100	4,200	-3,900
Self-employed (not incorporated)	222,700	227,400	+4,700
Multiple job holders	191,100	179,500	-11,600
Unpaid family workers	4,090	960	-3,130
In-commuters from other states (2000-2009)	178,200	184,800	+6,600
Out-commuters to other states	100,700	124,500	+23,800
Contract workers/off the books	?	?	

The number of unincorporated self-employed persons in Massachusetts increased from 222,700 in 2000 to 227,400 in 2010, for a gain of 4,700. This would have boosted CPS employment by this amount and left the CES job count unchanged. The number of multiple job holders fell by 11,600 over the decade. If all of this decline was among those holding two wage and salary jobs in Massachusetts, then CPS employment would be unchanged while CES employment would fall by 11,600. The number of unpaid family workers, which were relatively small to begin with in 2000, fell by 3,100 over the decade. This would have reduced the CPS employment count while leaving CES payrolls unchanged.

During the past decade, the number of in-commuters into Massachusetts from other states rose by 6,600. If they all were wage and salary workers, this would have increased CES employment by the same amount but left CPS employment levels unchanged. At the same time, the number of Massachusetts workers commuting outside of the state for their work increased by a higher 23,800. This would have increased CPS employment counts but left CES job counts unchanged.

Taking into account all of the above changes, we have CPS employment increasing by 25,400 over the decade relative to the CES count, while the CES job count would have fallen by 8,900 relative to the CPS employment count. The net difference is still only 34,300, leaving a 62,000 difference remaining in the count of employment losses between the two surveys. It may well be that the rise of workers employed as independent contractors and working "off the books" are responsible for the remaining gap. Such developments have a number of adverse consequences for both the workers themselves and society as a whole. Few of these workers receive any form of employee benefits, including vacation pay, health insurance coverage, or employer pension contributions. Employers of these workers do not pay any payroll taxes, including Social Security retirement and Medicare taxes and unemployment insurance taxes. These workers also do not frequently contribute to Social Security, federal income, or state income taxes, placing greater pressure on both federal and state budget deficits and the tax burden on the rest of society.

Table A-3:

Estimates of the Impacts of Selected Job Developments on the Changes in the CPS and CES Employment Counts Over the 2000-2010 Period in Massachusetts

JOB CHANGE	CPS COUNT	CES COUNT
Declines in 14-to-15-year-olds in payroll jobs	0	-3,900
Increases in self-employed in unincorporated business	+4,700	0
Reduction in multiple job holders	0	~ -11,600
Reductions in unpaid family workers	-3,100	0
Increase in in-commuters from other states	0	+6,600
Increase in out-commuters to other states	+23,800	0
Increase in contract workers/ off the books workers	?	0
Net change	+25,400	-8,900

Endnotes

1 For a review of the employment definitions underlying the national and state CPS employment estimates, see US Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, January 2007, US Government Printing Office, Washington, D.C., 2007; US Bureau of Labor Statistics, *The Employment Situation*, June 2011, July 8, 2011.

2 The survey is conducted during the week containing the 19th day of the month. The reference week is the prior calendar week; i.e., the week containing the 12th day of the month.

3 For previous attempts to explain large CPS-CES differences in employment/growth decline at the national and state level in recent decades, see Paul Flaim, "How Many New Jobs Since 1982? Data from Two Surveys Differ," *Monthly Labor Review*, August 1989, pp. 10-15; John F. Stinson, "New Data on Multiple Jobholding Available from the CPS," *Monthly Labor Review*, March 1997, pp. 3-8; Andrew Sum, and others, Job Growth in New England During the Economic Boom from 1992-2000: The Case of the Missing 500,000 Workers, Report prepared for the New England Regional Office of the Employment and Training Administration, Boston, October 2007.

4 Some multiple job holders hold both a wage and salary job and a self-employment position. If a multiple job holder loses a wage and salary job but keeps his self-employment position, he will not affect the CPS employment count but will reduce the CES job count.

5 The monthly CPS questionnaires collect educational enrollment data only for those 16-24 years old. The October CPS questionnaire contains a supplement that is used to collect school enrollment data for all persons 3 and older.

6 A decline in multiple job holding also appears to have pushed down payroll employment to a greater degree than total civilian employment. See Appendix.

7 For an overview of the high levels of net domestic out-migration from 2000-2006 and the factors contributing to this problem, see Andrew Sum, Ishwar Khatiwada, and Joseph McLaughlin, *Mass Jobs: Meeting the Challenges of A Shifting Economy*, Chapter 7.

8 Each of these 15 states had a working-age population of 5 million or more in 2010.

9 For a detailed assessment of the impacts of the steep economic downturn in our state and the entire region during the late 1980s and early 1990s, see Andrew Sum, Paul Harrington, et al., *The New England Economy in Recession: An Assessment of Its Economic and Social Consequences,* Center for Labor Market Studies, Northeastern University, Boston, 1991.

10 An analysis of employment developments in Massachusetts in the 1990s can be found in Andrew Sum, Paul Harrington, Neeta Fogg, et al., *The State of the American Dream in Massachusetts, 2002*, especially Chapters 2 and 3.

11 During the deep economic downturn in the state from 1988 to 1992, males also experienced an above-average hit in their employment ranks. Male employment fell by 123,000, or nearly 8 percent, versus 56,000, or a 4 percent loss for women over this four-year period.

12 See Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin and Sheila Palma, "The Great Recession of 2007-09 and the Blue Collar Depression," *Challenge*, July-August 2010, pp. 6-24

13 For a review of economic developments in the 1980s, see David R. Lampe (editor), *The Massachusetts Miracle*, MIT Press, Cambridge, MA, 1988.

14 The civilian non-institutional population excludes resident members of the nation's armed forces and inmates of institutions such as jails, prisons, mental hospitals, and nursing homes. The E/P ratio is influenced by both the civilian labor force participation rate and the unemployment rate. Algebraically, $E/P = L/P * E/L$; where L/P = labor force participation rate; $E/L = 1 - U/L$ where U/L = the unemployment rate.

15 The number of employed teens dropped sharply over the past decade despite growth in their population numbers, while the drop in employed 30-to-34-year-olds was partly driven by a decline in their population level and by a decline in their E/P ratio.

16 For a review of the early economic and social well-being of the Baby Boom generation, see Landon Y. Jones, *Great Expectations and the Baby Boom Generation*, Coward, McCann, and Geoghegan, New York, 1980.

17 This group includes high school students 16 and older.

18 See Andrew Sum and others, *The State of the American Dream in Massachusetts, 2002,* especially Chapter Three, pp. 72-74.

19 The Census Bureau shifted to the new Standard Occupational Classification (SOC) system in coding jobs in 2000.

20 See Andrew Sum, Ishwar Khatiwada, with Sheila Palma, "The Age Twist in Employment Rates in the US, 2000-2004," *Challenge*, July-August 2005, pp. 51-68.

21 For findings of a recent study on the fiscal costs of worker dislocation on national and state budgets, see Andrew Sum, Ishwar Khatiwada, and Mykaylo Trubskyy, "The Great Dislocation of 2007-09 and Its Impacts on US Workers," report prepared for Senior Service America, Silver Springs, MD, 2011.

22 For a review of underemployment problems in the U.S. during the Great Recession, see Andrew Sum and Ishwar Khatiwada, "The Nation's Underemployed in the Great Recession of 2007-2009," *Monthly Labor Review*, November 2010, pp. 3-15.

23 For an ethical assessment of the costs of underemployment, see David B. Couturie, "I Still Desire to Work: Franciscans and the Problem of Underemployment in America," Franciscan Action Network.

24 See Sum and Khatiwada, (2010).

25 See Andrew Sum, Ishwar Khatiwada, and Neeta Fogg, "The Personal Economic Benefits of Full-Time Versus Part-Time Work Among Employed Young High School Graduates in the US," Jobs for America's Graduates, Alexandria, Virginia, 2005; Andrew Sum, Neeta Fogg, and Garth Mangum, "Confronting the Youth Demographic Challenge," Sar Levitan Center for Social Policy Studies, Johns Hopkins University, Baltimore, 2000.

26 See Marta Tienda and others, "Employment and Wage Prospects of Black, White, and Hispanic Women," in *Human Resource Economics and Public Policy: Essays in Honor of Vernon Briggs*, (Editor: Charles J. Whalen), W.E. Upjohn Institute for Employment Research, Kalamazoo, MI, 2010.

27 For a detailed overview of the sources of large CPS-CES differences in employment changes over the 1992-2000 period in New England, see Andrew Sum and others, "Job Growth in New England During the Economic Recovery and Economic Boom from 1992-2000: The Case of the Missing 500,000 Workers," report prepared for the US Department of Labor, New England Regional Office of the Employment and Training Administration, Boston, October 2002.

28 For findings on the employment experiences of 15 year olds in the US in the late 1990s, see US Department of Labor, Bureau of Labor Statistics, "Employment Experiences of Youths: Results from the First Three Years of a Longitudinal Survey," Washington, D.C., December 20, 2001.

29 See Sum and others (2002).

30 This unpaid family employee must work at least 15 hours to be counted as employed in the CPS survey.

Chapter Five

Labor Market Problems

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Andrew Sum

Introduction

As findings in the previous chapters have indicated, the state's labor markets failed to provide any new aggregate job opportunities for the resident labor force over the past decade. Younger workers (under 30), males, the less educated, and blue-collar workers fared the worst over the past 10 years. The steep deterioration in their labor market fortunes would be expected to create growing problems for many, though not all, Massachusetts workers. In this chapter, we will examine changes in the magnitude, incidence, and severity of the labor market problems encountered by the state's workforce, including unemployment, underemployment, hidden unemployment, and mal-employment.[1] Each of these labor market problems will be discussed separately and combined into a joint pool of underutilized labor whose size and composition will be estimated and analyzed.

Unemployment in Massachusetts

The labor market problem receiving the most attention from the media, most labor market analysts, and state and local policymakers is the unemployment rate. The official unemployment rate measures the percentage of the active civilian labor force who are currently jobless (no paid work in the reference week of the survey), have actively looked for work in the past four weeks, and are currently available to take a job.[2] Their joblessness reduces the output of the state economy — not only through the lost earnings and incomes of the jobless, but also through their reduced purchasing power for goods and services, thereby reducing the demand for other workers.

Over the past few decades, the unemployment rate of the state has been characterized by extraordinarily volatile swings often far exceeding those faced by the nation.[3] During the very strong labor market conditions of the mid to late 1980s, the state encountered unemployment rates well below those of the nation. By 1988, the unemployment rate in Massachusetts had fallen to 3.3 percent, the seventh lowest among the 50 states. Five of the six New England states (all but Maine) had unemployment rates in 1988 that fell in the bottom seven states across the nation. The end of the extraordinary labor market boom in 1988 was followed by a massive increase in the state's unemployment rate and a severe deterioration in its comparative unemployment position over the next three years. By 1991, the state's unemployment rate had jumped to 9.1 percent, the third highest in the nation, exceeded only by Michigan and West Virginia. Starting in 1992, however, the state resumed job growth, and high levels of job creation, combined with relatively low rates of labor force growth, helped push down the unemployment rate of the state steadily to 5.4 percent by mid-decade (1995) and to 2.7 percent in 2000, the lowest in Massachusetts over the 44-year period for which CPS state unemployment rates are available. The 2.7 percent unemployment rate in 2000 was the fourth lowest among the 50 states.

Following the national economic recession of 2001 and a largely jobless recovery in Massa-

Table 5-1:

Trends in Annual Average Unemployment Rates in Massachusetts and Rank among the 50 States, 2000-2010

YEAR	UNEMPLOYMENT RATE	RANKING AMONG 50 STATES
2000	2.7%	4th lowest
2001	3.7%	10th lowest
2003	5.8%	28th lowest
2005	5.0%	23rd lowest
2007	4.7%	32nd lowest (tied)
2008	5.4%	25th lowest (tied)
2009	8.4%	26th lowest (tied)
2010	8.5%	21st lowest

Source: US Bureau of Labor Statistics, Geographic Profiles of Employment and Unemployment

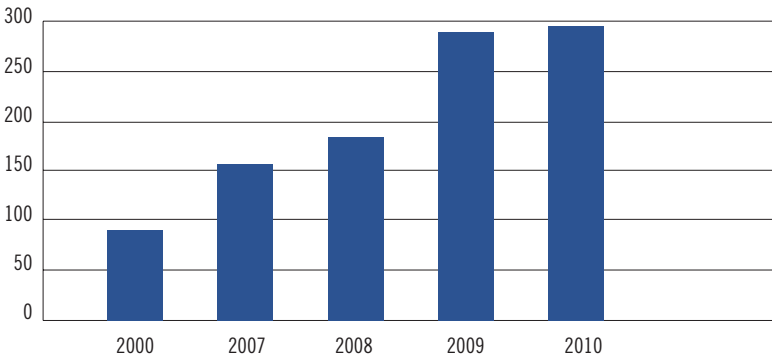
Table 5-2:

Comparisons of Unemployment Rates in Massachusetts and the US, 2000-2010

YEAR	MA	US	MA – U.S
2000	2.7%	4.0%	-1.3%
2003	5.8%	6.0%	-.2%
2005	5.0%	5.1%	-.1%
2006	5.1%	4.7%	.4%
2007	4.7%	4.7%	.0%
2008	5.4%	5.8%	-.4%
2009	8.4%	9.3%	-.9%
2010	8.5%	9.7%	-1.2%

Chart 5-1:

Trends in Total Unemployment in Massachusetts, Selected Years, 2000 to 2010 (numbers in 1000s)



chusetts, the unemployment rate jumped to 5.8 percent in 2003, only slightly below the US average of 6.0 percent (see Tables 5-1 and 5-2). The unemployment rate changed from 4th lowest in the nation in 2000 to 28th lowest in 2003. But high levels of domestic out-migration reduced labor force growth, helping to keep down unemployment. The restoration of job growth after 2003 helped push the state's unemployment rate back down to 4.7 percent in 2007, exactly tied with the unemployment rate of the nation. Unemployment, however, rose very sharply in the state over the next two years, reaching 8.4 percent in 2009 and remaining at 8.5 percent in 2010. The national unemployment rate increased at an even higher rate, rising to 9.7 percent in 2010. The state's unemployment rate in this latter year was 1.2 percentage points below the nation's, and the state ranked 21st lowest on this measure, its best comparative performance since 2002.

The sharp rise in the unemployment rate over the 2007-2010 period substantially increased the pool of unemployed workers in the state. The annual average number of unemployed workers nearly doubled, from 158,000 in 2007 to just under 300,000 in 2010 (Chart 5-1). There were nearly 3.3 times as many unemployed persons in the state during an average month in 2010 than there were in 2000. Both the nature and severity of these unemployment problems also changed markedly over the decade. Far more of the unemployed were permanent job losers (displaced workers) who faced considerably longer durations of unemployment.

Trends in Unemployment Rates by Gender

Over the past decade, both Massachusetts and the nation have witnessed a substantial shift in the structure of unemployment rates by gender, with males being more adversely affected by the job losses in the recessionary years of the early

part of the decade and in the Great Recession of 2007-2009.[4] In 2000, both men and women in Massachusetts faced very low, statistically identical unemployment rates of 2.6 percent and 2.7 percent, respectively (Table 5-3 and Chart 5-2). Over the next three years, which were marked by heavy payroll job losses, the unemployment rates of both gender groups jumped sharply, with men now facing a higher unemployment rate than women (6.4 percent versus 5.2 percent). As the labor market of the state began to recover over the next four years, the unemployment rates of both gender groups fell, but men continued to face a higher unemployment rate than women in 2007 (5.0 percent versus 4.1 percent).

The onset of the recession in Massachusetts during 2008 and the steep job losses in many goods-producing industries sharply curtailed job opportunities for blue-collar workers and drove up the male unemployment rate to the 9-10 percent range in 2009, 2010, and the first five months of 2011.[5] While male employment has been rising over the past year (2010-2011), the male unemployment rate continued to substantially outpace that of women during the first five months of 2011 (9.2 percent for men versus 5.9 percent for women).[6] During the past decade (2001-2010), the male unemployment rate exceeded that of women every single year.[7] These high rates of unemployment among men also had an adverse impact on their degree of attachment to the labor force over the decade. The male labor force participation rate dropped from 74 percent in 2000 to slightly below 71 percent in 2010, with all of the decline attributable to men under the age of 55. Males who were 55 and older were more likely to be in the labor force in 2010 than they were at the beginning of the decade.

Unemployment rates in Massachusetts also vary widely by educational attainment, with the percentage-point gaps widening considerably over the past decade. At the peak of the state's labor market boom in 2000, every educational attainment group except high school dropouts faced very low rates of unemployment, ranging from 3 percent among high school graduates to 2 percent for bachelor's degree holders to a low of 1 percent for those workers with a master's or more advanced academic degree (Table 5-4). By mid-decade, unemployment rates were higher for each educational group; however, the percentage-point increases were much higher at the bottom of the educational distribution than at the top. For example, the unemployment rate of high school dropouts was nearly 5 percentage points higher in 2005 than it was in 2000, and high school gradu-

Table 5-3:

Trends in the Unemployment Rates of Men and Women in Massachusetts, Selected Years, 2000–2011

YEAR	MEN	WOMEN	MEN – WOMEN
2000	2.6%	2.7%	-.1%
2003	6.4%	5.2%	1.2%
2004	5.9%	4.2%	1.7%
2007	5.0%	4.1%	.9%
2009	9.7%	7.0%	2.7%
2010	9.6%	7.5%	2.1%
2011[1] (January–May)	9.2%	5.9%	3.3%

[1] 2011 estimates are based on the monthly CPS public use files for January-May, not seasonally adjusted

Chart 5-2:

Comparisons of the Unemployment Rates of Men and Women in Massachusetts, Selected Years, 2000-2011

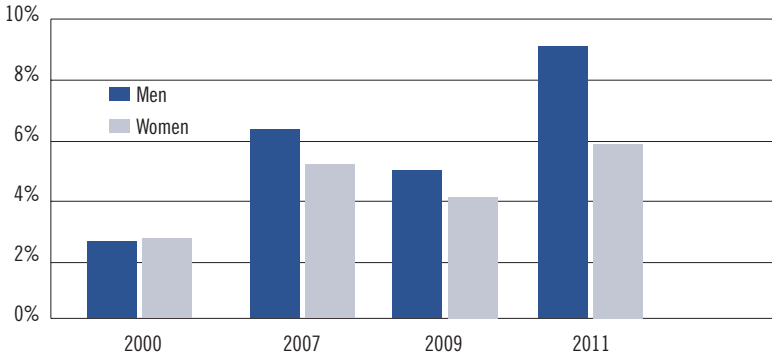


Table 5-4:

Trends in Unemployment Rates of Massachusetts Workers by Educational Attainment, 2000, 2005, and 2010 (annual averages)

GROUP	2000	2005	2010	PERCENTAGE POINT CHANGE, 2000–2010
<12 years or 12 years, no diploma	6.8%	11.6%	19.0%	12.2%
High school diploma/GED	3.0%	6.0%	11.9%	8.9%
Some college, including associate's degree	2.3%	4.7%	9.2%	6.9%
Bachelor's degree	1.9%	4.0%	5.5%	3.6%
Master's or higher degree	1.1%	1.6%	3.0%	1.9%

Source: 2000, 2005, and 2010 monthly CPS public use files, tabulations by authors

Chart 5-3:

The Unemployment Rates of Massachusetts Workers by Educational Attainment, 2010 (annual averages)

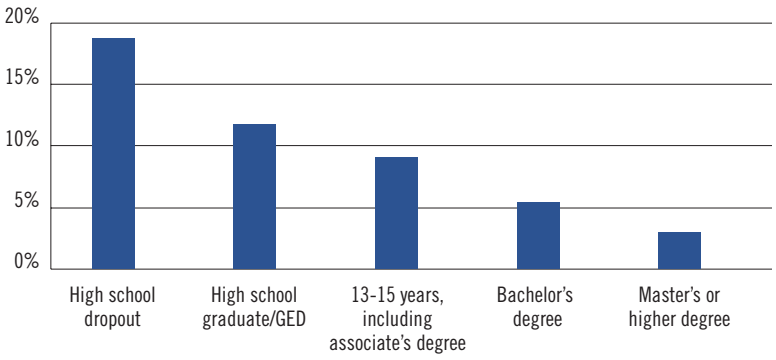
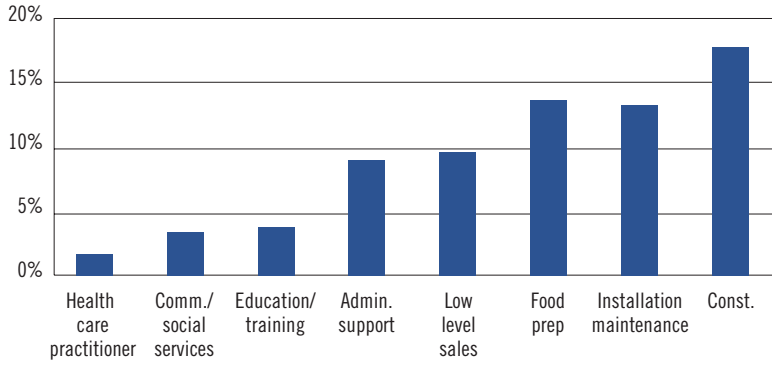


Chart 5-4:

Unemployment Rates of Massachusetts Workers in Selected Major Occupational Groups, 2010 (annual average)



ates experienced a rise of 3 percentage points in their unemployment rate. In contrast, those workers with a master's or higher degree saw their unemployment rate rise by only one-half of a percentage point over this time period, to 1.6 percent in 2005. The unemployment rate of high school dropouts in 2005 was seven times higher than that of those workers with an advanced academic degree.

Following 2007 and the onset of the labor market recession in the spring of 2008, unemployment rates rose very sharply for workers in every educational attainment group. Again, the percentage-point increases in these unemployment rates varied considerably across educational groups, being highest for those workers with the least amount of formal schooling and smallest for those with a master's or higher degree. In 2010, the unemployment rates of Massachusetts workers varied considerably (Chart 5-3). They ranged from a high of 19 percent for those lacking a high school diploma or GED, to 12 percent for high school graduates, to lows of 5.5 percent for bachelor's degree holders, and only 3 percent for those with a master's or higher degree. The unemployment rate of high school dropouts was 6.3 times as high as the unemployment rate for the most highly educated group workers in the state. Those workers with no post-secondary degrees also experienced rising rates of underemployment and hidden unemployment over the 2007-2010 period.

The substantial shifts in employment by industry and occupational area over the past decade have had a very dramatic impact on the structure of unemployment rates. In the full employment environment of 2000, every major occupational group of workers in Massachusetts experienced very low unemployment (Table 5-5). Rates varied from less than 1 percent for engineers, health practitioners, community/social service professionals, education and training professionals, installation/maintenance craft workers, and protective service

workers (police, firemen, sheriffs) to about 4 percent for workers in food prep/serving, cashiers/retail sales clerks, construction crafts, and transportation/material moving.

By 2010, unemployment rates of Massachusetts workers had risen for every major occupational group, but the percentage-point increases varied markedly. Due to strong increases in employment in health care, social service, and education, workers in these industries fared well in avoiding unemployment. But those employees who worked in key goods-producing industries (construction, manufacturing), transportation, and non-professional services faced very high increases in their unemployment rates at the end of the decade. In 2010, the unemployment rates of Massachusetts workers varied widely, with lows of 1.7 percent to 3.8 percent for professional workers in health care, community/social service, and education/training; 9 percent to 10 percent for lower-level sales (cashiers, sales clerks) and office support workers; and 14 percent to 18 percent for food prep/serving, installation/maintenance crafts, and construction crafts (Chart 5-4). The unemployment rate of construction craft workers in Massachusetts during 2010 was 10 times higher than it was among health care professionals. This relative gap in unemployment rates was among the highest ever recorded in Massachusetts over the past 44 years for which CPS-based unemployment data are available.

Table 5-5:

Comparisons of the Unemployment Rates of Massachusetts Workers by Major Occupational Group in 2000 and 2010 (annual averages)

OCCUPATIONAL GROUP	2000	2010	ABSOLUTE CHANGE
Management	1.6%	4.5%	2.9%
Business and financial	1.8%	4.6%	2.8%
Computer and math	1.5%	7.8%	6.3%
Community/social service	.9%	3.4%	2.5%
Engineers and architects	.9%	6.2%	5.3%
Education and training	.5%	3.8%	3.3%
Legal	2.7%	7.4%	4.7%
Health care practitioners	.6%	1.7%	1.1%
Building and grounds cleaners	2.3%	15.1%	12.8%
Food prep/serving	4.2%	13.8%	9.6%
Health care support	3.0%	5.9%	2.9%
Personal care	3.7%	9.7%	6.0%
Protective services	.5%	3.5%	3.0%
Low-level sales	4.2%	9.7%	5.5%
Office support	2.8%	9.1%	6.3%
Construction and extraction	4.2%	18.0%	13.7%
Installation/maintenance	.9%	13.4%	12.5%
Production	2.7%	11.1%	8.4%
Transportation/material moving	4.2%	10.5%	6.3%
All	2.7%	8.5%	5.8%

The Changing Nature and Duration of Unemployment in Massachusetts

Unemployment is not a homogeneous problem. It has multiple dimensions, including the type of unemployment (job leaver, job loser, new entrant or re-entrant) and the duration of the existing unemployment spell in continuous weeks of unemployment. The US Bureau of Labor Statistics classifies unemployment into five different categories: a voluntary job leaver, a job loser on temporary layoff, a job loser whose job was permanently lost, a job loser whose temporary job ended, and a new entrant/re-entrant into the labor force. We have combined permanent job losers and those whose temporary job ended into one category.[8] Trends in the number of unemployed persons in Massachusetts who were permanent job losers and their share of the total unemployed population over the 2000-2010 period are displayed in Table 5-6.

In 2000, only 38 percent of the much smaller number of unemployed in the state were permanent job losers (35,140). Their numbers rose in the recessionary environment of the early years of the decade and then fell back to about

Table 5-6:

Trends in Total Unemployment and Permanent Job Loser Unemployment in Massachusetts, Selected Years, 2000-2010

YEAR	TOTAL UNEMPLOYED	PERMANENT JOB LOSER UNEMPLOYED	PERCENT OF UNEMPLOYED THAT ARE PERMANENT JOB LOSERS
2000	91,240	35,140	38.5%
2006	172,570	73,859	42.8%
2007	158,700	55,886	35.2%
2008	185,928	77,354	41.7%
2009	290,790	169,853	58.4% 4th highest
2010	297,487	169,992	57.1% 5th highest among 50 States

Source: Monthly CPS household surveys, public use files, tabulations by authors

Chart 5-5:

Dislocation Rates of Massachusetts Workers between 2007 and 2009 by Gender (displaced per 100 workers)

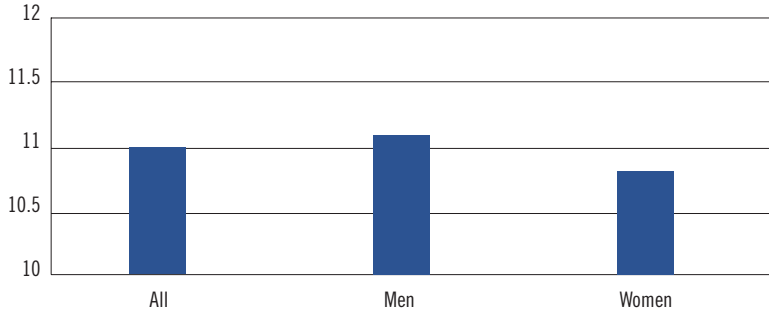
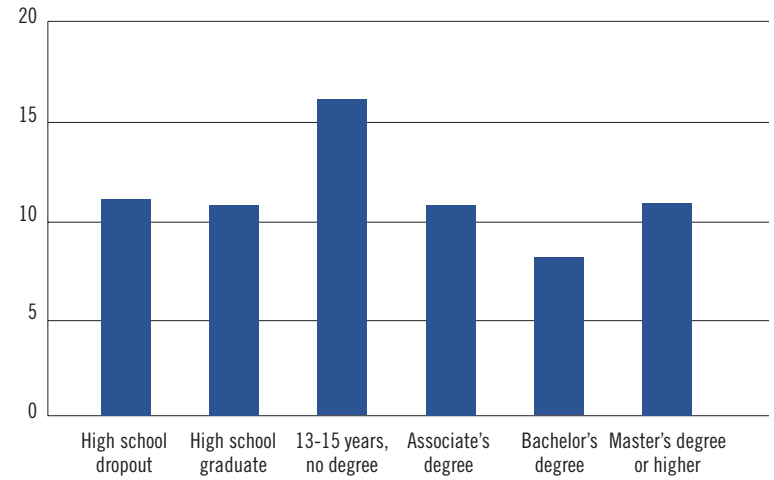


Chart 5-6:

Dislocation Rates of Massachusetts Workers between 2007 and 2009 by Educational Attainment (displaced per 100 workers)



56,000 during the job recovery that ended in 2007. Over the next three years, however, their numbers exploded. By 2009, there were nearly 170,000 unemployed permanent job losers, and their numbers remained constant in 2010. This group of unemployed, permanent job losers was five times higher in 2010 than in 2000, placing an enormous burden on the state's unemployment insurance system and other transfer programs, including food stamps and Medicaid.

The substantial increase in the number of unemployed workers who were permanent job losers over the 2007–2010 period was heavily influenced by the high levels of worker dislocation in our state and the nation during the Great Recession of 2007-2009. The January 2010 dislocated worker survey of the US Bureau of Labor Statistics revealed that 337,056 workers (ages 20 and older) in Massachusetts were permanently displaced from their jobs over the 2007-2009 time period.[9] The incidence of dislocation was basically identical for adult men and women in our state (Chart 5-5). Dislocation problems were quite severe among workers in each major educational group. Rates reached the double digits for all groups except bachelor's degree holders, who encountered an 8 percent rate of dislocation. The highest rates of worker dislocation were among high school dropouts (15 percent) and those workers with one to three years of post-secondary schooling but no degree (16 percent) (Chart 5-6). Still, only 7 percent of all dislocated workers in Massachusetts were high school dropouts.

Both nationally and in our state, many of these dislocated workers had a difficult time regaining employment by the time of the January 2010 dislocated worker survey. Slightly under 49 percent of all national dislocated workers were re-employed in January 2010, the lowest re-employment rate in the 26-year period over which the US Bureau of Labor Statistics has been conducting dislocated worker surveys.[10] Similar findings on re-employment experiences prevailed here in

Massachusetts. Slightly under 50 percent of all dislocated workers in the state were re-employed in January 2010, with men faring better than women in regaining employment (56 percent versus 43 percent) (Table 5-7.) The unemployment rate among all dislocated workers in January 2010 was over 44 percent, with both men and women experiencing very high rates of open unemployment at 40 percent and 50 percent, respectively. The estimated total number of unemployed, dislocated workers in January 2010 was 134,000. They accounted for 40 percent of all of the unemployed workers in the state during that month, a record high proportion.

The re-employment rates of these dislocated workers were lowest for high school dropouts (14 percent) and highest for those with a master's or higher degree (68 percent). Unemployment rates of dislocated workers were very high among all educational groups. While dropouts fared the worst, with an unemployment rate of 83 percent, all other groups faced unemployment rates ranging from 29 percent to 60 percent. These are the highest unemployment rates on record over the 26 years for which we have dislocated worker data. The overall unemployment rate (45 percent) for dislocated workers in our state in January 2010 was five times as high as that for all workers (9 percent) in our state in that month.

The Changing Durations of Unemployment and the Historical Rise in Long-Term and Very Long-Term Unemployment in Massachusetts

The character of unemployment problems in Massachusetts and the US has also changed markedly on one other key dimension over the past decade. The average length of ongoing unemployment spells (in both median and mean weeks) has increased substantially over the past 10 years, driving long-term unemployment rates and levels to new highs.

Table 5-7:

Re-Employment Rates and Unemployment Rates of Dislocated Workers in Massachusetts at the Time of the January 2010 Dislocated Worker Survey by Gender

VARIABLE	ALL	MEN	WOMEN
Re-employment rate	49.6%	55.6%	43.0%
Unemployment rate	44.5%	40.2%	49.7%

Table 5-8:

Re-Employment Rates and Unemployment Rates in January 2010 of Massachusetts Workers Who Were Displaced between 2007 and 2009

EDUCATIONAL ATTAINMENT	RE-EMPLOYMENT RATE	UNEMPLOYMENT RATE
High school dropout	14.0%	82.9%
High school graduate	54.4%	41.4%
Some college	48.0%	45.0%
Associate's degree	39.7%	60.3%
Bachelor's degree	48.4%	44.2%
Master's or higher degree	67.6%	29.0%

Chart 5-7:

Trends in the Median Durations of Unemployment Spells in Massachusetts, 2000-2011

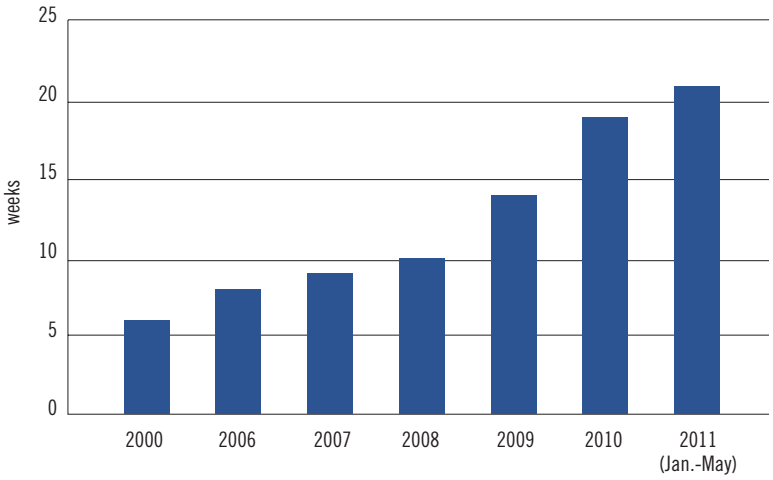


Chart 5-8:

Trends in the Mean Durations of Unemployment Spells in Massachusetts, 2000-2011

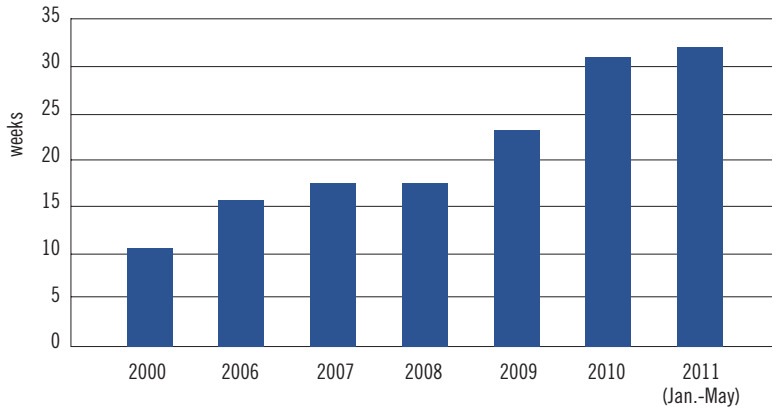


Table 5-9:

Mean Duration of Unemployment Spells in Massachusetts and Rank among the 50 States, Selected Years, 2000–2011

YEAR	MEAN DURATION (WEEKS)	STATE RANKING
2000	11.0	13th lowest
2007	17.8	39th lowest
2008	18.4	32nd lowest
2009	24.0	34th lowest (tied)
2010	31.6	28th lowest
2011(January-May)[1]	33.2	23rd lowest (tied)

[1] The 2011 estimates are based on the January-May CPS public use surveys, data files, and tabulations by the authors.

Trends in the median durations of unemployment in Massachusetts over the 2000-2010 time period are displayed in Chart 5-7. The median duration of unemployment in the state stood at only six weeks in 2000, when the state's unemployment rate hit an all-time low of 2.7 percent. The median duration rose modestly through the decade as the overall unemployment rate increased but stood at only eight to nine weeks in 2006 and 2007. Following 2008, however, the median duration of unemployment exploded, rising to 19 weeks in 2010 and to 21 weeks in the first five months of 2011. Median durations of unemployment in both 2010 and 2011 were three to four times as high as they were in 2000.

Findings on time trends in the mean durations of unemployment over the past decade are displayed in Chart 5-8 and Table 5-9. The mean durations (the arithmetic average) of unemployment spells always exceed the median duration, since the probability of finding a new job tends to diminish as the length of one's unemployment spell rises. If the probability of finding new employment were independent of the duration of unemployment, then the mean and median duration would be identical to one another. Such, however, is not the case, either in our state or in the nation. Mean durations of unemployment also have risen markedly over the past decade. In 2000, the mean duration of unemployment in our state was 11 weeks, five weeks higher than the median (Chart 5-8). In 2007, the mean duration had risen to 18 weeks, and it stayed there in 2008 as aggregate unemployment levels began to rise steadily. By 2010, the mean duration had increased to 32 weeks, and it reached 33 weeks in the first five months of 2011, a new record high for the state. The mean duration of unemployment in 2011 in our state was three times as high as that of 2000.

Our state's ranking among the 50 states in terms of the mean duration of unemployment worsened from 2000 through 2007 but then improved over the past four years, despite a steep increase in the mean duration of unemployment. In calendar year 2000, our state's mean duration of unemployment (11 weeks) ranked 13th lowest among the 50 states (Table 5-9). Our ranking deteriorated over the next seven years as unemployment increased in our state. In 2007, our state's mean duration of just under 18 weeks ranked 39th lowest. While the mean duration of unemployment jumped sharply from 18.4 weeks in 2008 to 33.2 weeks in 2011, our state's ranking actually improved from 32nd lowest to 23rd lowest in 2011, about right in the middle of the state distribution. In 2011 (January-May), nine

states had mean durations of unemployment at or above 40 weeks, with Illinois, Arizona, and Florida having the highest mean durations of 44 to 45 weeks.

The information on the length of the ongoing spells of unemployment among the unemployed can be used to estimate the percentage of the unemployed that are long-term unemployed or very long-term unemployed. In previous research, we referred to those individuals who were unemployed for more than 15 weeks as long-term unemployed and those jobless for more than 26 weeks as "hard core unemployed."[11] In recent years, the US Bureau of Labor Statistics has defined the "long-term unemployed" as those out of work for more than 26 consecutive weeks. Many researchers on unemployment in the OECD nations have used 52 weeks as the cutoff for the long-term unemployed.[12] Prior to the end of the past decade, very few of the unemployed in either Massachusetts or the US would have been classified as long-term unemployed on the basis of the OECD definition.

In calendar year 2000, only one of every eight unemployed persons in Massachusetts would have been categorized as long-term unemployed using the BLS definition. Their share of the resident unemployed population had risen to one-fifth in 2007 and 2008 and then experienced explosive growth over the next two years, rising to just under 42 percent in 2010, a historical high (Table 5-10).[13] By combining the estimates of the total number of unemployed with the share of the unemployed that were long-term unemployed, we can generate estimates of the long-term unemployed in the state over the past decade. In 2000, due to a combination of low aggregate unemployment and a very low share of the unemployed who were out of work for more than 26 consecutive weeks, there were only 11,000 long-term unemployed persons in the state during an average month. By 2007, the number of long-term unemployed had nearly tripled to 31,000.

Table 5-10:

Trends in the Percent of Unemployed Persons in Massachusetts that Were Long-Term and Very Long-Term Unemployed, Selected Years, 2000-2010

YEAR	PERCENT LONG-TERM (27+ WEEKS)	PERCENT VERY LONG-TERM (52+ WEEKS)
2000	12.6%	3.6%
2006	16.4%	7.9%
2007	19.6%	10.4%
2008	20.3%	9.1%
2009	31.6%	16.2%
2010	41.7%	29.7%

Chart 5-9:

Trends in the Number of Long-Term Unemployed in Massachusetts, Selected Years, 2000-2010 (numbers in 1000s)

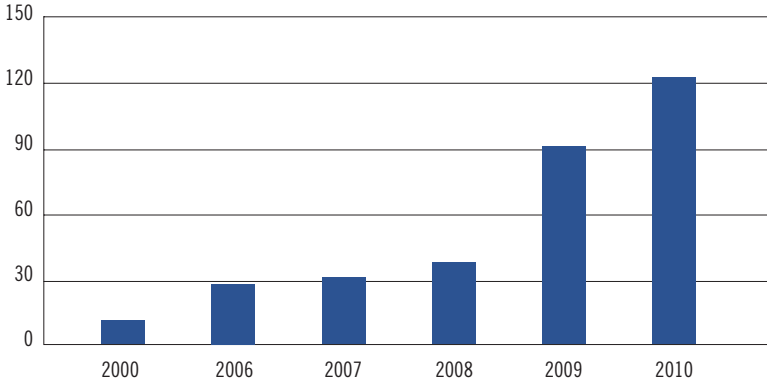
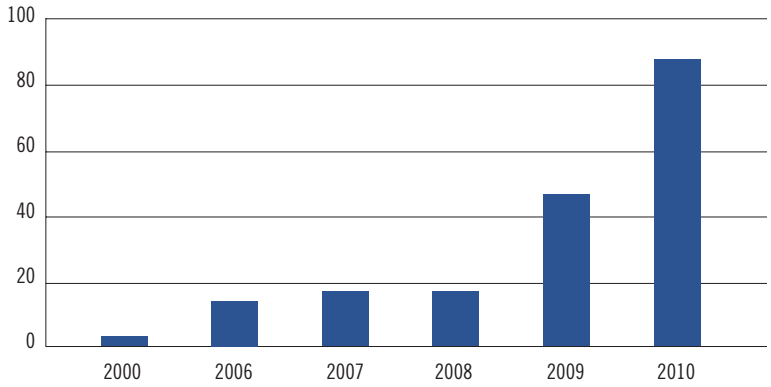


Chart 5-10:

Trends in the Number of Very Long-Term Unemployed in Massachusetts, Selected Years, 2000-2010 (numbers in 1000s)



Over the next three years, the number of long-term unemployed would quadruple, rising to 124,000 in 2010. During that latter year, there were 11 times as many long-term unemployed as there were in our state in 2000.

The rise in the share of the unemployed that were very long-term unemployed was even more spectacular. In 2000, only 3 percent of the unemployed had been out of work for one year or longer. By 2007 and 2008, their share had risen to one out of 10. Over the next two years, the share of the state's unemployed who were out of work for more than a year would triple in size to nearly 30 percent. The estimated number of very long-term unemployed in the state rose from only 3,000 in 2010 to 17,000 in 2007 to nearly 90,000 in 2010. There were 30 times as many very long-term unemployed workers in 2010 than there were in 2000.

This extraordinary rise in the number of long-term and very long-term unemployed persons in our state over the past decade has had a number of severe consequences for these workers, their families, and the rest of society. Long-term unemployment increases the weekly and annual earnings losses of the unemployed. Earlier national research has shown that the longer the spell of unemployment, the greater the likelihood of the individual withdrawing from active labor force participation, thereby reducing the size of the resident labor force.[14] Lower earnings of the unemployed reduce the disposable incomes of their families even after taking unemployment insurance benefits into account, thereby reducing the consumption purchases of these families and increasing income inadequacy problems. The reduced earnings of the long-term unemployed lowers payments for payroll taxes, federal and state income taxes, and state sales taxes. Dependence on unemployment insurance and other transfers, such as food stamps, rental subsidies, and Medicaid raises fiscal burdens on the rest of society and exacerbates both federal and state budget deficits. For the unemployed, enduring long spells without work also increases anxiety, mental depression, suicidal behavior, and social isolation.[15]

Labor Underutilization Problems and the Underutilization Rate in Massachusetts

The labor market problems of workers often go well beyond those of open unemployment.[16] Other workers experience problems of underemployment (working part-time but wanting a full-time job); hidden unemployment, also known as the labor force reserve (persons wanting a job but not actively looking for work); mal-employment (working in a job that does not effectively utilize one's education/technical skills/literacy skills); and low weekly wages from full-time employment that keep workers and their families below selected income adequacy thresholds.[17]

In this section, we will track changes in the numbers of open unemployed, underemployed, and hidden unemployed in Massachusetts over the 2000-2010 decade (see Chart 5-11). The combined pool of these three groups of workers will be referred to as the underutilized labor force (Chart 5-11). Dividing this pool of underutilized labor by the adjusted civilian labor force yields the value of the labor underutilization rate.[18]

Trends in labor underutilization rates in Massachusetts over the past decade are displayed in Chart 5-12. In 2000, at the height of the labor market boom of the past decade, the labor underutilization rate stood at only 6.1 percent. Following the national recession of 2001 and the largely jobless recovery in the state through 2004, the labor underutilization rate rose to 9.4 percent in 2004 and to 9.7 percent in 2005.[19] The labor force underutilization rate then fell modestly to 9.0 percent in 2007, as state labor markets improved, but then jumped considerably to 15.4 percent in 2010, the highest in the past 20 years.

This underutilization rate was 2.5 times as high as it was in 2000.

What types of labor market problems do the underutilized face in our state? Estimates of the number of Massachusetts workers experiencing each type of labor underutilization problem in 2000 and 2010 are displayed in Table 5-11. The annual average number of unemployed in 2000 was only 91,000. By 2010, the pool of unemployed had more than tripled in size, rising to 297,500. Not only had the average monthly number of unemployed increased quite substantially, but, as noted above, the severity of their unemployment problems as measured by the median and mean durations of their spells of unemployment had also risen quite sharply, leading to much larger annual earnings losses.

The number of underemployed workers also was more than three times higher in 2010 than in 2000. There were just under 171,000 underemployed individuals in 2010 versus 56,000 in 2000. Out of every 1,000 employed persons in 2010, approximately 53 were underemployed. This has a high cost. Underemployed residents typically work only half the hours of the average full-time employed person and make less per hour. As a result, they earn less than half the gross weekly wage of their comparable full-time employed counterparts.[20] Part-time workers also tend to receive fewer employee benefits (health care coverage, pension plan coverage, paid vacations), and they receive less training from their employers, especially formal training, literacy training, computer training, and apprenticeship training.

The number of working-age residents in the labor force reserve also was higher in 2010 than in 2000, but the relative size of the increase in their numbers was well below that of the unemployed and underemployed. The labor force reserve rose from 57,500 in 2000 to 87,400 in 2010 — an increase of just under 30,000, or 50 percent. The combined pool of underutilized workers in 2010 was equal to 555,700 — an increase of nearly 351,000, or 170 percent, relative to 2000. This number of underutilized workers excludes the mal-employed. As will be shown in a following section, the estimated number of mal-employed college graduates (ages 20 and older) with an associate's or higher degree was close to 370,000 in 2010. Their inclusion in the pool of underutilized workers would have raised the number of underutilized above 900,000.[21]

While the combined pool of underutilized workers in Massachusetts increased by slightly more than 170 percent between 2000 and 2010, the adjusted civilian labor force rose by only 6 percent over the decade to a level of 3.598 million.

Chart 5-11:

Identifying the Pool of Unutilized and Underutilized Labor in Massachuetts

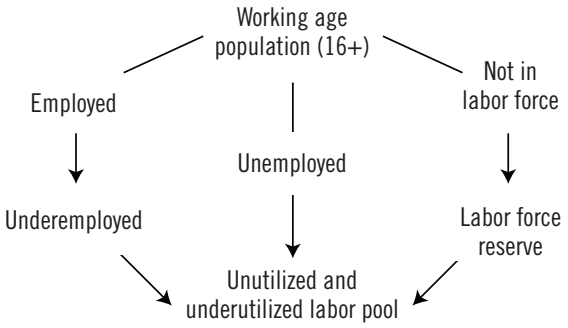


Chart 5-12:

Trends in Labor Underutilization Rates in Massachusetts, 2000-2010 (annual averages)

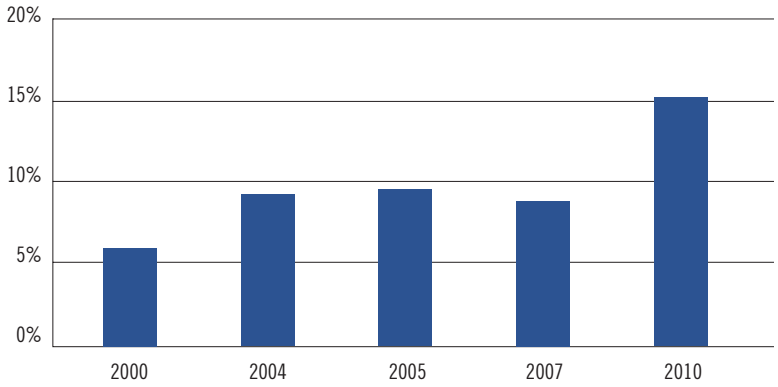


Table 5-11:

Estimating the Pool of Unutilized and Underutilized Labor in Massachusetts in 2000 and 2010

	2000	2010	CHANGE 2000–2010	RATIO OF 2010/2000
Unemployed	91,200	297,500	206,300	3.2
Underemployed	56,200	170,900	114,700	3.0
Labor force reserve, or hidden unemployed	57,500	87,400	29,900	1.5
Total pool of underutilized labor	204,900	555,700	350,800	2.7
Adjusted civilian labor force[1]	3,387,000	3,598,200	211,200	1.06
Labor underutilization rate	6.1%	15.4%	9.3	2.5

[1] The adjusted civilian labor force is the sum of the official civilian labor force (employed plus unemployed) and the labor force reserve

Chart 5-13:

Labor Underutilization Rates in Massachusetts by Gender and Race/Ethnicity, 2010

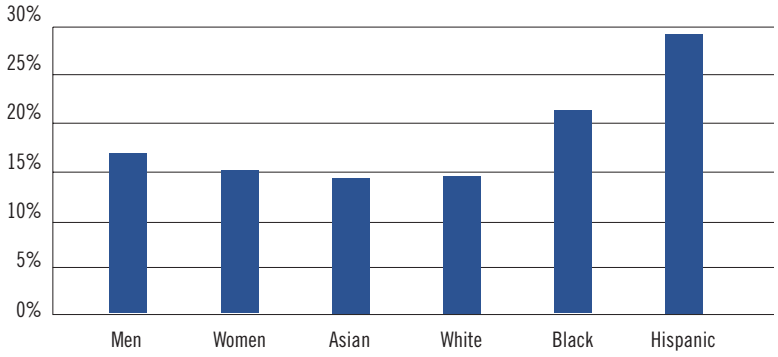
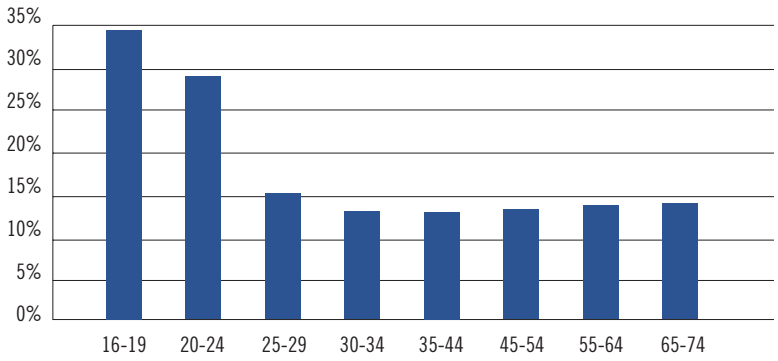


Chart 5-14:

Labor Underutilization Rates in Massachusetts by Age, 2010



The overall labor underutilization rate in 2010 was 15.4 percent, 2.5 half times as high as it was in 2000, when only 6 percent of the state's workers would have been classified as underutilized.

The Incidence of Labor Underutilization Rates across Subgroups

To identify how the severity of labor underutilization problems varied across key demographic and socioeconomic subgroups of Massachusetts workers in 2010, we estimated underutilization rates by gender, race/ethnicity, age, educational attainment, and household income. Males were modestly more likely than women to face an underutilization problem in 2010 (16.3 percent versus 14.6 percent), with all of the difference due to higher unemployment problems among men (Chart 5-13). The underutilization rates varied more widely across the four major race/ethnic groups, ranging from lows of about 14 percent among Asians and white non-Hispanics to highs of nearly 21 percent among black workers and 28 percent among Hispanics. Both black workers (19 percent) and Hispanic workers (16 percent) suffered from double-digit unemployment rates in 2010, and both groups also encountered high rates of underemployment. Seven of every 100 black workers and more than nine of every 100

Hispanic workers were employed part-time for economic reasons.

Similar to the pattern for the nation as a whole, labor underutilization rates in Massachusetts varied quite widely across age groups, falling steadily and steeply with age from the teen years (16-19) through the early to mid 30s. Over 34 percent of the state's teens were underutilized versus 29 percent of those 20 to 24 years old, 15 percent of 25-to-29-year-olds, and 13 percent to 14 percent of those in the 30 to 74 age group. The state's teens were three times as likely to be underutilized as their middle-aged and older peers. Both teens and young adults (20-24) experienced high rates of open and hidden unemployment, and 20-to-24-year-olds also faced a very high rate (10 percent) of underemployment.

Labor underutilization rates of Massachusetts workers in 2010 also varied considerably across both educational attainment and household income groups. The incidence of labor underutilization problems was highest by far at 32 percent among high school dropouts. It fell to approximately 22 percent for high school graduates, 17 percent for those with one to three years of post-secondary schooling (including associate's degree holders), then dropped to slightly below 10 percent for bachelor's degree holders and to 5.6 percent for those workers holding a master's or higher degree. The least well educated group of Massachusetts workers was, thus, nearly six times as likely to be underutilized as the most highly educated group.

The incidence of labor underutilization problems in 2010 also ranged quite considerably across household income groups. The lower the income of the household, the higher the incidence of labor underutilization problems. Lower income tends to be associated with more limited schooling and less accumulated human capital among workers. The labor underutilization rates of Massachusetts workers varied from a high of 38 percent among those living in households with an annual income under $20,000 to 15 percent among those in middle-income households ($40,000-75,000) to a low of 7 percent for those residing in the most affluent households (incomes of $150,000 and higher). The lowest income workers were five times as likely to be underutilized as workers from the most affluent households. The Great Recession of 2007-2009 and its aftermath in both Massachusetts and the US was quite regressive in its impacts on workers and their families, creating widening gaps in labor market problems across income groups.[22]

Chart 5-15:

Labor Underutilization Rates in Massachusetts in 2010 by Educational Attainment (annual averages)

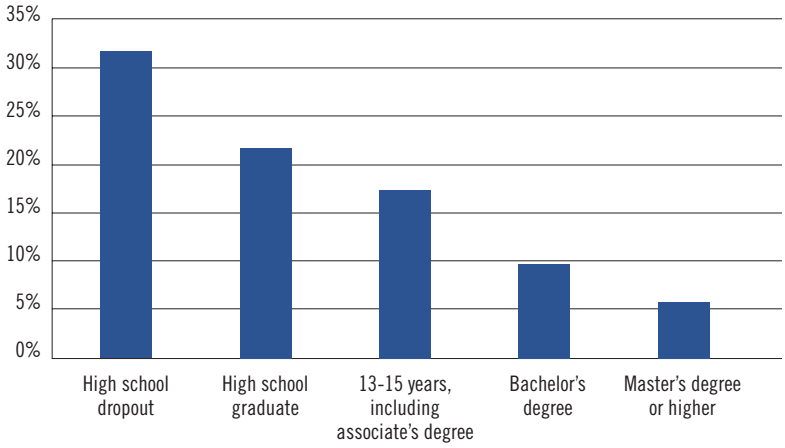
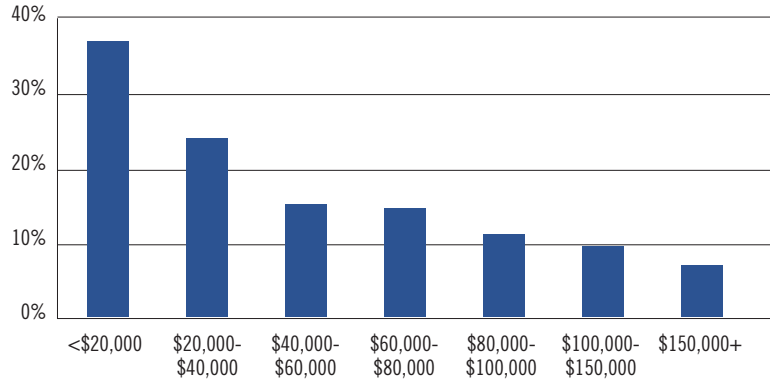


Chart 5-16:

Labor Underutilization Rates in Massachusetts by Household Income, 2010 (annual averages)



Trends in the Incidence of Mal-Employment among College Graduates in Massachusetts

Among the underutilization problems faced by workers in Massachusetts is that of mal-employment, which involves employment in jobs that do not utilize the education or skills or work experience possessed by workers. Mal-employment problems cover a wide array of circumstances, including employment of persons in jobs that do not require them to apply the literacy or numeracy skills that they possess, persons in jobs that don't take advantage of the occupational training and experience they have (carpenters employed as laborers, electricians as cab drivers) and college graduates holding jobs in occupations (sales clerks, waiters/waitresses) that typically do not require the applicant to possess any type of college degree.[23] Being mal-employed substantially reduces the weekly wage and annual earnings returns to investments in literacy, occupational/technical training, and a college education.[24]

Estimates of the share of 20-to-64-year-old college graduates who were mal-employed in Massachusetts over the last decade are displayed in Table 5-12. The methodology used in defining whether a job held by an employed bachelor or higher degree holder is a "college labor market" job is described in greater detail in the appendix to this chapter.

A college labor market job is typically one in professional, technical, and managerial occupations; high-level sales (stockbroker, commodities broker, sales representative, financial services manager, real estate broker); selected high-level services (police, sheriff, detective); and selected high-level transportation occupations (airline pilots, flight technicians). For associate's degree holders, we also include as "college labor market" jobs all those occupations that also meet the O*NET Job Zone 3 classification system of the US Department of Labor's Employment and Training Administration. Any occupation in Job Zone 3 is also classified as a college labor market job for associate's degree holders.[25] Any college-educated person whose job falls outside of the "college labor market" is considered to be "mal-employed."

The estimates of 20-to-64-year-old college graduates who were mal-employed in 2000, 2007, and 2010 by type of college degree are displayed in Table 5-12. During each of these three years, the share of college graduates who were mal-employed was highest among associate's degree holders and fell with the level of the degree, being lowest for those with a master's or higher degree. For both associate's and bachelor's degree holders, the incidence of mal-employment problems rose over the decade by 5 to 6 percentage points, while it was fairly stable and low for

Table 5-12:

Trends in the Percent of Employed 20-to-64-Year-Old College Graduates in Massachusetts Who Were Mal-Employed by Degree, 2000, 2007, and 2010

TYPE OF DEGREE	2000	2007	2010	PERCENTAGE POINT CHANGE, 2000–2010
Associate's	27.5%	30.3%	33.5%	6.0%
Bachelor's	22.3%	23.2%	27.7%	5.4%
Master's or higher	8.8%	6.3%	9.6%	.8%

Sources: 2000, 2007, 2010 monthly CPS public use files, tabulations by authors

Table 5-13:

Trends in the Employment/Population Ratios of 20-to-64-Year-Old College Graduates in Massachusetts by Degree, 2000, 2007, and 2010

GROUP OF COLLEGE GRADUATES	2000	2007	2010	PERCENTAGE POINT CHANGE
Associate's degree	83.9%	79.6%	75.4%	-8.5%
Bachelor's degree	84.9%	81.8%	82.1%	-2.8%
Master's or higher degree	89.7%	85.7%	86.3%	-3.4%

those with a master's or higher degree (of whom only 9 percent were mal-employed in both 2000 and 2010).

The rising incidence of mal-employment among college graduates in both our state and the nation over the past decade was accompanied by declining employment rates as well. The drop in the E/P ratio over the 2000-2010 time period was particularly steep among associate's degree holders (Table 5-13). By combining the findings on the declining E/P ratios with their reduced ability to find college labor market jobs, we estimate that only 50 percent of the state's 20-to-64-year-olds with an associate's degree and only 59 percent of those with a bachelor's degree were working in a college labor market job in 2010. This represents a fairly massive underutilization of the skills of our state's college educated population. Nearly identical findings prevailed for the nation as a whole.

To identify the magnitude of the mal-employment problem in Massachusetts in 2010, we estimated the number of employed college graduates by degree level who were working in jobs outside of the college labor market during that year. Our findings are displayed in Table 5-14. There were nearly 92,000 mal-employed associate's degree holders, 228,000 mal-employed bachelor's degree holders, and slightly over 55,000 master's and higher degree holders working in jobs outside of the college labor market. The combined total of mal-employed college graduates was just under 375,000.

Our earlier estimates of the size of the underutilized pool of labor in Massachusetts did not include the members of the mal-employed. A new set of estimates of the underutilized labor pool in 2010, including the mal-employed, is presented in Table 5-15. After adding the nearly 375,000 mal-employed college graduates to the underutilized pool, we need to adjust the total for the overlap between the underemployed and the mal-employed. Some of the mal-employed college graduates (approximately 25,100) also experienced an underemployment problem. After adjusting for the overlap between these two groups, the count of the underutilized labor pool in Massachusetts in 2010 is estimated to be 905,600 workers. This very substantial pool of underutilized labor yields an overall labor underutilization rate of 25 percent, or one of every four workers in the state.

The costs of being mal-employed can be quite high to the individual worker and to society as a whole, since the mal-employed are less productive in the jobs they obtain, thereby reducing the aggregate level of output (real GDP) and earning lower wages. To identify the average size of

Table 5-14:

The Estimated Number of Mal-Employed 20-to-64-Year-Old College Graduates in Massachusetts by Degree, 2010

TYPE OF DEGREE	NUMBER
Associate's	91,700
Bachelor's	227,800
Master's or higher	55,400
Total	374,900

Table 5-15:

Re-Estimating the Underutilized Labor Pool in Massachusetts in 2010 After Including Mal-Employed College Graduates in the Count of the Underutilized

LABOR MARKET GROUP	NUMBER
Unemployed	297,500
+ Underemployed	170,900
+ Labor force reserve	87,400
+ Mal-employed	374,900
- Overlap between mal-employed and underemployed	25,100
Total	905,600
Adjusted civilian labor force	3,598,000
Labor underutilization rate	25.1%

Table 5-16:

Comparing the Mean Weekly Earnings of Employed 20-to-64-Year-Old College Graduates in Massachusetts in 2009-2010 by Degree and the College Labor Market Status of their Job

TYPE OF DEGREE	CLM JOB	NOT A CLM JOB	ABSOLUTE DIFFERENCE	RELATIVE DIFFERENCE
Associate	$887	$717	$170	24%
Bachelor	$1,311	$841	$470	56%
Master's or higher	$1,549	$989	$560	57%

the weekly earnings losses associated with being mal-employed, we compared the mean weekly earnings in 2009-2010 (two-year averages) of those college graduates who were employed in college labor market jobs with those of their peers with the same type of college degree who were working in jobs typically not requiring college degrees (Table 5-16). Among associate's degree holders, those working in "college labor market" jobs obtained mean weekly earnings of $887 versus only $717 for their peers in non college labor market jobs — a difference of $170 per week, or 24 percent.[26] The $717 mean weekly earnings for associate's degree holders who were mal-employed was actually slightly below the mean weekly earnings of employed high school graduates in the state ($727). This implies no positive economic return to investment in an associate's degree that does not lead to a college labor market job.

Bachelor's degree holders holding college labor market jobs obtained mean weekly earnings of $1,311 per week versus only $841 per week for the mal-employed, a wage advantage of $470 per week, or 56 percent, for those holding college labor market jobs. An employed bachelor's degree holder working in a college labor market job obtained mean weekly earnings that were nearly $600 per week higher than the mean weekly earnings of high school graduates. But if he was mal-employed, the gap was only $110 per week, yielding a low return to investment in a college education. Among the employed with a master's or higher degree working in a college labor market job, mean weekly earnings were $1,549 versus only $989 for the mal-employed. The gap in mean weekly earnings for those two groups of highly educated workers was $560, or 57 percent. Clearly, there are very substantial earnings advantages to college graduates from being able to obtain college labor market jobs. The private and social economic returns to investment in a college degree are critically influenced by the ability of college graduates to obtain jobs in the "college labor market." This result holds equally true for workers in the state and the nation at each degree level.

Appendix: Defining College Labor Market Occupations for Use in Estimating Mal-Employment Problems among College Educated Workers

The measures of mal-employment among college graduates appearing in our report are based on definitions of "college labor market occupations." Those employed persons with an associate's, bachelor's, or higher degree but not working in a "college labor market occupation" are classified as mal-employed. Mal-employment generates costs for the workers themselves and society at large. This appendix is designed to explain the methodology that we used to identify the set of college labor market occupations.

In conducting the monthly Current Population Surveys (CPS), the US Census Bureau has classified occupations into slightly more than 500 individual categories. These detailed occupations are then grouped into 23 major categories according to their skills and duties, ranging from various professional and management-related occupations to groups of blue-collar and service occupations. Table A-1 displays the categorization of college labor market occupations by CLMS

staff based on the US Census Bureau's classification of occupations. The labor market occupations presented in Table A-1 are categorized as "college labor market occupations" since they frequently require a four-year college degree to gain entry into the occupation.[27] All management, professional, and technical occupations are counted as college labor market occupations. The majority of the jobs in the healthcare practitioner and technical occupations require a specialized college degree. We have excluded from the full set of healthcare practitioner and technical occupations four occupations that are typically found not to require four-year college degrees. These occupations are dental hygienists, emergency medical technicians and paramedics, licensed practical and licensed vocational nurses, and medical records and health information technicians.

Only a few service occupations require job applicants to hold four-year college degrees. Workers holding jobs such as bailiffs, correctional officers, jailers, detectives, criminal investigators, and police and sheriff's patrol officers are often encouraged by local and state government to have or acquire a four-year college degree after being hired, with pay incentives for acquiring such degrees. First-line supervisors and managers of retail and non-retail occupations are also frequently required to have college degrees. High-level sales occupations are classified as college labor market occupations. The Center has excluded low-level sales occupations, such as cashiers, retail sales clerks, counter and rental clerks, insurance sales agents, and telemarketers from the count of college labor market occupations.

Table A-1:

CLMS Listing of College Labor Market Occupations

CENSUS OCCUPATIONAL CODE	OCCUPATION TITLES
(10- 3300)	Management Occupations
	Business and Financial Occupations
	Computer and Mathematical Occupations
	Architecture and Engineering Occupations
	Life, Physical, and Social Science Occupations
	Community and Social Service Occupations
	Legal Occupations
	Education, Training, and Library Occupations
	Arts, Design, Entertainment, Sports, and Media Occupations
	Healthcare Practitioners and Technical Occupations
	(also include the following)
3320	Diagnostic Related Technologists and Technicians
3410	Health Diagnosing and Treating Practitioner Support Technicians
3520	Opticians and Dispensing
3530	Miscellaneous Health Technologists and Technicians
3540	Other Healthcare Practitioners and Technical Occupations
	Selected Service Occupations
3800	Bailiffs, Correctional Officers, and Jailers
3820	Detectives and Criminal Investigators
3850	Police and Sheriff's Patrol Officers
4700	First-line Supervisors/Managers of Retail Sales Workers
4710	First-line Supervisors/Managers of Non-Retail Sales Workers
	High Level Sales Occupations
4800	Advertising Sales Agents
4820	Securities, Commodities, and Financial Services Sales Agents
4840	Sales Representatives, Services, All Other
4850	Sales Representatives, Wholesale and Manufacturing
4900	Models, Demonstrators, and Product Promoters
4920	Real Estate Brokers and Sales Agents
9030	Aircraft Pilots and Flights Engineers

Endnotes

1 For a more comprehensive overview of labor market problems, see Andrew Sum, Paul Harrington, and Lorraine Amico, *Cracking the Labor Market for Human Resource Planning* (Washington, DC: National Governor's Association, 1983).

2 In the monthly Current Population Survey (the source of the data for the monthly national count of the employed and unemployed and the annual average data on these two measures for individual states), the reference week of the survey is the calendar week immediately preceding the survey — i.e., the week containing the 12th day of the month. Those jobless persons on temporary layoff with a specific recall date from their employer or who expect to be recalled within the next six months do not have to meet the active job search test to be classified as unemployed. They must, however, be available to take a job.

3 For earlier analyses of unemployment developments in Massachusetts during the 1980s, 1990s, and early 2000s, see Andrew Sum and others, *The State of the American Dream in 2002* (Boston, MA: MassINC, 2002); Andrew Sum, Neeta Fogg, with Sheila Palma, *The Changing Magnitude and Character of Unemployment Problems in New England and Massachusetts During the National 2001 Recession and the Jobless Recovery of 2002*, Report prepared for the New England Regional Office of the Employment and Training Administration, Boston, February 2003; Andrew Sum and others, *Mass Economy: The Labor Supply and Our Economic Future* (Boston, MA: MassINC, 2007).

4 See Andrew Sum, Ishwar Khatiwada, and Joseph McLaughlin, "The Great Recession of 2007-2009 and the Blue Collar Depression," *Challenge*, July-August 2010.

5 Andrew Sum and Mykhaylo Trubskyy, "The Depression in Blue Collar Labor Markets in Massachusetts and the US: The Implications of Growing Labor Surpluses for Future Economic Stimulus and Workforce Development Policies," *MassBenchmarks* 13(1) (2011).

6 Lisa Van der Pool, "Massachusetts Sees Resurgence in Jobs for Men," *Boston Business Journal*, June 23, 2011.

7 The male unemployment rate exceeded that of women in eight of the 10 years from 1991 to 2000 and in every year from 1980 to 1990, though the gaps in several years fall short of statistical significance.

8 This group also includes a small number of individuals who were fired from their last position. They are typically less than 4 percent of the unemployed.

9 For a review of key features of the BLS dislocated worker survey and main findings of the January 2010 survey, see US Bureau of Labor Statistics, *Worker Displacement 2007-2009*, Washington, DC, August 26, 2010.

10 The first BLS dislocated worker survey was conducted in February 1984. It tracked dislocation experiences over the 1979-1983 time period.

11 See Andrew Sum and others (2002).

12 See John Martin, "The Extent of High Unemployment in OECD Countries," *Redefining Unemployment: Current Issues and Policy Options*, Federal Reserve Bank of Kansas City, 1994.

13 In 1992, at the beginning of the jobs recovery, the long-term unemployed in our state accounted for 35 percent of the unemployed, the previous all time high. See Andrew Sum and others (2002).

14 Stuart Garfinkle, "The Outcome of a Spell of Unemployment," *Monthly Labor Review*, January 1977.

15 See Debbie Borie-Holtz, Carl Van Horn, and Cliff Zukin, *No End in Sight: The Agony of Prolonged Unemployment* (New Brunswick, NJ: John J. Heldrich Center for Workforce Development, 2010).

16 The term "open unemployment," based on official labor force statistics, is used in contrast to "hidden unemployment," which include persons who want jobs but are not actively looking and, hence, are not included in the official count of the unemployed. See David Howell, "Beyond Unemployment," *Challenge*, January-February 2005.

17 For a review of underemployment problems in the US in recent years, see Andrew Sum and Ishwar Khatiwada, "The Nation's Underemployed in the Great Recession of 2007-2009," *Monthly Labor Review*, November 2010. For a review of mal-employment issues in human resource policymaking at the national and state levels, see Frederick Harbison, *Human Resources as the Wealth of Nations*, Oxford University Press, New York City, 1973; Sum and Harrington (1983); Mykhaylo Trubskky, Ishwar Khatiwada and Andrew Sum, T*he Incidence and Consequences of Malemployment among Dislocated Workers in the US in 2010*, Employment Policy Research Network.

18 The adjusted civilian labor force includes the civilian labor force (employed plus unemployed) and the labor force reserve.

19 For a review of these developments, see Andrew Sum, Ishwar Khatiwada, Sheila Palma, C*urrent Massachusetts Labor Market Challenges and the Workforce Solutions Act of 2005*, Report prepared for the Massachusetts Committee on Labor and Workforce Development, Hearings on the Workforce Solutions Act, Boston, 2005.

20 See Sum and Khatiwada (November 2010).

21 There is some overlap between the ranks of the underemployed and the mal-employed. Some of the mal-employed also are working part-time for economic reasons.

22 See Andrew Sum and Ishwar Khatiwada, "The Distribution of Labor Market Problems Across Household Income Groups in 2009," *Spotlight on Poverty and Opportunity,* April 2010.

23 For an analysis of the impacts of literacy skills on earnings depending on the intensity of their use on the job, see Andrew Sum, *Literacy in the Labor Force* (Washington, DC: National Center for Education Statistics,1999). See Andrew Sum and Paul Harrington, *The Labor Market Impacts of Vocational Education Programs in the US* (Boston, MA: Center for Labor Market Studies, 1988). For a review of growing mal-employment problems among young college graduates in the US in recent years, see Paul Harrington and Andrew Sum, *The College Labor Market Shortage: Another Look*, New England Board of Higher Education website, February 2011; Amanda Fairbanks, "College Graduates Scramble for Full-Time Jobs," *The Huffington Post*, April 15, 2011; Alejandra Cancino, "They're Well Schooled but Mal-employed," *Charlotte Observer*, May 1, 2011.

24 A recent *New York Times* article on this issue claims that a college education will pay off regardless of the occupation in which one works. The economic facts are quite the opposite, and the article is very misleading. See David Leonhardt, "Even for Cashiers College Pays Off," *The New York Times*, June 26, 2011.

25 Job Zone 3 occupations are those for which the employer typically requires some post-secondary education or training but not a bachelor's degree for hiring consideration.

26 A "college labor market" job for an associate's degree holder includes all jobs in the CLMS definition of "college jobs" plus all occupations in Job Zone 3 of the US Department of Labor's Employment and Training Administration O*Net system.

27 For the bulk of the workers in these occupations, close to 80 percent held a bachelor's or higher degree at the national level. The college-educated share varies across individual occupations being lower for the selected service occupations.

Chapter Six

Weekly Earnings and Earnings Inequality

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Introduction

The attainment of the American Dream is dependent on the ability of families to achieve at least a middle-class standard of living. To secure a middle-class lifestyle, adult workers must not only obtain access to stable, year-round, full-time employment, but those jobs must also provide adequate weekly and annual earnings. To gauge the success of Massachusetts workers in improving their weekly earnings over the past few decades, we will examine a series of data sources on their weekly earnings over the 1979-2010 period, including the lost decade of 2000-2010.

The weekly wages of Massachusetts workers will be tracked for all workers and for key demographic and educational attainment subgroups of workers as well as for selected geographic areas and industrial sectors. Findings for Massachusetts workers will be compared to those of their US counterparts and their peers in each of the other 49 states. Changes in the distribution of weekly earnings over time will be identified and assessed. Over the past few decades, there has been a considerable increase in the degree of inequality in weekly earnings between the top and bottom of the distribution both here in Massachusetts and across the New England region and the nation, especially for men.

Weekly Earnings Concepts, Measures, and Data Sources

The findings presented in this chapter on the weekly earnings of Massachusetts workers over the past few decades are based on two different data sources that use somewhat different definitions of earnings. The first set of weekly earnings data for wage and salary workers is that from the national/state Quarterly Census of Employment and Wages, often referred to by its acronym, the QCEW database.[1] The QCEW survey provides both annual and average weekly earnings of wage and salary workers covered by the federal and state unemployment insurance laws. The survey covers all wage and salary workers in these firms including executives, other managers, and all other wage and salary workers, including the full-time and the part-time employed.[2] The QCEW earnings data are collected from firms on an aggregate basis for the quarter as a whole while estimates of the number of employed are reported monthly. The QCEW earnings data are quite comprehensive in nature. They include all wages and salaries before any taxes or payroll deductions, including bonuses, tips, commissions, stock options, and employer contributions to selected deferred compensation plans, such as 401(k) plans, and the value of meals and lodging provided to employees.

The second source of weekly earnings data is that from the monthly Current Population Survey, which tracks the number of employed and unemployed persons 16 and older in the nation. Each month, the US Census Bureau collects weekly earnings data from wage and salary workers from one-fourth of the CPS household sample. All wage and salary workers in both the private sector and the public sector are included in the universe and are asked to report their "usual weekly earnings." The CPS weekly earnings data also are measured before any taxes and payroll deductions.[3] They include overtime pay, tips, and commissions but generally exclude stock options, most bonuses,

and employer contributions to 401(k) plans. They will, thus, underestimate weekly earnings at the top end of the distribution. The findings are, however, available on an individual worker basis; thus, the weekly wages of the full-time and part-time employed can be identified separately as well as the weekly earnings data for key demographic (gender, age) and educational attainment subgroups.

Trends in the Mean Real Weekly Earnings of Massachusetts Wage and Salary Workers from 1979-2010

Over the past few decades, the demographic and educational attainment characteristics of the employed population in Massachusetts and the distribution of jobs by major industrial sector and occupation changed substantially. The real weekly earnings of employed wage and salary workers in the state have also changed markedly, especially between 1979 and 2000, a period in which wages improved sharply in both real terms and relative to the nation. In the past decade, however, the real mean weekly earnings of Massachusetts workers have stagnated.

At the end of the 1970s decade, mean real weekly earnings of Massachusetts workers were $788, only $45 or 6 percent above the US average, and the state ranked only 22nd highest among the 50 states. During the 1980s, average real weekly earnings of Massachusetts workers increased to $871, a gain of about 11 percent, while real weekly earnings of US workers were basically flat, improving by only $3 or less than 0.5 percent (Chart 6-1). By 1990, average weekly earnings of Massachusetts workers had risen to 17 percent above the US average, and the state ranked fifth highest among the 50 states.

While state labor markets were quite weak during the early years of the 1990s, mean real weekly earnings improved sharply from 1993 to 2000, rising to $1,120 in the latter year, a gain of 29 percent versus only 15 percent for workers nationally. During 2000, the average weekly earnings of Massachusetts wage and salary workers were 30 percent above the US average, and the state ranked third highest in the country. This strong improvement in mean weekly earnings, however, does not appear to have been widely shared among state workers. As will be revealed in the following section, the median real weekly wage of the state's full-time wage and salary workers based on the CPS household survey was basically stagnant over the 1989-2000 period, with modest gains for women being offset by declines among men.

During the lost decade of 2000-2010, mean real weekly earnings of wage and salary earners in the state were essentially flat, growing by only $2 or barely more than 0.1 percent. In the US,

Table 6-1:

Trends in Average Real Weekly Earnings of Wage and Salary Workers in Massachusetts and the US, 1979-2010 (constant 2010 dollars)

GEOGRAPHIC AREA	1979	1990	2000	2010	PERCENT CHANGE 1979 -2010	PERCENT CHANGE 2000-2010
Massachusetts	$788	$871	$1,120	$1,122	42%	0%
US	$743	$746	$858	$891	20%	4%
Massachusetts/US	1.06	1.17	1.30	1.26		
Massachusetts rank among 50 states	22nd	5th	3rd	3rd		

Sources: US Bureau of Labor Statistics, all tabulations by authors

real weekly earnings rose by $33 or 4 percent. The relative weekly earnings advantage of Massachusetts workers fell slightly to 26 percent, but the state maintained its third highest ranking.

While overall mean real weekly earnings were flat over the past decade, workers in different industries experienced quite different economic fates. We classified workers into 18 industrial sectors, and we have also provided earnings data for the high wage sectors of the finance and insurance industry (Table 6-2). Real weekly earnings over the past decade declined in six industries, held steady in three industries, and increased in

Chart 6-1:

Percent Changes in Real Weekly Earnings of Wage and Salary Workers in Massachusetts and the US, 1979-2010

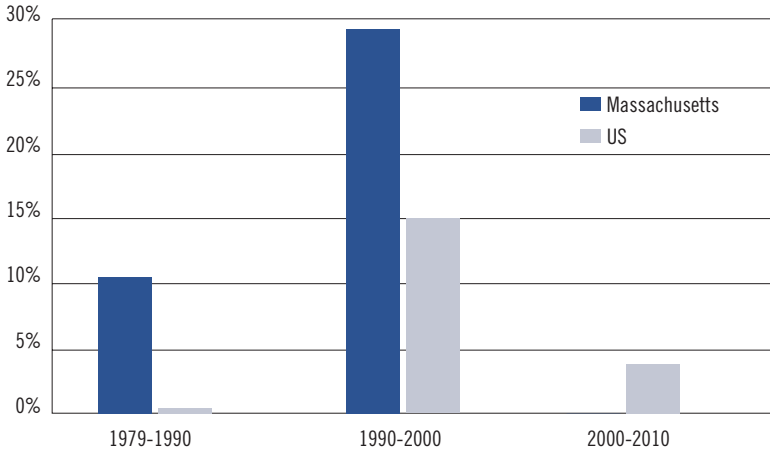


Table 6-2:

Trends in Average Real Weekly Earnings of Massachusetts Workers by Major Industrial Sector of Employer, 2000-2010 (constant 2010 dollars)

INDUSTRY	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
Finance and insurance	$2,086	$2,218	$132	6%
Investment banking and securities dealing	$3,716	$5,021	$1,305	35.1%
Securities brokerage	$3,156	$3,856	$700	22.2%
Utilities	$1,857	$2,000	$143	8%
Management of companies	$1,709	$1,998	$289	17%
Professional and technical services	$1,880	$1,946	$66	4%
Information	$1,731	$1,771	$40	2%
Wholesale trade	$1,581	$1,524	$-57	-4%
Manufacturing	$1,398	$1,446	$48	4%
Construction	$1,195	$1,195	$0	0%
Real estate	$1,034	$1,156	$122	12%
Educational services	$959	$1,095	$136	15%
Mining, oil, gas	$1,092	$1,081	$-11	-1%
Health care and social assistance	$850	$982	$132	15%
Transportation and warehousing	$837	$801	$-36	-4%
Administrative and waste services	$741	$739	$-2	0%
Arts, entertainment, recreation	$662	$664	$2	0%
Retail trade	$589	$534	$-55	-9%
Other services	$591	$529	$-62	-11%
Accommodation and food services	$460	$372	$-88	-19%
All industries	$1,120	$1,122	$2	0%

Chart 6-2:

2010 Average Weekly Earnings of Massachusetts Workers in Selected Low and High Wage Industries (current dollars)

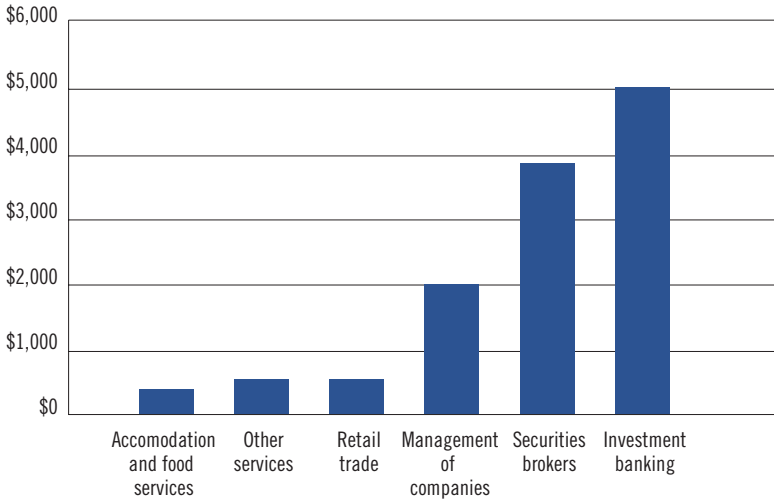


Table 6-3:

Average Real Weekly Earnings of Wage and Salary Workers in Massachusetts by County, 2000-2010 (2010 Boston CPI-U dollars)

COUNTY	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
Barnstable	$740	$753	$13	2%
Berkshire	$779	$745	$-34	-4%
Bristol	$766	$797	$31	4%
Essex	$974	$948	$-26	-3%
Franklin	$685	$684	$-1	0%
Hampden	$802	$817	$15	2%
Hampshire	$735	$756	$21	3%
Middlesex	$1,296	$1,306	$10	1%
Norfolk	$1,079	$1,060	$-19	-2%
Plymouth	$845	$838	$-7	-1%
Suffolk	$1,410	$1,471	$61	4%
Worcester	$936	$902	$-34	-4%

Source: MA Department of Workforce Development, Quarterly Census of Employment and Wages

the remaining nine industries. Workers in the lowest wage industries typically fared the worst, either obtaining no wage improvement or fairly substantive 9 to 19 percent declines (retail trade, other services, and accommodation and food services). Workers in four major industries (real estate, educational and health services, and management of companies) experienced double-digit weekly earnings increases ranging from 12 to 17 percent. Two segments of the finance industry (security brokerage and investment banking) also experienced very strong gains with the mean weekly earnings of workers in investment banking and securities brokers rising by 43 percent to $5,021 per week, nearly five times the state average weekly wage.

During 2010, the mean weekly earnings of wage and salary workers across industries of Massachusetts varied widely (Chart 6-2). At the bottom of the distribution were workers in the accommodation and food services industries (an above-average share of whom are only part-time workers) with an average weekly wage of only $372 and those in "other services" (repair, personal care) and retail trade with wages in the $530 range. At the top of the distribution were workers involved in the management of companies at just under $2,000, those employed by security brokers at $3,860, and those working in the investment banking and security dealers industries at $5,020 (Chart 6-2). Mean weekly earnings (including bonuses, stock options, other executive compensation) in this latter finance-related industry were 4.5 times as high as the state average, 10 times as high as the weekly earnings of those in retail trade and other services, and nearly 14 times as high as the earnings of workers in accommodation and food services.

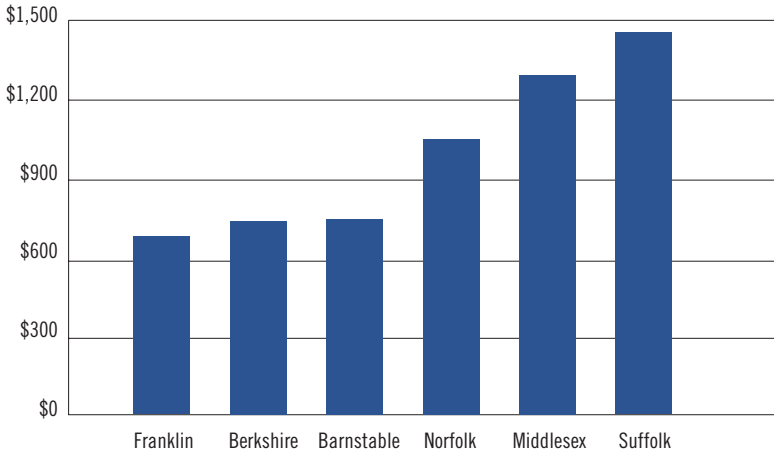
Average weekly earnings of Massachusetts workers also vary quite widely across counties of the state.[5] In 2000, these weekly earnings ranged from lows of $685 in Franklin County and $735 in Hampshire County to highs of just under

$1,300 in Middlesex County and $1,410 in Suffolk County, which consists of Boston, Chelsea, Revere and Winthrop (Table 6-3).[7] The ratio of weekly earnings in the highest and lowest weekly wage counties was more than 2 to 1 in 2000.

Over the 2000-2010 decade, real weekly earnings increased modestly in six of the 12 counties, remained unchanged in one county (Franklin), and declined in five counties. The size of the percent changes in real weekly earnings over the decade ranged from lows of -3 to -4 percent in Essex, Berkshire, and Worcester counties to highs of 4 percent in Bristol and Suffolk counties. By the end of the decade, weekly earnings ranged from a low of $684 in Franklin County to a high of $1,471 in Suffolk County (Chart 6-3). The ratio of weekly earnings in 2010 in the highest and lowest wage counties was 2.15 to 1. These rising weekly wage differences over the past few decades have contributed to rising gaps in family incomes and per capita incomes across counties and regions.[7]

Chart 6-3:

Average Weekly Earnings of Massachusetts Wage and Salary Workers in the Three Lowest and Three Highest Wage Counties, 2010



Trends in the Real Median Weekly Earnings and Distribution of Those Earnings of Resident Massachusetts Wage and Salary Workers, 1979-2009

Our second source of data on the weekly earnings of Massachusetts wage and salary workers is from the monthly Current Population Survey. The CPS survey asks employed wage and salary workers in all industrial sectors to provide information on their "usual weekly earnings."[8] The data apply to employed residents of Massachusetts regardless of the state in which they work. These weekly wage data do include overtime pay, tips, and regular commissions but typically exclude annual bonuses, stock options, profit sharing, or other forms of executive compensation. The weekly wage data provided to researchers on the CPS public use files are top coded by the US Census Bureau. Typically, one cannot identify the actual weekly earnings of the top 4 to 5 percent of full-time wage earners in recent years. For these reasons, we use the median rather than the mean weekly earnings as our measure of the average weekly wage.[9] Given high differences between the mean and median, the median is a much better representation of the wage of the average worker.

Findings on the estimated median real weekly earnings of Massachusetts wage and salary workers for selected years over the 1979-2010 time period are displayed in Table 6-4. These estimates pertain to all employed wage and salary workers including both the part-time and full-time employed. Changes in the CPS-based median weekly earnings of Massachusetts workers over this 30-year period differ somewhat from those of the QCEW survey, especially in the 1990s where the CPS weekly wage series shows much more moderate wage growth. During the Miracle Decade of the 1980s, median real weekly earnings of Massachusetts workers are estimated to have increased by $87 or 14 percent. State workers clearly outperformed their national counterparts during this decade. Nationally, median real weekly earnings of the employed grew by only 3 percent. In 1979, the state's median weekly earn-

Table 6-4:

Trends in the Median Real Weekly Earnings of Employed Wage and Salary Workers in Massachusetts by Gender, 1979-2010 (2010 Boston CPI-U dollars)

YEAR	ALL	MEN	WOMEN	WOMEN/MEN
1979	$636	$875	$477	54.5%
1989	$723	$904	$579	64.0%
2000	$776	$905	$640	70.7%
2007	$788	$964	$630	65.4%
2010	$820	$981	$693	70.6%
Percent Change				
1979 – 1989	14%	3%	21%	
1989 – 2000	7%	0%	11%	
2000 – 2010	6%	8%	8%	
1979 – 2010	29%	12%	45%	

Chart 6-4:

Trends in the Median Real Weekly Earnings of Wage and Salary Workers in Massachusetts, 1979-2010 (2010 Boston CPI-U dollars)

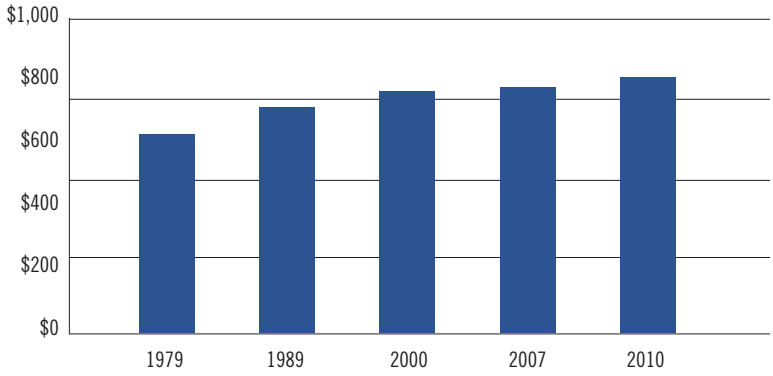
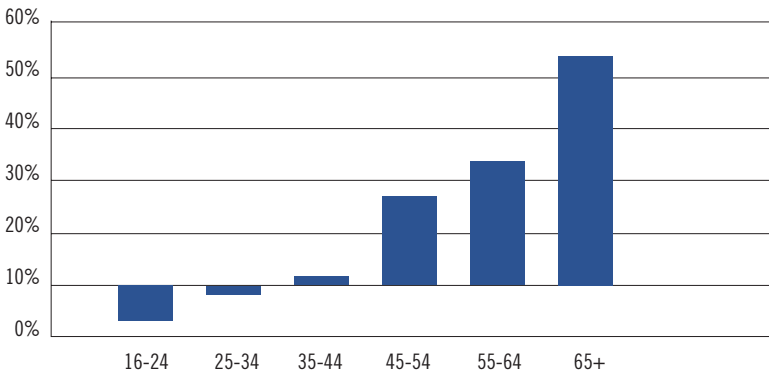


Chart 6-5:

Percent Change in the Median Real Weekly Earnings of Employed Wage and Salary Workers in Massachusetts by Age, 1989-2010



ings were only equal to the US average, and Massachusetts ranked only 22nd highest among the 50 states. By 1989, the median weekly wage rose to 117 percent of the US average, and the state's ranking improved to fourth highest. In 2010, the median weekly earnings of the employed in Massachusetts were 22 percent above the US average and the state was tied with Connecticut for first place among the 50 states on this measure.

During the 1989-2000 time period, median real weekly earnings of Massachusetts workers experienced more modest growth. The median weekly wage rose by about 7 percent over the decade. As will be noted below, among full-time workers, real weekly earnings grew more strongly for those at the upper end of the wage distribution, rising by 12 to 18 percent for those at the 95th and 98th percentiles over the 1990s. And the true degree of growth in earnings inequality in Massachusetts was clearly greater than these findings suggest due to top coding from the 98th percentile up and the exclusion of bonuses, stock options, profit sharing, and other forms of executive compensation from the CPS "usual weekly earnings" estimates. These forms of compensation grew strongly in some industries in the mid- to late-1990s.

During the past decade, real median weekly wages increased by $44 or slightly under 6 percent for all of the employed, with both men and women increasing their median wages by about 8 percent.[11] Over the entire 1979-2009 period, the median real weekly earnings of employed Massachusetts workers rose from $636 to $820, a gain of $184 or nearly 30 percent. Women experienced considerably higher weekly wage gains than men (45 percent versus 12 percent) due to a combination of higher growth in their hourly earnings and a higher share of women working in full-time jobs. The stronger growth in college-educated women in recent decades was a key factor underlying these results.

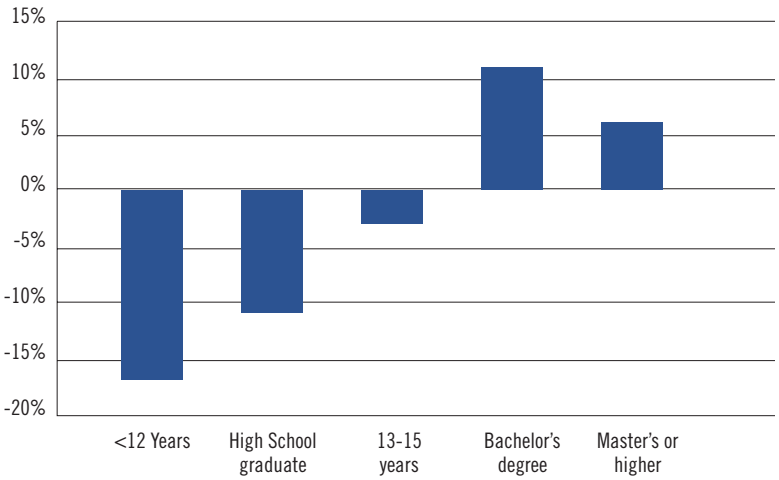
While median weekly earnings rose for all

workers combined by about 13 percent in the state over the 1989-2010 period, different age and educational subgroups experienced quite variable fates. The state's youngest workers (those under 25 years old) saw their median real weekly earnings fall by 8 percent and 25-34-year-olds lost 2 percent of their earnings. All older age groups obtained more substantial wage increases ranging from 20 percent for those 45 to 54 to 52 percent for those 65 and older. Older workers benefited from rising real hourly earnings and more hours of work per week.

Weekly wage gains also varied fairly widely across educational groups of workers between 1989 and 2010. Employed persons lacking any post-secondary schooling fared the worst, with high school dropouts experiencing a 17 percent decline and high school graduates an 11 percent loss (Chart 6-6).[12] Only those workers with a bachelor's or higher degree improved their median weekly earnings. The gains were 11 percent for bachelor's degree holders and 6 percent for those with a master's or higher degree. As noted in an earlier chapter, the Massachusetts workforce became much better educated over the past three decades, rising to the number one position among the 50 states in the share of its workers with a bachelor's or higher degree in 2010. In the absence of this educational upgrading, median weekly earnings in the state would likely have remained unchanged over the past two decades. A major challenge facing the state today is how to boost the productivity of workers in each educational group and convert those productivity gains into real wage increases.

Chart 6-6:

Percent Change in the Median Real Weekly Earnings of Employed Wage and Salary Workers in Massachusetts by Educational Attainment, 1989-2010



Trends in the Median Weekly Earnings of Full-Time Wage and Salary Workers in Massachusetts, 1979-2010

The monthly CPS household survey collects information on the number of weekly hours worked by the employed as well as their weekly earnings. By combining the information on weekly hours worked and weekly earnings, we can identify the weekly earnings of the full-time employed (i.e. those working 35 or more hours per week). Estimates of the median real weekly earnings of the full-time employed in Massachusetts for all such workers and by gender are displayed in Table 6-5 and Chart 6-7.

Median real weekly earnings of the full-time employed increased from $764 in 1979 to $961 in 2010, a gain of nearly $200 or 25 percent over this 31-year period. Growth in those weekly earnings varied quite widely over the past three decades. During the 1980s decade, median weekly earnings of full-time workers rose by 9 percent, with women faring the best by far with a 23 percent gain versus only 2 percent for men. During the 1990s, overall median real weekly earnings were flat. Women obtained a 7 percent gain while men's

Table 6-5:

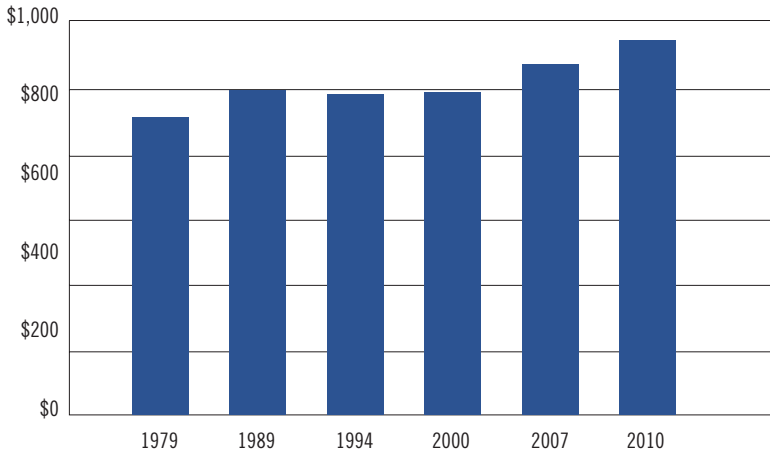
Trends in the Median Real Weekly Earnings of Full-Time Employed Workers in Massachusetts by Gender, 1979-2010 (2010 Boston CPI-U dollars)

YEAR	MEN	WOMEN	ALL
1979	$923	$564	$764
1989	$941	$691	$832
1994	$920	$736	$823
2000	$931	$736	$828
2007	$1023	$762	$901
2010	$1033	$830	$961
% Change, 1979-2010	12%	47%	25%
% Change, 1979-1989	20%	23%	9%
% Change, 1999-2000	-1%	7%	0%
% Change, 2000-2010	11%	13%	16%

Source: Monthly CPS surveys, 1989, 1994, 2000, 2007, and 2010 public use files

Chart 6-7:

Trends in the Median Real Weekly Earnings of Full-Time Wage and Salary Workers, 1979-2010 (2010 Boston CPI-U dollars)



earnings modestly declined. Over the past decade, median real weekly earnings rose by nearly 16 percent with both men and women achieving double-digit gains (Table 6-5).

The stronger growth over the past decade in the median real weekly earnings of full-time workers captured by the CPS relative to the weekly earnings for all workers in the QCEW wage series must be explained. Some of the discrepancy is due to a sharp drop in the number of full-time workers and a radical shift in their age and education. While the number of total employed workers declined only modestly, full-time workers fell more considerably due to a large increase in the number of persons working part-time for economic reasons. At the same time, younger workers and less educated workers with their lower average weekly earnings were pushed out of the full-time labor market.

Between 2000 and 2010, the total number of employed full-time, wage and salary workers fell by 104,000 or 5 percent in Massachusetts (Table 6-6). All age groups of workers under 45, especially the state's youngest workers (16-34), experienced double-digit declines in their levels of full-time employment, with young workers down by nearly one-third. The increase in the number of Baby Boomers in the 55-64 age group, combined with increases in the full-time employment rates of persons 55-64 and 65 and older, led to very substantial growth in their full-time employed ranks.[12] The number of full-time employed 55-64-year-olds rose by 34 percent and the number of full-time workers 65 and older rose by 153 percent over the decade.

The growth rates of the median weekly earnings of full-time adult workers (25 and older) varied considerably by age group over the past decade (Chart 6-8). The percentage point size of these weekly wage gains rose steadily with age up through the 65 and older age group. Those full-time workers 25-34 years old saw their weekly earnings rise by only 4 percent versus a 12 percent gain for those 35-44 and 24 percent for those 55-64 years old. The state's oldest workers 65 and older obtained a near 20 percent gain in their weekly earnings. Age differentials in weekly earnings among the full-time employed widened considerably in both our state and the nation over the past few decades. In 1979, the

median weekly earnings of 55-64-year-old full-time workers in Massachusetts were about 45 percent above those of 16-24 year olds; however, by 2010 the relative weekly earnings difference had risen to 75 percent, the highest in post-World War II history.

During the past decade, the educational attainment characteristics of the full-time employed in Massachusetts also changed considerably with a sharp upward jump in the share of the full-time employed with a bachelor's or higher degree (Table 6-7). From 2000 to 2010, the share of full-time workers that had no formal schooling beyond high school declined from nearly 37 percent to 27 percent, while the share of full-time workers with a bachelor's or higher degree increased by nearly 13 percentage points from 39 percent to just under 52 percent. By 2010, Massachusetts led the nation in the share of its full-time workers that held a bachelor's or higher degree.

How well did the state's full-time workers in each major educational attainment group fare in improving their weekly earnings over the past decade? The results here are quite interesting. The median real weekly earnings of all groups of workers without a bachelor's degree improved by 6 to 7 percent over the decade, while the median weekly earnings of the full-time employed with a bachelor's or higher degree declined by 3% percent over the decade (Table 6-8). The bulk of the weekly wage improvement of all full time workers was, thus, produced by a shift in the educational composition of the employed toward the best educated rather than to gains in weekly wages for each educational group.

Table 6-6:

Changes in the Number of Employed Full-Time Wage and Salary Workers in Massachusetts by Age, 2000-2010

AGE	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
16-24	189,900	128,400	-61,500	-32%
25-34	566,500	499,300	-66,800	-12%
35-44	617,400	530,300	-87,100	-14%
45-54	535,200	528,500	-6,700	-1%
55-64	244,800	327,800	83,000	34%
65+	23,200	58,800	35,600	153%
All	2,177,400	2,073,300	-104,100	-5%

Chart 6-8:

Percent Changes in the Median Real Weekly Earnings of Full-Time Employed Wage and Salary Workers (25+) in Massachusetts by Age, 2000-2010

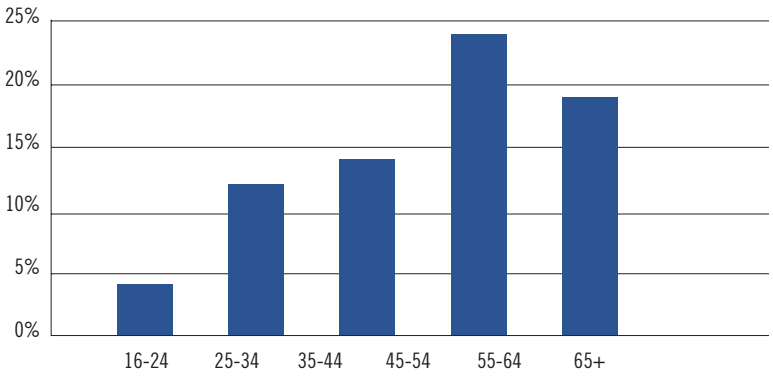


Table 6-7:

Trends in the Educational Attainment of Full-Time Wage and Salary Workers in Massachusetts, 2000-2010

EDUCATIONAL ATTAINMENT	2000	2010	PERCENTAGE POINT CHANGE
<12 or 12 years, no diploma	8.2%	4.8%	-3.4%
High school graduate GED	28.5%	22.1%	-6.4%
13-15 years, no degree	14.7%	11.7%	-3.0%
Associate's degree	9.4%	9.6%	.2%
Bachelor's degree	24.9%	29.8%	4.9%
Master's or higher degree	14.2%	21.9%	7.7%
Bachelor's or higher degree	39.1%	51.7%	12.6%

Source: Monthly CPS surveys, 2000 and 2010 public use files

Table 6-8:

Trends in the Median Real Weekly Earnings of Massachusetts Full-Time Workers by Educational Attainment, 2000-2010 (Boston CPI-U dollarss)

EDUCATIONAL ATTAINMENT	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
<12 or 12, no diploma	$466	$500	$34	7%
High school graduate, GED	$673	$711	$38	6%
13-15 years, including associate's degree	$747	$800	$53	7%
Bachelor's or higher degree	$1,243	$1,211	-$32	-3%
All	$832	$961	$129	15%

Trends in the Median Weekly Wages of the Combined Full-Time Employed and the Underemployed in Massachusetts, 2000-2010

The last decade has witnessed a major increase in the number of underemployed persons in both Massachusetts and the US. The underemployed are those individuals who work only part time (fewer than 35 hours per week) but desire a full-time job.[13] In calendar year 2000, there were only 50,000 underemployed persons per month in the state. During the first eight months of this year, there were nearly 200,000 underemployed, or almost four times as many. The underemployed are disproportionately young (under 30), less educated, blue-collar and service workers, and often members of low-income families. Their loss of full-time work hours has a very large negative effect on their weekly earnings.

We have combined the underemployed with the full-time employed and estimated the median weekly earnings of the combined pool of full-time workers and the underemployed in Massachusetts in both 2000 and 2010. Findings are presented in Table 6-9 and Charts 6-9 and 6-10.

In 2000, the median weekly earnings of this group of workers was $870 (in 2010 dollars). By 2010 their median earnings had risen to $904, which was $34 or only 4 percent above their 2000 level, a very modest increase. For those workers 16 to 34 years old, the median weekly earnings also rose by 4 percent; however, all of this modest increase was attributable to a higher fraction of college-educated workers in this age group. In each of the four educational groups within this age range, median weekly earnings fell; workers without a bachelor's degree experienced steep double-digit declines (Table 6-9 and Chart 6-9).

Among those workers 35 to 64 years old, median real weekly earnings rose by 5 percent over the decade. However, those full-time and underemployed workers lacking a bachelor's or higher degree all encountered losses in their median weekly earnings, largely due to a big increase in underemployment among this educational group over the decade (Chart 6-10). Those workers with a bachelor's or higher degree achieved a 4 percent increase in their median weekly wage over the decade. In 2010, those employed persons with a bachelor's or higher degree obtained median weekly earnings that were nearly three times as high as those of high school graduates.

Table 6-9:

Trends in the Median Weekly Earnings of Full-Time Employed and Underemployed Workers in Massachusetts (16+) by Age and Educational Attainment, 2000-2010 (2010 Boston CPI-U dollars)

AGE/EDUCATIONAL ATTAINMENT	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
All 16+	$870	$904	34	4%
16-34	$738	$769	31	4%
High school dropout	$440	$366	-74	-17%
High school graduate	$603	$514	-89	-15%
Some college	$602	$538	-64	-11%
Bachelor's or higher	$994	$961	-33	-3%
35-64	$970	$1,019	49	5%
High school dropout	$595	$500	-95	-16%
High school graduate	$746	$720	-26	-3%
Some college	$919	$865	-54	-6%
Bachelor's or higher	$1,392	$1,442	50	4

Source: Monthly CPS public use files, 2000 and 2010, tabulations by authors

Trends in Weekly Wage Inequality among Full-Time Workers in Massachusetts, 1989-2010

This chapter has focused on earnings trends among Massachusetts workers both overall and by gender, age, and educational attainment. One might also be interested in knowing how the distribution of weekly earnings has changed. Did workers fare equally well all along the distribution or did high wage earners outperform their middle and low wage counterparts? Both nationally and regionally, weekly earnings of full-time workers have become more unequally distributed over the past few decades.[14] The relative size of the weekly wage gaps between the top and bottom of the distribution have widened considerably. The gap between the middle (50th percentile) and the bottom (10th percentile) of the distribution has also grown.

In Table 6-10, we present estimates of the real weekly earnings of full-time employed Massachusetts workers at various points along the earnings distribution from the 10th to the 95th percentiles in 1989, 2000, and 2010.[15] Over this

Chart 6-9:

Percent Change in the Median Weekly Earnings of Full-Time Employed and Underemployed Massachusetts Workers Ages 16 to 34 by Educational Attainment, 2000-2010

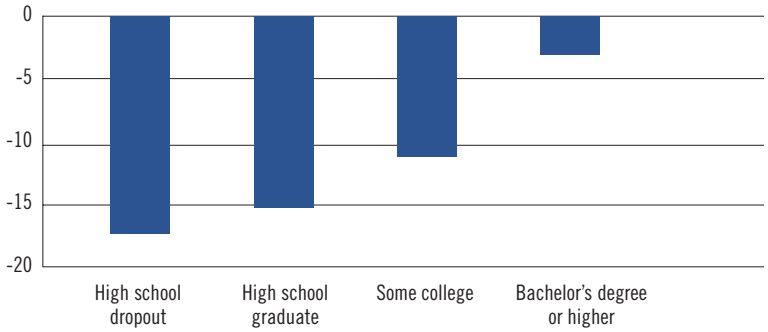


Chart 6-10:

Percent Changes in the Median Weekly Earnings of Full-Time Employed and Underemployed Massachusetts Workers Ages 35 to 64 by Educational Attainment, 2000-2010

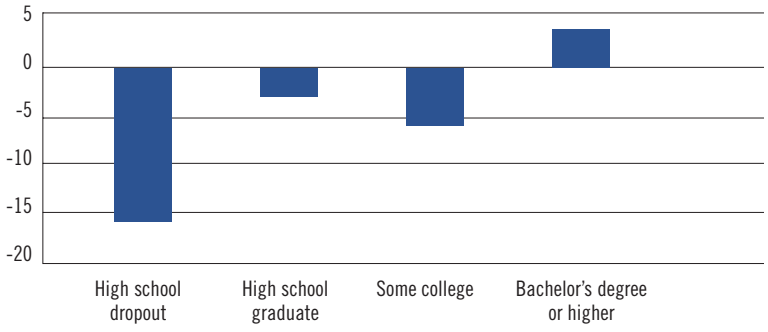


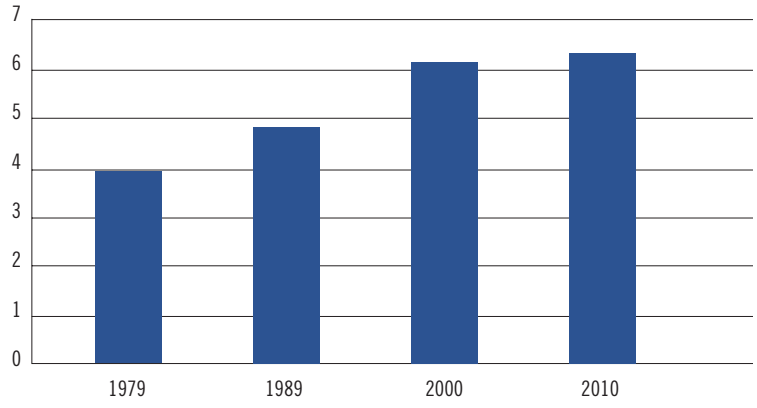
Table 6-10:

Trends in the Real Weekly Earnings of Massachusetts Full-Time Wage and Salary Workers at Selected Percentiles along the Weekly Wage Distribution, 1989-2010 (2010 Boston CPI-U dollars)

PERCENTILE	1989	2000	2010	ABSOLUTE CHANGE	PERCENT CHANGE
10	$434	$405	$407	$-27	-6%
20	$543	$507	$560	$17	3%
30	$633	$608	$680	$47	7%
40	$724	$709	$800	$76	10%
50	$832	$810	$961	$129	15%
60	$933	$950	$1,106	$173	19%
70	$1,085	$1,119	$1,346	$261	24%
80	$1,302	$1,338	$1,600	$298	23%
90	$1,738	$1,773	$2,096	$358	21%
95	$2,110	$2,506	$2,596	$486	23%
W95/W10	4.86	6.19	6.38		
W90/W10	4.00	4.38	5.15		
W90/W20	3.20	3.50	3.74		
W90/W50	2.08	2.18	2.18		
W80/W20	2.40	2.64	2.86		
W50/W10	1.92	2.00	2.36		

Chart 6-11:

Trends in the W95/W10 Ratio for Full-Time Workers in Massachusetts, 1979-2010



two-decade period, real weekly earnings growth varied widely across the distribution. Weekly earnings declined by 6 percent for those at the 10th lowest percentile then rose for each of the other percentiles, with the percentage point size of these gains rising steadily through the 70th percentile, where they leveled off. The differences in these weekly earnings growth rates were quite sizeable, ranging from a low of 3 percent at the 20th percentile and 7 percent at the 30th percentile to highs of 21 to 24 percent for those at the 70th, 80th, 90th, and 95th percentiles. As a consequence of these divergent growth rates in weekly earnings, the relative size of weekly wage differentials among the full-time employed rose at nearly all key points along the distribution, especially between those at the top (80th, 90th, 95th percentiles) and those at the bottom (10th, 20th percentiles). For example, the ratio of weekly earnings at the 95th percentile to the 10th percentile increased from 4.86 in 1989 to 6.38 in 2010. In the last year, the weekly earnings of those at the 95th percentile were nearly 6.5 times as high as those at the 10th percentile, an enormous difference. This W95/W10 wage ratio has grown steadily and steeply in our state over the past three decades, increasing from 3.9 in 1979 to nearly 6.4 in 2010. Unfortunately, Massachusetts has become a national leader on this measure of wage inequality.

Findings on trends in the real weekly earnings of male full-time workers over the 1989-2010 time period are displayed in Table 6-11. Again, we find very substantial diversity in the weekly wage changes along the distribution, with very large gaps between the upper end (top 20 percent) and the bottom two deciles of the distribution. From 1989-2010, weekly earnings at the 10th and 20th percentiles declined by 13 and 5 percent, respectively, while those at the 80th to the 95th percentiles increased by about 20 percent. Relative wage gaps from the top to bottom (95th/10th, 90th/10th) increased substantially

in size as did the ratio of the middle to the bottom (50th/10th). The W90/W10 ratio increased from 3.75 in 1989 to 5.25 in 2010, a 40 percent increase over this two-decade period. Male weekly earnings became much more unequally distributed.

Findings on weekly earnings trends for full-time employed Massachusetts women are presented in Table 6-12. Unlike the case for men, women at every segment of the earnings distribution received gains in their real weekly earnings over the past two decades. However, the relative sizes of these gains were considerably higher at the top than at the bottom of the distribution. Women at the 10th and 20th percentiles obtained gains of 11 to 14 percent in their weekly earnings while those at the upper end of the distribution (80th and 90th percentiles) achieved increases of 38 to 40 percent. Earnings inequality also rose among employed women, especially from the top to the bottom of the distribution. The W95/W10 ratio increased from a value of about 4 in 1989 to 4.8 in 2010. Large increases also took place for the W90/W20 ratios.

How does weekly wage inequality in Massachusetts today compare to that of the US and how have these trends in inequality compared over the past few decades? In Table 6-13, we compare relative weekly wage measures for Massachusetts and the US in 2010. For the 90th/10th wage measure, we find that Massachusetts has more inequality than the nation (5.15 vs. 4.86) and the state also has more inequality than the nation from the middle to the bottom of the distribution (W50/W10). The state and the nation have basically identical W80/W20 measures, and Massachusetts has somewhat lower inequality between the top and middle (W90/W50).

Over the past few decades, however, wage inequality from top to bottom has widened at a higher rate here in Massachusetts than in the nation. This finding holds true for the W95/W10, W90/W10, W90/W20, and W80/W20 mea-

Table 6-11:

Trends in the Real Weekly Earnings of Full-Time Employed Men in Massachusetts at Selected Percentiles of the Distribution, 1989-2010 (2010 Boston CPI-U dollars)

PERCENTILE	1989	2000	2010	PERCENT CHANGE, 1989-2010
10	$506	$422	$440	-13%
20	$633	$569	$600	-5%
50	$941	$931	$1,033	10%
80	$1,484	$1,552	$1,800	21%
90	$1,900	$2,088	$2,308	21%
95	$2,402	$2,661	$2,885	20%
W95/W10	4.74	6.30	6.56	38%
W90/W10	3.75	4.95	5.25	40%
W90/W20	3.00	3.67	3.85	28%
W90/W50	2.02	2.24	2.23	10%
W80/W20	2.34	2.73	3.00	28%
W50/W10	1.86	2.21	2.35	26%

Table 6-12:

Trends in the Real Weekly Earnings of Full-Time Employed Women in Massachusetts at Selected Percentiles of the Distribution, 1989-2010 (2010 Boston CPI-U dollars)

PERCENTILE	1989	2000	2010	PERCENT CHANGE, 1989-2010
10	$398	$388	$440	11%
20	$489	$476	$530	11%
50	$692	$735	$830	20%
80	$1,042	$1,196	$1,400	34%
90	$2,303	$1,552	$1,769	40%
95	$1,610	$1,858	$2,115	35%
W95/W10	4.04	3.88	4.81	18
W90/W10	3.17	4.76	4.02	27
W90/W20	2.66	3.26	3.34	26
W90/W50	1.83	2.11	2.13	16
W80/W20	2.19	2.51	2.64	21
W50/W10	1.74	1.89	1.89	9

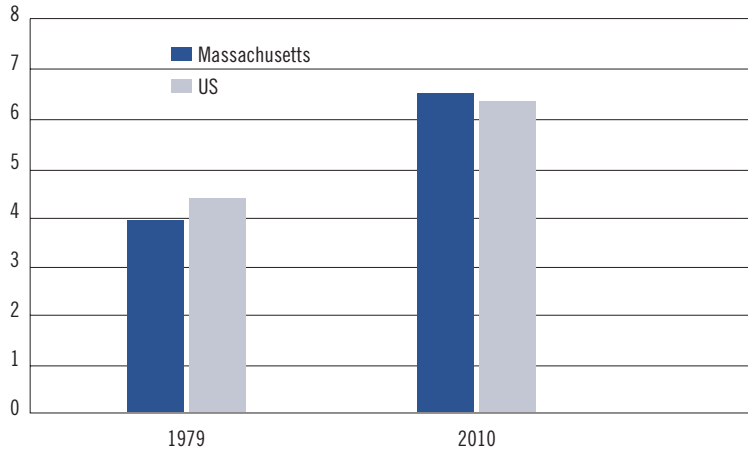
Table 6-13:

Comparisons of Relative Weekly Wage Inequality in Massachusetts and the US, 2010

RELATIVE WAGE MEASURE	MA	US	MA – US
W90/W10	5.15	4.86	.29
W90/W20	3.74	3.89	-.15
W90/W50	2.18	2.30	-.12
W80/W20	2.86	2.89	-.03
W50/W10	2.36	2.11	.25

Chart 6-12:

Comparisons of the W95/W10 Ratio for Full-Time Workers in Massachusetts and the US, 1979 and 2010



sures. In 1979, the W95/W10 ratio was sharply higher in the US than in Massachusetts (4.4 vs. 3.9); however, by 2010, Massachusetts had outpaced the nation on this wage inequality measure (6.56 vs. 6.40). Similar findings held true for annual earnings and annual incomes. Rising wage inequality has made us much less of a Commonwealth in terms of economic outcomes for workers and families.

Appendix A: Trends in the Comparative Weekly Wage Position of Workers in Massachusetts, 1979 to 2009

In this chapter, we presented comparisons of the weekly earnings of wage and salary workers in Massachusetts with those of workers in the US and in each of the other 49 states over the past few decades. This appendix offers findings on trends in the relative wage position of Massachusetts to the entire US and the state's rankings among the 50 states on median weekly wages for the 1979-2009 time period. The weekly earnings data apply to all employed wage and salary workers (16 and older) including part-time and full-time workers.

Overall, Massachusetts's comparative wage position improved markedly over this 30-year period (Table A-1). In 1979, median weekly earnings of the employed in Massachusetts were exactly tied with those of the US at $200 (in current dollars). Massachusetts ranked only 23rd highest on this measure, tied with 12 other states. Our wage performance was average.

Over the following three decades, our relative wage performance improved considerably especially during the 1980s. By 1989, the median weekly earnings of Massachusetts workers rose to 114 percent of the US average and the state's ranking improved to fourth highest. The comparative wage again stood at 114 in 2000 but rose to 123 by 2010. In the last year, the state's median weekly earnings ranked highest in the nation, tied with Connecticut. As noted in the text, the improvement was almost entirely due to a shift in the educational attainment of our employed workforce rather than to above-average gains in weekly wages of workers in each educational attainment group.

Improvements in the relative weekly earnings position of both male and female workers in Massachusetts also took place over the past three decades (Table A-2). In 1979, the relative weekly wage position of males in Massachu-

Appendix Table A-1:

Comparisons of the Weekly Earnings of Employed Wage and Salary Workers (16+) in Massachusetts and the US and Rank among the 50 States, 1979-2010 (current dollars)

YEAR	MA	US	MA/US	RANK AMONG 50 STATES
1979	$200	$200	100	23rd highest (tied with 12 other states)
1989	$400	$350	114	4th highest (tie)
2000	$580	$508	114	6th highest
2010	$800	$653	123	1st (tied with Connecticut)

Sources: Monthly CPS public use files, 1979, 1989, 2000, and 2010

Appendix Table A-2:

Weekly Earnings of Employed Male and Female Workers in Massachusetts Relative to the US and Their Rank among the 50 States, 1979-2010

	MEN		WOMEN	
YEAR	RELATIVE EARNINGS RATIO	RANK AMONG 50 STATES	RELATIVE EARNINGS RATIO	RANK AMONG 50 STATES
1979	.93	34th highest	1.00	16th
1989	1.18	4th highest	1.14	6th highest (tie)
2000	1.13	4th highest (tied with 3 other states)	1.12	5th highest (tied with 3 other states)
2010	1.27	1st	1.17	3rd highest (tied)

setts was 7 percent below the US and the state only ranked 34th highest among the 50 states. Men clearly ranked below average in 1979. By 2010, the median weekly earnings of males were 27 percent above the US average and the state ranked first among the 50 states. Among women, median weekly earnings in 1979 were only equal to the US average but rose to 14 percent above the national average by 1989 and to 17 percent by 2010. The state's ranking improved from 16th highest in 1979 to 6th highest by 1989 and to third highest (tied with Connecticut) in 2010. For both men and women, the favorable shift in the relative wage position of the state over the past three decades was primarily attributable to the increased educational attainment of the employed, especially the sharp rise in the share of the employed with a bachelor's or higher degree.

Endnotes

1 For a review of the employment and wage concepts of the QCEW data base, see US Bureau of Labor Statistics, *BLS Handbook of Methods*, Chapter 5, "Employment and Wages Covered by Unemployment Insurance."

2 The employment level measures the number of employees on the payroll of the firm for the pay period covering the 12th day of the month.

3 For the definitions of the weekly wage measures in the Current Population Survey, see US Bureau of Labor Statistics, "Usual Weekly Earnings of Wage and Salary Workers, Second Quarter 2011," Washington, DC, July 19, 2011.

4 The QCEW employment and weekly earnings data are based on the physical location of the economic establishment or the government agency not on the location of the residences of the workers. A very high fraction of the workers in Suffolk County live in other areas of the state.

5 Due to their small numbers of workers, we did not include Dukes or Nantucket Counties in the wage analysis.

6 See Andrew Sum and others, *The State of the American Dream in Massachusetts, 2002* (Boston, MA: MassINC, 2002).

7 As was true of the QCEW weekly earnings data, the self-employed are not covered by the CPS weekly wage questions. Data on the annual incomes of the self-employed are collected in the March CPS supplement.

8 The computed mean on even the top coded data is approximately $200 above the median, indicating substantial right-hand side skewness in the distribution (i.e. high inequality at the top of the distribution).

9 All of the civilian employment growth over the past decade in Massachusetts was among women. Since women's wages are below those of men, a rising share of women workers by itself would modestly reduce the median wage for all workers. This explains why the overall wage rose slightly less than wages for men or women.

10 The dropout group also includes employed high school students 16 and older.

11 The first members of the large post-World War II Baby Boom generation turned 64 years at the end of the last decade.

12 For a review of the growing problems of underemployment in the US during the Great Recession, see Andrew Sum and Ishwar Khatiwada, "The Underemployed in the US During the Great Recession of 2007-2009," *Monthly Labor Review*, November 2010.

13 See Andrew Sum and Mykhaylo Trubskyy, "The Rising Tide of Wage Inequality in New England: An Assessment of Key Trends in Our Region Over the Past Three Decades," Report prepared for US Department of Labor, Employment and Training Administration, New England Regional Office, Boston, May 2003.

14 These relative wage measures have been used by labor market researchers in a wide array of national and international studies. See Richard Freeman and Lawrence Katz, "Rising Wage Inequality: The US Versus Other Advanced Industrial Countries," in *Working Under Different Rules* (Editor: Richard Freeman), Russell Sage Foundation, New York, 1994.

Chapter Seven

Household Income and Household Income Inequality

Prepared by:
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with
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Introduction

The findings in the previous chapters on the labor market experiences of Massachusetts workers are important indicators of the state of the American Dream in their own right. Career advancement and satisfaction in the workplace contribute directly to the attainment of the American Dream and to general mental and physical well being, and happiness.[1] But ultimately, measures of one's social class and whether one has made it to the "middle class" are typically based on the annual income of the household or family. The ability to secure and maintain a middle class income is a fundamental element of the American Dream.[3] This chapter and the following chapter are devoted to an analysis of the changing real annual incomes of Massachusetts households and families over the past decade (1999-2009/2010) and in prior decades. Evidence will be presented on the changes in the average real incomes of all Massachusetts households/families, those for key demographic and socioeconomic subgroups of households, and counties of the state as well as changes in those real incomes along the distribution over time.

The income fate of US households over the past few decades has varied fairly widely across key demographic, human capital, geographic, and income groups. Those households headed by college graduates, especially those holding professional or managerial jobs, by older individuals (45+) and married couple families with two college-educated spouses did well while younger, less educated, black and Hispanic, and many single-parent families lost ground.

Nationally, the past decade was marked by the absence of any positive growth in the median real income of the nation's households and by a continued rise in income inequality.[4] The median real income of the nation's households peaked in 1999-2000 at $53,000. During the recession of 2001 and the largely jobless recovery of 2002-2003, median real income fell by nearly $2,000.[5] After rising by about $1,600 over the next three years through 2007, median real income declined sharply during the Great Recession of 2007-2009. Over the 2007-2010 period, the median real household income in the US fell from $52,836 in 2007 to $50,046 in 2010, a decline of 5 percent.[6] The estimated median real household income of $50,046 in 2010 was $3,800, or 9 percent below its level in 1999. This marked the first time in post-World War II history where the median real income of households and families actually declined over an entire decade.

Nationally, both the household and family income distributions had been characterized by rising degrees of inequality during the 1980s and 1990s.[7] Households at the top of the income distribution, especially those in the upper decile, were experiencing far more substantial absolute and relative gains in their annual incomes and were increasing their shares of total household income. A wide variety of demographic forces and rising earnings inequality among workers were contributing to this sharp rise in household and family income inequality across the nation.[8] Few systematic public policy efforts were undertaken to address this growing income inequality problem, which has adverse consequences for future economic mobility in the US. Rising family income inequality also has substantial implications for

cognitive and educational attainment inequality among children in our nation's families.[9]

As will be shown below, the declines in the real incomes of US households over the past decade were more substantial in relative terms at the bottom and middle of the distribution, while modest gains were typically made at the upper end of the household income distribution. As a consequence, the percentage shares of aggregate household income captured by households in the bottom and middle of the distribution declined over the decade while those in the upper quintile (20 percent) of the income distribution increased. In four of the five years from 2005-2009, American households in the upper quintile obtained slightly more than one-half of the total household income pie.[10]

DECLINES IN THE INCOMES OF US HOUSEHOLDS WERE MORE SUBSTANTIAL AT THE BOTTOM AND MIDDLE OF THE DISTRIBUTION

During the past decade, the American and Massachusetts public have expressed growing concerns over the failure of average living standards to improve and with the rising degree of inequality in the income and wealth distribution. In a June 2001 public opinion poll sponsored by the Pew Research Center for the People and the Press, 44 percent of the respondents agreed with the statement that American society was becoming increasingly divided "between the haves and the have-nots."[11] In a 2007 national survey known as the Inequality Survey conducted by the Center for Survey Research and Analysis at the University of Connecticut, 72 percent of all those surveyed, including over 60 percent of high income respondents, agreed that "differences in income in America are too large."[12] Slightly over two-thirds of the respondents in this 2007 survey believed that "money and wealth should be more evenly distributed among a larger percentage of the population." This ratio represented an all time high in response to the same question asked in 11 different surveys that were undertaken between 1984 and 2007.[13] As noted by Benjamin Page and Lawrence Jacobs in their recent book *Class War? What Americans Really Think About Economic Inequality*, "Americans from widely different backgrounds agree that extreme inequality of income and wealth is bad and should be dealt with."[14]

Concerns about growing income and earnings inequality also have been raised right here in Massachusetts. In our earlier report *The State of the American Dream in Massachusetts: 2002*, both household and family income inequality were found to be on the rise in our state. Growing gaps between the incomes of the state's more affluent households (i.e., those at the 90th percentile and above) and those at the bottom and middle of the distribution were found to have taken place over the past few decades. Income inequality as measured by the Gini coefficient also was found to be rising in our state over the decade, and the sizes of relative household income differences in Massachusetts were found to be among the highest in the nation.[15] A 2010 MassINC public opinion poll found increasing pessimism among adults regarding the economic prospects of the next generation.

Political leaders, public policy officials, and business leaders from widely different segments of the political spectrum have expressed similar concerns about rising income and wealth inequality. In January 2007, then President George W. Bush in a speech at Federal Hall noted that "Income inequality is real and [has] been rising for more than 25 years."[16] Over the past decade, Alan Greenspan, the former chair of the Federal Reserve Board, frequently spoke out on his worries over the rising inequality of income and wealth. In a July 2005 presentation to the Senate Banking Committee, he referred

to the rise in income and wealth inequality as "a very disturbing trend."[17] In February 2005, he remarked that "In a democratic society, a stark bifurcation of wealth and income trends among large segments of the population can fuel resentment and political polarization." Ben Bernanke, Greenspan's successor, has also expressed concern about the rising degree of income inequality. In a 2007 speech, Bernanke argued that, while policymakers should not attempt to reduce flexibility in labor markets or "erect barriers to international trade and investment," there was a need to guarantee that "economic opportunity should be as widely distributed and equal as possible" and that "no one should be allowed to slip too far down the economic ladder, especially for reasons beyond his or her control."[18]

To better understand the challenge of income inequality and its implications for Massachusetts, we analyze data for the past 50 years looking at both the median level and distribution of household income during across various socioeconomic subgroups .[19]

Data Sources and Key Income Concepts

The estimates of mean and median household incomes and the distribution of those incomes in Massachusetts and the US over the past 50 years are based on a variety of different data sources. The major source of data is the public use files from the decennial Censuses of Population and Housing for 1960, 1970, 1980, 1990, and 2000. The long form questionnaire used in conducting each of those censuses collected data from a large sample of households on their annual pre-tax money incomes across the nation and state. The annual money income measures include all income from wages and salaries, self-employment, public and private pensions, cash transfers from governments at all levels (federal, state, and local), alimony and child support, and property income (dividends, interest payments, rents). These income measures are pre-tax and exclude in-kind transfers (food stamps, rental subsidies, Medicaid/Medicare benefits), capital gains, and implicit rental income from owning one's own home.

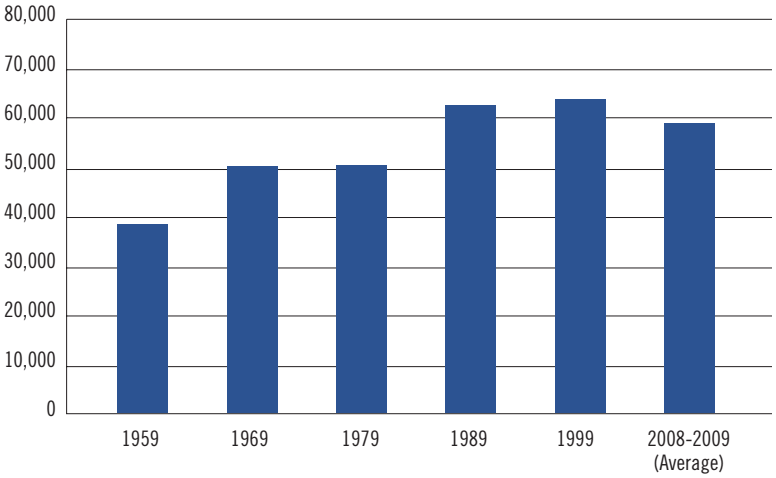
The second source of data on household incomes is the March 2009 and March 2010 Current Population Survey (CPS) supplements on income and work experience. These two national household surveys collect detailed information on the sources of the annual incomes of households in the calendar year prior to the survey. Our third source is the American Community Survey (ACS), which provides data on household incomes for a much larger sample of households. We have used both published and public use data for the 2009 and 2010 ACS surveys in Massachusetts and the US.[20] The annual money incomes for households in each year were converted into constant 2009 or 2010 dollars with the Consumer Price Index for All Urban Consumers (CPI-UX1). In most cases, household incomes for Massachusetts were converted into constant dollars with the Consumer Price Index for All Urban Consumers in the Greater Boston area.

Trends in the Median Real Annual Incomes of Massachusetts Households from 1959-2009

The past 50 years in Massachusetts have been marked by substantial variations in the decade-by-decade growth of the average real incomes of Massachusetts households (Charts 7-1 and 7-2). During the 1960s, which was part of the Golden Era of the post-World War II American economy, median real incomes of state households rose strongly, increasing by nearly $12,000 or 31 percent.[21] The state experienced a severe labor market recession from 1974 to 1975 that drove up the state unemployment rate sharply and pushed down household incomes. A strong high-tech employment boom from 1976 through the end of the decade helped produce income growth in the ending years of the decade, but the median real

Chart 7-1:

Trends in Median Real Household Incomes in Massachusetts Selected Years from 1959 to 2008-2009 (constant 2009 dollars)

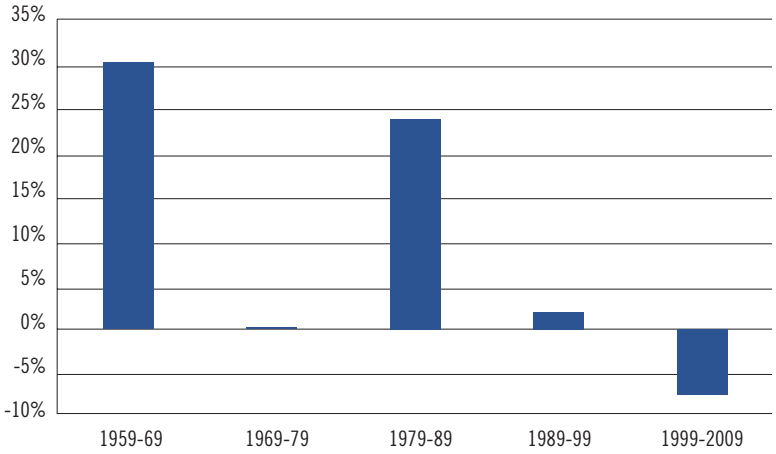


Sources: 1960, 1970, 1980, 1990, and 2000 Decennial Census and 2010 American Community Survey, tabulations by authors

Note: 1959 household estimate is based on 1 percent public use micro data sample from the 1960 Census of Population and Housing. In 1959, the Census Bureau identified family income, not household income. We selected the reference person of all households to estimate what we call "household" income.

Chart 7-2:

Trends in the Growth Rates of the Median Real Incomes of Massachusetts Households by Decade



household income only grew by little more than $100 or less than 1 percent over the decade.

The decade of the 1980s was characterized by very strong employment growth, full employment in labor markets from 1984 through 1988, and rising annual earnings and incomes. Median household income grew in Massachusetts by more than 25 percent from 1979 to 1989, far outpacing the growth rate for the nation as a whole (6.5 percent) and allowing the state to improve its household income growth rate ranking in the 1980s to the 2nd highest state, trailing only New Hampshire. The state experienced a very severe recession from early 1989 to the end of 1991. Despite strong payroll job growth from 1993 through 2000 and a sharp drop in unemployment and underemployment by the end of the decade, median real household income grew by only 1.7 percent (Chart 7-2). Over the most recent decade, according to recently released findings based on the 2010 American Community Survey, median real household income in Massachusetts fell by more than 6.1 percent, declining to $62,027 in 2010. This was the first decade since the end of the Great Depression of the 1930s when real median household income failed to grow in both our state and the nation. Over this time period, however, there were some household groups that obtained gains in their median real incomes while others experienced fairly large drops in their income.

Comparisons of the household income growth performance of Massachusetts over the past three decades with those for the US as a whole and each of the other 49 states are displayed in Table 7-1 and Chart 7-3. Over the past decade, median real household income in the nation fell even more rapidly than it did in the state (-9 percent vs. -6 percent). During this decade, the vast majority of states (48 of 50) experienced some decline in their median real income, with Massachusetts ranking 19th highest on this measure. In the decade of the 1990s, the modest 2 percent

Table 7-1:

Comparisons of Trends in Median Real Household Incomes in Massachusetts and the US, 1979-2010 (2010 US CPI-UX1 dollars)

GEOGRAPHIC AREA	1979	1989	1999	2010	PERCENT CHANGE, 1979-89	PERCENT CHANGE, 1989-99	PERCENT CHANGE, 1999-2010
Massachusetts	51,789	64,982	66,101	62,072	25.5	1.7	-6.1
US	49,626	52,855	54,965	50,046	6.5	4.0	-8.9
Mass. / US	104.3	122.9	120.3	124.0	--	--	--
Mass. Rank Among 50 States	19	6	5	6	2	39	19

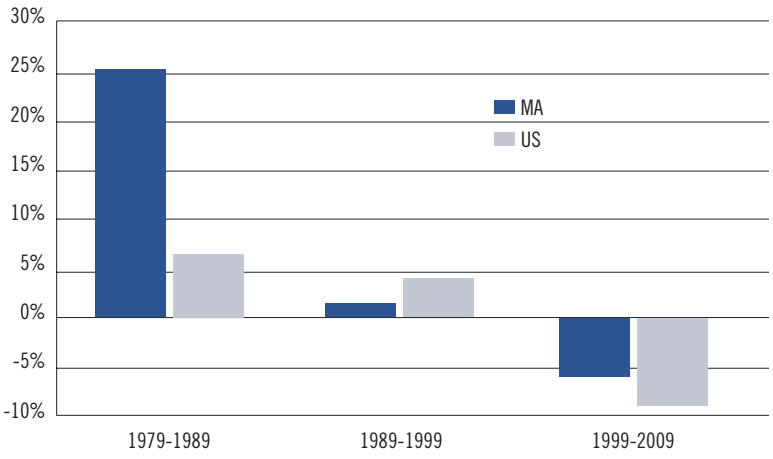
Sources: 1980, 1990, 2000 Decennial Census, public use files and 2010 American Community Surveys, public use files

growth rate of median household income in Massachusetts fell slightly below that of the US (4 percent), and the state ranked low on this growth measure (only 39th highest). The median real household income of the state in 2010 was several thousand dollars below its level in 1989 at the end of the Miracle Decade.

The state's last strong performance in improving the average real income of its households was during the Miracle Decade of the 1980s. Between 1979 and 1989, the median real income of the state's households increased from $51,800 to just under $65,000, an increase of $13,200 or 26 percent. This rate of growth in median household income was four times higher than that for the nation and the state's growth rate was second highest in the nation, exceeded only by New Hampshire. Back in 1979, the state's median household income was only 4 percent higher than the nation and the state only ranked 19th highest among the 50 states. By 1989, the state's median household income was 23 percent above that of the nation, and its rank improved to 6th highest, the same rank it held in 2009.

Chart 7-3:

Comparisons of the Growth Rates of the Median Incomes of US and Massachusetts Households Over the Past Three Decades



The Changing Family Composition of Households and Its Impacts on Estimates of Household Income Growth in Massachusetts from 1999-2009

Both nationally and in Massachusetts, the structure and composition of households have changed in a number of substantive ways over the past few decades. Among these structural changes has been the rising share of households that are not family households. These non-family households included persons (including many older households) living on their own or with one or more other persons to whom they are not related by blood, marriage, or adoption. Given the frequent absence of multiple earners in these non-family households and their lower annual earnings, a rise in the share of non-family households would by itself tend to lower average household income.

The findings of the 2000 Census of Population and Housing and the 2009 American Community Surveys were used to identify the numbers and family composition of state households and changes in the median real incomes during the 2000-2009 period of both groups of households. At the time of the 2000 Census, there were 2.4 million resident households in the state of whom 1.6 million or 64.5 percent were family households (Table 7-2). Over the next nine years, the number of households in the state would rise only modestly to 2.475 million or 1.3 percent. All of the growth in state households took place among non-family households whose numbers rose by nearly 52,000, or 6 percent, while family households declined by close to 20,000 or 1.3 percent. The non-family share of households rose from 35.5 percent to 37.1 percent, a gain of 1.6 percentage points.

In 1999, the median income of family households in Massachusetts (in 2009 dollars) was around $83,300, more than double that of non-family households ($38,100). Over the following decade, the median real incomes of Massachusetts family households experienced a slight decline (-.3 percent) while that of non-family households fell by $1,042 or close to 3 percent. The decline of 3 percent in median real household income in the state was thus influenced by a combination of a shift in the composition of households to non-family households with their lower median incomes and to a modest decline (-2.7 percent) in the median real incomes of these non-family households.

Table 7-2:

Trends in the Number of Households and Family/Non-Family Households in Massachusetts, 2000-2009

HOUSEHOLD TYPE	2000	2009	ABSOLUTE CHANGE	PERCENT CHANGE
All households	2,443,580	2,475,492	31,912	1.3%
Family households	1,576,696	1,557,057	-19,639	-1.3%
Non-family households	866,884	918,435	51,551	6.0%
Family households as % of total households	64.5	62.9	-1.6	

Sources: Census 2000 and 2009 American Community Survey

Table 7-3:

Trends in Median Real Household Incomes in Massachusetts by Type of Household, 1999- 2009 (constant 2009 Boston CPI-U dollars)

TYPE OF HOUSEHOLD	1999	2009	ABSOLUTE CHANGE	PERCENT CHANGE
All households	66,420	64,367	-2,053	-3.1%
Family households	83,278	83,057	-221	-.3%
Non-family households	38,922	37,880	-1,042	-2.7%

Sources: 2000 Census of Population and Housing, public use files; 2009 American Community Survey, public use files

Changing Household Incomes Across Age, Race/Ethnic, and Educational Attainment Groups

In recent decades in the US and here in Massachusetts, households and families headed by younger adults have fared least well in improving their real income position.[22] To track changes in the median real incomes of state households by age over the past decade, we classified them into the following four age groups based on the age of the householder: under 30, 30-44, 45-64, and 65+. Estimates of their median real annual incomes over the 1999-2009 time period and the changes in those incomes are displayed in Table 7-4.

Over the decade, not one of these four age groups of households were able to improve their median real annual incomes; however, the state's older households (those with a head 65+) came the closest to maintaining their real income position. Their median real household income dropped by only $220 or about .6 percent. Those households in the 30-44 age group experienced a 2 percent drop in their median real incomes while the youngest households (a head under 30 years of age) fared the worst, with a decline of slightly more than 7 percent in their median real income.

Changes in median household incomes in Massachusetts across race/ethnic groups differed considerably over the past decade. Each household in the state was classified into one of four race/ethnic categories based on the race-ethnic characteristics of the householder (Census defines householder as the person in whose name the housing unit is owned or rented).[23] The median incomes of these households in 1999 ranged from a low of slightly under $36,000 for Hispanics to a high of just under $70,000 for White, non-Hispanics, a nearly two to one difference from top to bottom (Table 7-5). Over the past decade, the median incomes of Massachusetts households declined for each major race-ethnic group except for Asians where a very substantial growth (25 percent) took place in their incomes

Table 7-4:

Trends in Real Median Household Income in Massachusetts by Age of Householder, 1999-2009 (constant 2009 dollars)

AGE OF HOUSEHOLDER	1999	2009	ABSOLUTE CHANGE	PERCENT CHANGE
Under 30	53,136	49,374	-3,762	-7.1%
30 – 44	78,376	76,960	-1,416	-1.8%
45 – 64	83,026	77,460	-5,566	-6.7%
65+	35,203	34,982	-221	-.6%
All	66,420	64,367	-2,053	-3.1%

Table 7-5:

Trends in Real Median Household Income in Massachusetts by Race/Ethnicity of Householder, 1999-2009 (constant 2009 dollars)

RACE/ETHNIC ORIGIN	1999	2009	ABSOLUTE CHANGE	PERCENT CHANGE
Asian	66,420	82,957	18,537	25%
Black, not Hispanic	44,367	42,978	-1,391	-3%
Hispanic	35,867	31,983	-3,883	-11%
White, not Hispanic	69,741	67,995	-1,746	-2%

Chart 7-4:

Percent Change in Median Real Household Income by Race/Ethnicity of Householder, 1999-2009 (constant 2009 dollars)

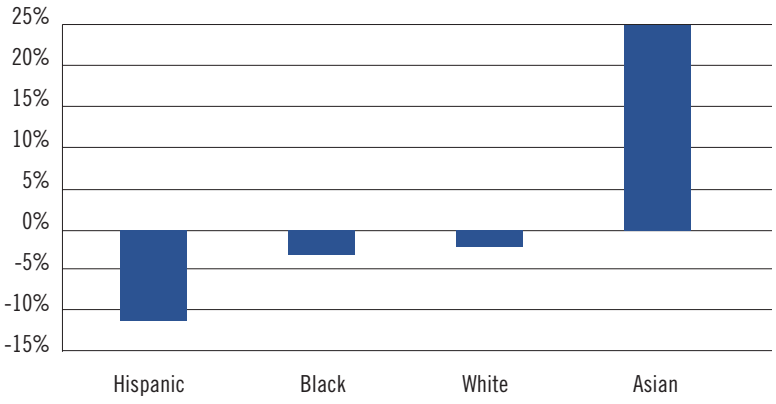


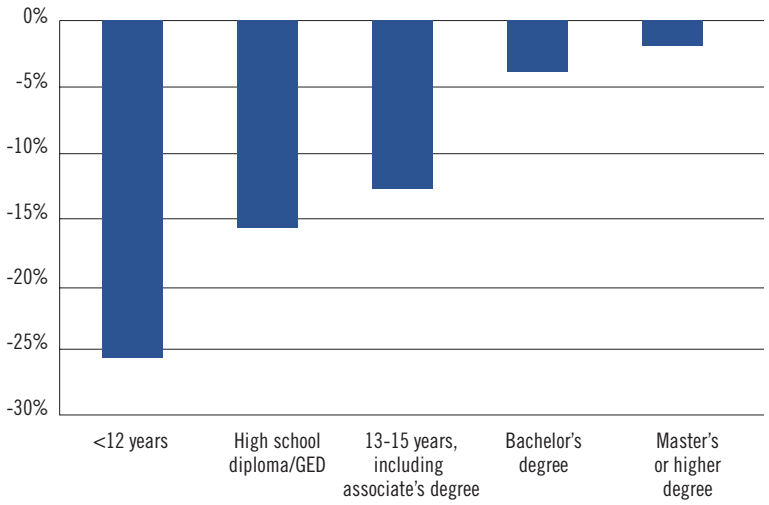
Table 7-6:

Trends in Real Median Household Income in Massachusetts by Educational Attainment of Householder, 1999-2009 (constant 2009 dollars)

EDUCATIONAL ATTAINMENT	1999	2009	ABSOLUTE CHANGE	PERCENT CHANGE
<12 or 12 years, no diploma/GED	31,218	22,988	-8,230	-26%
High school diploma/GED	51,011	43,078	-7,933	-16%
13-15 years, including associate's degree	66,420	57,970	-8,450	-13%
Bachelor's degree	93,254	89,953	-3,301	-4%
Master's degree or higher	112,915	110,942	-1,973	-2%

Chart 7-5:

Percent Change in Real Median Household Income in Massachusetts by Educational Attainment of Householder, 1999-2009



moving them into the highest income category in the state. The median household incomes of the other three race/ethnic groups declined by anywhere from -2 percent (White, non-Hispanics) to -11 percent for Hispanics (Chart 7-4). In 2009, the median incomes of Massachusetts households ranged from a low of $32,000 for Hispanics to a high of just under $83,000 for Asians, a relative difference of 2.6 to 1.0 from top to bottom.

What can explain these extraordinarily large differences in household income growth across race/ethnic groups over the past decade? Several different factors appear to have influenced this outcome. As will be revealed in more detail in the following chapter, a rising fraction of Asian families are headed by individuals who possesses a bachelor's degree or higher. Asians ranked highest on this educational attainment measure in 2010. A higher share of Asian households are family households than in any other race/ethnic group, and among family households, Asians contain the highest share of married couple families. These high levels of educational attainment and strong family formation patterns have enabled Asian households to achieve the highest median household incomes in the state by 2009.

Over the past decade, all of the employment and wage outcomes for Massachusetts adults were more favorable for the college educated while those adults with no post-secondary schooling, especially high school dropouts, fared badly. One would expect these differences in key labor market outcomes to influence the annual incomes of households by educational attainment of the household head. All households residing in the state in 1999 and 2009 were assigned to one of five educational attainment groups, ranging from those lacking a high school diploma/GED to those holding a master's or more advanced degree.

Over the decade, the educational composition of household heads in Massachusetts changed in a number of substantive ways. The number of household heads with no post-secondary schooling declined by double digits with a one-third drop in the number of households headed by an individual with no high school diploma. The number of households headed by a person with a bachelor's degree or higher rose by 162,000 or 20 percent over the decade. Slightly over 40 percent of Massachusetts householders held a bachelor's degree or higher, the highest such ratio among all 50 states in the country in 2009.

Over the past decade (1999-2009), the median real incomes of every educational group of households in the state declined; however, the percentage point size of these income reductions

varied widely across educational groups (those with a four-year degree or higher had the smallest reductions). Median real incomes of households headed by a high school dropout fell by 26 percent and those headed by high school graduates or with 1-3 years of college declined by double digits (-16 and -13 percent, respectively). Those households headed by a bachelor's degree holder lost only 4 percent and those headed by an advanced degree holder lost only 2 percent. During 2009, the median annual incomes of Massachusetts households ranged from a low of $23,000 for those lacking a high school diploma to $43,000 for those with a householder holding a high school diploma to a high of nearly $111,000 for those headed by a person with a master's degree or higher, a roughly five to one difference from top to bottom. In 1989, the ratio of these two median incomes was closer to three to one.

Household Income Growth/Decline Across Counties of the State

Earlier research work on income and wage changes across geographic areas of the state in previous decades had revealed a number of widening geographic disparities; the western region of the state tended to fall further behind the average wages and household/family incomes of those residents in the Greater Boston region.[24] The median real incomes of households in 12 counties across the state between 1999 and 2009 were examined to identify differences in their growth rates/declines over the decade.[25]

Median household incomes over the 1999-2009 decade declined in 10 of these counties, remained basically unchanged in Worcester County (a decline of only -.4 percent), and increased in Suffolk County by close to 5 percent. The western counties of the state (Berkshire[26], Franklin, Hampshire, and Hampden) tended to fare the worst with declines of 10 to 18 percent over the decade, but even households in the high-income counties of Middlesex, Norfolk, and

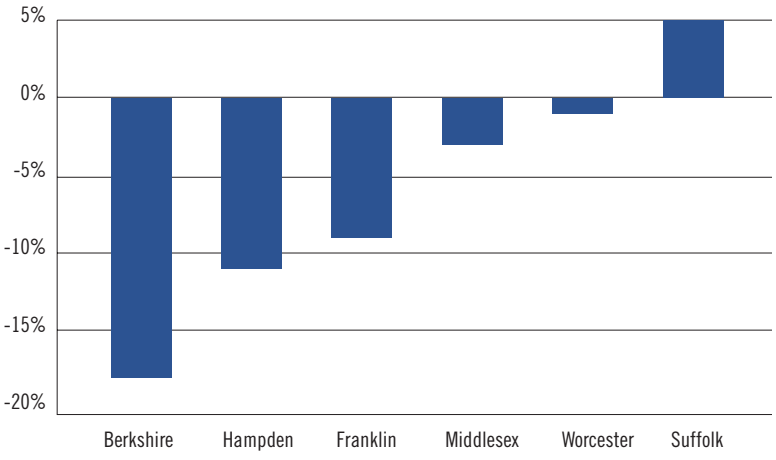
Table 7-7:

Trends in Real Median Household Income in Massachusetts Counties, 1999-2009 (constant 2009 Boston CPI-U dollars)

COUNTY	1999	2009	PERCENT CHANGE
Barnstable	61,013	57,947	-5.0
Berkshire	51,866	42,290	-18.5
Bristol	57,776	54,389	-5.9
Essex	68,508	62,986	-8.1
Franklin	54,152	49,050	-9.4
Hampden	52,757	46,809	-11.3
Hampshire	61,232	56,661	-7.5
Middlesex	80,788	78,077	-3.4
Norfolk	84,256	79,869	-5.2
Plymouth	73,873	71,130	-3.7
Suffolk	52,275	54,771	4.8
Worcester	63,591	63,360	-0.4

Chart 7-6:

Percent Change in Real Median Household Incomes in the Three Massachusetts Counties with the Lowest and Highest Growth Rates, 1999-2009

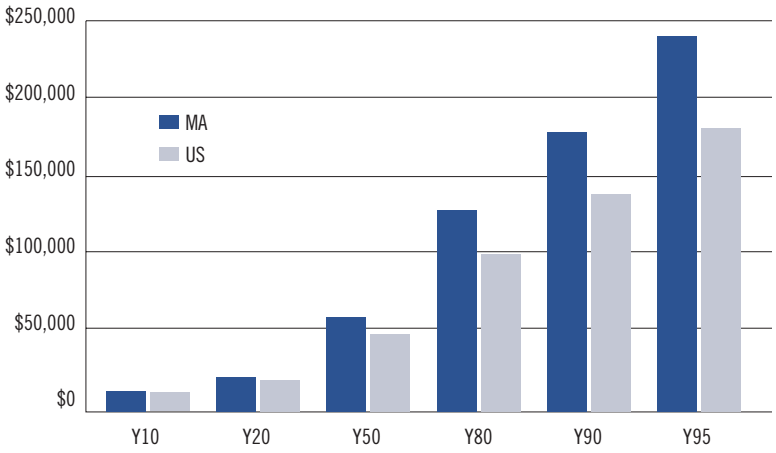


Plymouth experienced declines in their median household incomes of 3 to 5 percent.

Over the past few decades, annual average per capita and median household incomes have been diverging across counties of the state. For example, in 1989, the median household incomes of Middlesex and Norfolk Counties (the two highest income counties of the state) exceeded those of the four western counties by 34 percent to 51 percent. By 2009, the relative size of these median household income differences had widened from 39 percent to 88 percent. From an economic perspective, these widening income disparities across geographic areas are making Massachusetts less of a true geographic "Commonwealth."

Chart 7-7:

The Distribution of Annual Household Incomes at Selected Percentiles of the Income Distribution in Massachusetts and the US, 2009/2010 (constant 2010 dollars, numbers in 1000s)



Source: March CPS Supplement, 2010 and 2011 US Census Bureau, public use files, tabulations by authors

Table 7-8:

Values of Relative Household Income Ratios at Selected Percentiles of the Distribution in Massachusetts and the US, 2009/2010

RELATIVE INCOME RATIO	VALUES FOR MA	VALUES FOR THE US	MA – US
Y_{90}/Y_{10}	13.7	11.5	+2.2
Y_{90}/Y_{20}	8.0	6.9	+1.1
Y_{90}/Y_{50}	3.0	2.8	+.2
Y_{80}/Y_{20}	5.8	5.0	+.8
Y_{50}/Y_{10}	4.7	4.1	+.6

Source: March CPS Supplement, 2010 and 2011, US Census Bureau, public use files, tabulations by authors

The Changing Household Income Distribution in Massachusetts

During the last two decades of the 20th century, the distribution of incomes among Massachusetts and US households and families had been becoming increasingly more unequal.[27] To identify whether these income inequality trends continued over the past decade (2000-2010), we conducted a set of analyses of changes real household income at various points along the income distribution.

The annual incomes (Y) of Massachusetts households at selected points along the income distribution in 2009/2010 were estimated and compared to one another. Many household and family income analysts, including those at the US Census Bureau, identify the size of incomes at the lower end of the distribution (the 10th and 20th percentiles), the middle of the distribution (50th percentile), and the upper end of the distribution (80th and 90th percentiles). In 2009/2010, the values of the annual money incomes of Massachusetts households along the distribution ranged from lows of $13,100 at the 10th percentile, $22,400 at the 20th percentile, nearly $61,000 in the middle of the income distribution (50th percentile), to a high of slightly over $241,000 at the 95th percentile (Chart 7-7).

The values of these annual incomes at selected percentiles of the distribution can be compared to one another. The values of selected relative income ratios frequently appearing in the applied income literature are displayed in Table 7-8. The Y90/Y10 and Y90/Y20 measures are frequently used to represent the relative income gaps

between the top and bottom of the income distribution. In 2009/2010, here in Massachusetts, the income at the 90th percentile ($179,400) was 13.7 times as high as that at the 10th percentile ($13,100) and 8 times as high as the income of a household at the 20th percentile. The Y90/Y50 measure represents the relative income gap between the near top of the distribution and the middle. In 2009, the value of this ratio was 3.0. The Y50 / Y10 measure captures the relative size of the income gap between the middle and near bottom of the distribution. In 2009/2010, a Massachusetts household at the middle of the distribution received nearly 5 times as much income as a household at the 10th percentile.

The degree of household income inequality in Massachusetts has risen considerably over the past 50 years across all of these key relative income measures, and the state has moved from one of the most economically egalitarian states in 1959 to the top or near top of the income inequality distribution in 2009/2010, representing a massive shift in income inequality. In 1959, the Y90/Y10 ratio in Massachusetts stood at 7.2, it rose to 9.2 in 1979, and it increased sharply to 13.7 by 2009/2010, a doubling in the relative amount of inequality between these two percentiles over this 50-year period (Table 7-9 or Chart 7-8). The Y90/Y20 income ratio also doubled in size from 1959 to 2009/2010, rising from 3.8 at the beginning of this period to 8.0 by the end. The relative size of the income gap for Y80/Y20 also rose very sharply, increasing from only 3.0 in 1959 to 5.8 in 2009/2010. The income gap between the middle (Y50) and the near bottom (Y10) of the distribution also increased steadily over this time period, but the ratio rose to a slower degree than the relative income measures, capturing gaps between the top and bottom. The Y90/Y50 ratio increased from 2.0 in 1959 to 3.0 in 2009/2010.

Over the past 50 years, household income inequality rose more rapidly in Massachusetts than in the country, and the state's ranking among the 50 states in income inequality deteriorated considerably. In 1959, the Y90 /Y10 measure in Massachusetts ranked only 43rd highest among the 50 states. The state was clearly one of the most egalitarian in the nation, joined by many of her New England neighbors. Among the 50 states, on this income inequality measure, Connecticut ranked lowest, followed by New Hamp-

Table 7-9:

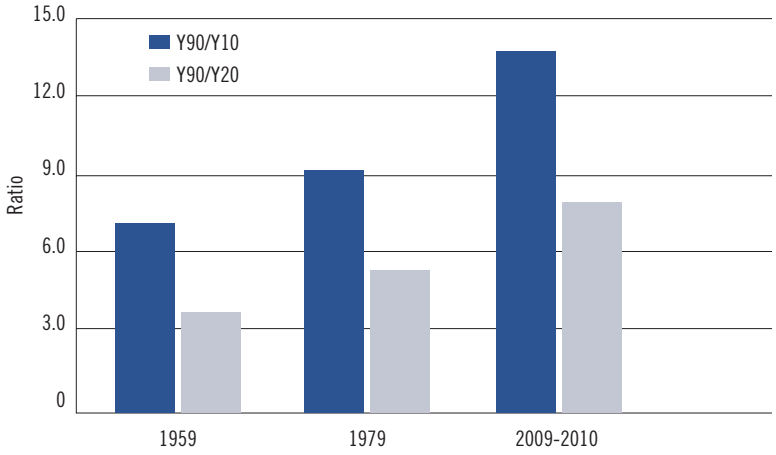
Trends in Relative Household Income Inequality in Massachusetts Across Selected Percentiles of the Income Distribution and Their Rank Among the 50 States, Selected Years 1959 to 2009/2010

	1959		1979		2009/2010	
HOUSEHOLD INCOME INEQUALITY MEASURE	RATIO	MA RANK	RATIO	MA RANK	RATIO	MA RANK
Y_{90} / Y_{10}	7.2	43rd	9.2	23rd	13.7	2nd
Y_{90} / Y_{20}	3.8	47th	5.4	18th	8.0	2nd
Y_{90} / Y_{50}	2.0	39th	2.2	26th	3.0	5th
Y_{50} / Y_{20}	3.0	48th	4.1	18th	5.8	2nd
Y_{50} / Y_{10}	3.5	41st	4.1	21st	4.7	2nd

Sources: 1960 Census of Population and Housing, public use files; 1980 Census of Population and Housing, public use files; 2010-2011 March CPS supplement, public use files

Chart 7-8:

Trends in the Size of the Y90/Y10 and Y90/Y20 Income Ratios in Massachusetts from 1959 to 2009/2010



shire at 3rd lowest, Maine at 5th lowest, Massachusetts at 8th lowest, and Rhode Island ranked 10th lowest. By 1979, however, Massachusetts ranked 23rd highest on this income inequality measure. The state moved to ninth highest by 1999, and to second place in 2009/2010 trailing only New York. Similar findings apply to most of the other household income inequality ratios. On the Y90/Y20 measure, the state's ranking went from 47th in 1959 (or 4th lowest) to 18th highest in 1979, and to second highest in 2009/2010.

On the Y90/Y50 measure, the state's ranking went from 39 highest in 1959 to 26th, or the middle of the pack in 1979, to a high of 5th highest (tied with Georgia) in 2009/2010. On the Y50/Y10 measure, representing the relative size of the income gap between the middle (50th percentile) and near bottom (10th percentile) of the distribution, the state's ranking also deteriorated substantially over the past 50 years. The state moved from 41st highest in 1959 to 21st highest by 1979 and to 2nd highest in the nation by 2009/2010. Other Northeastern states including New York (3rd), Rhode Island (4th), New Jersey (7th), and Connecticut (16th) also ranked high on this key income inequality measure in 2009. Most of the states in the Northeast had shifted from among the most egalitarian in the nation in 1960 to leaders in household income inequality over the past 50 years.[28]

Table 7-10:

Trends in the Real Mean Annual Income of Massachusetts Households by Decile of the Distribution from 1989 to 2009/2010 (constant 2010 dollars)

DECILE	1989	2009 – 2010	ABSOLUTE CHANGE	PERCENT CHANGE
Lowest	8,248	7,696	-552	-6.7
Second	19,948	17,488	-2,461	-12.3
Third	33,274	28,366	-4,908	-14.8
Fourth	46,516	40,194	-6,322	-13.6
Fifth	59,351	53,235	-6,116	-10.3
Sixth	72,871	69,411	-3,460	-4.7
Seventh	87,810	89,925	2,115	2.4
Eighth	106,458	113,195	6,737	6.3
Ninth	133,782	151,111	17,328	13.0
Top	227,002	291,965	64,963	28.6

Sources: 1990 Census, March CPS Supplement, 2010-2011, public use files, tabulations by authors

Trends in Mean Household Incomes within Deciles of the Household Income Distribution in Massachusetts

Following the end of the Miracle Decade of the 1980s, household income growth in Massachusetts diverged considerably across deciles of the household income distribution (Table 7-10).[30] Households in the bottom half of the distribution experienced substantial declines in their mean real incomes, with the size of these reductions ranging from -7 to -15 percent. In contrast, Massachusetts households in the upper 40 percent of the income distribution experienced gains in their mean household incomes, with the size of these increases rising steadily with their position in the income distribution. Households in the seventh decile obtained a 2.4 percent increase in their mean incomes over this 20 year period versus a 6.3 percent rise for those in the eighth decile, a 13 percent increase for those in the 9th decile, and a 29 percent rise for those in the top decile. The $65,400 mean gain in income for those households in the top decile substantially exceeded the combined income gain for all households in the bottom nine deciles. This development led to a substantial upward shift in the percentage share of annual income captured by the upper 10 percent of the income distribution between 1989 and 2009/2010 in our state.

The percent shares of total pre-tax money incomes obtained by Massachusetts households in each quintile of the income distribution between 1959 and 2009/2010 are displayed in Table 7-11. At the beginning of this period in

Table 7-11:

Trends in the Share of Total, Pre-Tax Money Household Income Received by Households in Selected Segments of the Income Distribution in Massachusetts, 1959-2009/2010

	1959	1969	1979	1989	1999	2009-2010	PERCENTAGE CHANGE, 1959-2009
Bottom 20	5.1%	4.4%	4.1%	3.7%	3.2%	2.9%	-2.2%
Middle 20	17.7%	17.7%	17.3%	16.7%	15.1%	14.2%	-3.5%
Top 20	40.9%	42.1%	43.1%	45.0%	49.7%	51.4%	10.5%
Top 10	25.2%	26.1%	26.2%	28.3%	33.2%	33.8%	8.6%
Top 20/Bottom 20 ratio	8.0	9.6	10.5	12.2	15.5	18.0	

Sources: 1960, 1970, 1980, 1990, 2000 Decennial Census, public use files and CPS March Supplements, 2010-2011, public use files. tabulations by authors

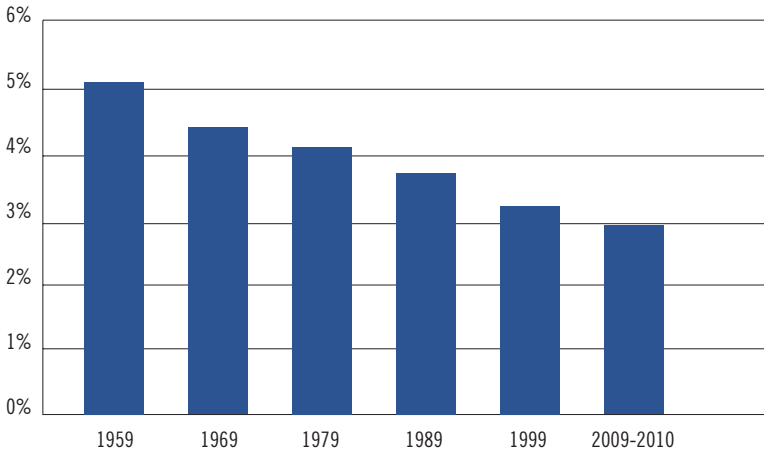
1959, the bottom quintile captured only 5 percent of total household income, the middle fifth obtained nearly 18 percent, an income share not far removed from their share of all households in the state (20 percent), and the top quintile received about 41 percent of the income pie, or about eight times as high as that of the bottom quintile.

Over the next 50 years, the distribution of household income in the Commonwealth became steadily more unequal with each of the bottom four quintiles losing part of their share while the top quintile gained share, especially after 1979 (Table 7-4). The bottom quintile of the state's households lost income share consistently over this 50-year period, falling from 5.1 percent in 1959 to 4.1 percent by 1979 and to a low of 2.9 percent in 2009/2010, a near halving of their money income share (Chart 7-9).

The middle quintile came close to holding onto their income share through 1979 then experienced steady and steep declines falling from 17.3 percent to 14.2 percent by 2009/2010 (Chart 7-10). All of the gains in income share went to Massachusetts households in the top quintile of the distribution, with the bulk of those increases taking place after 1979. From 1979 to 2009/2010, their share rose from 43.1 percent to 51.4 percent, an increase of 8.3 percentage points

Chart 7-9:

Trends in the Share of Household Money Income Received by Massachusetts Households in the Bottom Quintile of the Distribution, 1959 to 2009/2010



(Chart 7-11). Households in the top decile garnered most of this increased share from 1979 to 2009 (8.8 percentage points of the 9.1 percentage points rise for the entire top quintile).

The relative size of the gaps in income shares between the top and bottom quintiles of the distribution rose substantially over the past 50 years, moving our state to the near top of the income inequality distribution. In 1959, the top quintile received eight times as much money income as the bottom quintile (Table 7-12). This ratio

Chart 7-10:

Trends in the Share of Household Money Income Received by Massachusetts Households in the Middle Quintile of the Distribution, 1959-2009/2010

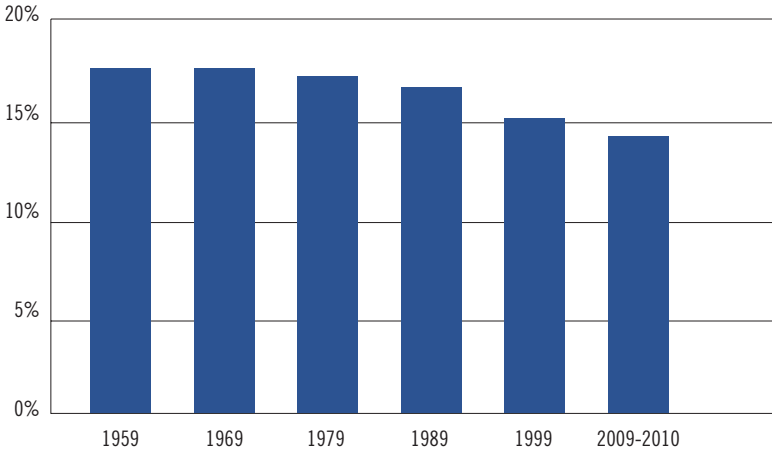


Table 7-12:

Matching the Share of Total Household Income Received by the Top 10 Percent Most Affluent Households in Massachusetts with the Percent of Lower Income Households Whose Money Incomes Must Be Combined to Equal the Share of the Top 10, 1959-2009/2010

YEAR	INCOME SHARE OF TOP 10 PERCENT	PERCENT OF LOWER INCOME HOUSEHOLDS WHOSE INCOMES MUST BE COMBINED TO MATCH THE TOP 10 PERCENT
1959	25.2%	49%
1969	26.1%	52%
1979	26.2%	54%
1989	28.3%	57%
1999	33.2%	66%
2009/2010	33.8%	70%
Change from 1959 to 2009/2010	8.6%	21%

rose both steadily and strongly over the next 50 years, rising to 10.5 times in 1979, to 15.5 times in 1999, and to 17.6 times in 2009/2010. The relative gap in income shares between the top and bottom quintiles in our state was considerably higher than that for the nation (15.1 times) in 2009/2010.

To illustrate the changing degree of concentration in the household income distribution in Massachusetts over the past 50 years, we conducted the following income simulation. For each year, we determined how many (in percentage terms) of the state's households from the bottom of the income distribution on up we would have to combine to match the income share of the top decile (Table 7-12). In 1959, the top decile of households obtained slightly more than one-fourth of all household incomes. To match this income share the incomes of the bottom 49 percent of households would have had to be combined. In other words, the annual money incomes of the top 10 percent were approximately equal to the combined incomes of the bottom 50 percent.

By 1979, the income share of the top 10 percent had risen modestly to 26.2 percent. To match their income share, we would have to add the incomes of the bottom 54 percent of households. Over the next three decades, the income share of the top 10 percent rose dramatically, reaching 35 percent by 2009. To match the income share of the most affluent 10 percent of households, we would have to combine the annual incomes of the bottom 70 percent of Massachusetts households during that year.

The dollar equivalent of these rising income shares of the top quintile can provide important insights into the economic magnitude of these shifts in income shares. During 2009/2010, aggregate household income in Massachusetts was estimated at $227.2 billion, yielding a mean household income of $86,259 for the 2.6 million households in the state. The top quintile obtained 52.2 percent of all household income

in the state, yielding them $116.7 billion in total income or about a mean income of $221,538. Those households in the top decile obtained mean incomes of about $292,000. A shift in the top quintile's share of combined money income from 40.9 percent in 1959 to 52.2 percent in 2009/2010 is equivalent to a rise of $25.6 billion in their aggregate income in 2009/2010 or about $48,000 per household.

The Changing Household Income Distribution in the US and Comparisons with the Massachusetts Income Distribution

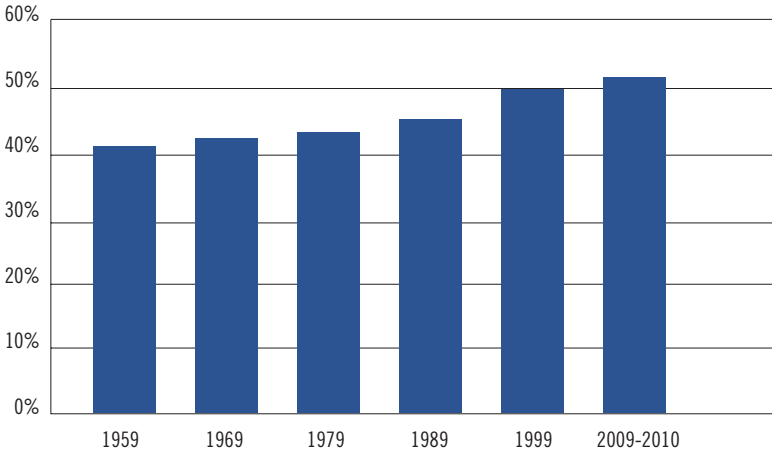
Clearly, the Massachusetts household income distribution has become increasingly unequal over the past 50 years, with particularly large shifts after 1989 at the end of the so-called Economic Miracle. How does the increasing concentration of money income at the top of the distribution in Massachusetts compare to that for the nation as a whole over the same time period? Answers to this question are displayed in Table 7-13 and Chart 7-12.

The shares of money income obtained by US households in the bottom and middle quintiles of the household income distribution declined from 1959 to 2009/2010, as did those in the second and fourth quintiles, while those of the top quintile increased, with the bulk of the gain in income at the top going to households in the top decile of the distribution (Chart 7-12).[31] The share of income received by the bottom quintile was very low (4 percent) at the beginning of this period, fell only modestly to 3.9 percent by 1979, then dropped to 2.9 percent by 2009/2010 (Table 7-13). The middle quintile lost share fairly steadily throughout this period, declining from 17.5 percent in 1959 to only 14.2 percent in 2009/2010.

In sharp contrast, the top quintile gained share, especially after 1979, and in both 1999 and 2009/2010 they received approximately half

Chart 7-11:

Trends in the Share of Household Money Income Received by Massachusetts Households in the Top Quintile of the Distribution, 1959-2009/2010



Sources: 1960 to 2000 Censuses of Population and Housing, public use files, tabulations by authors; 2010-2011 March CPS supplement, public use files

Chart 7-12

Time Trends in the Shares of Household Income Received by US Households in the Bottom and Top Quintiles of the Income Distribution, 1959 to 2009/2010

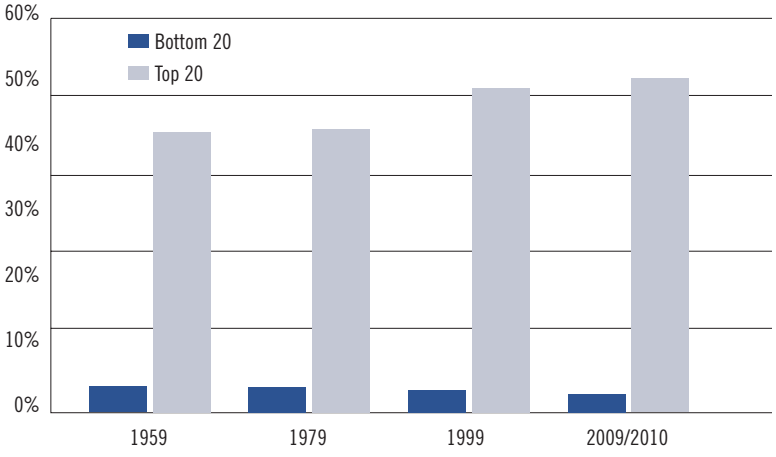


Table 7-13:

Trends in the Share of Total Pre-Tax Money Household Income Received by Households in Selected Segments of the Distribution in the US, 1959-2009/2010

QUINTILE OR DECILE OF DISTRIBUTION	1959	1969	1979	1989	1999	2009-2010	PERCENTAGE POINT CHANGE, 1959-2009/2010
Bottom 20	4.0%	3.8%	3.9%	3.6%	3.4%	2.9%	-1.1%
Middle 20	17.5%	17.4%	17.0%	15.9%	15.0%	14.2%	-3.3%
Top 20	43.2%	43.8%	43.7%	46.9%	49.9%	51.4%	8.2%
Top 10	26.8%	27.3%	26.7%	30.0%	33.5%	33.8%	7.0%
Top 20/Bottom 20 ratio	10.8	11.5	11.2	13.0	14.7	17.7	

Sources: 1960, 1970, 1980, 1990, 2000 Decennial Census and CPS March Supplement 2010-2011, public use files, tabulations by authors

of all of the pre-tax money income in the country. Findings from the Federal Reserve Board's tri-annual survey of the incomes and wealth of US households suggest that the share of income received by the top 10 and 20 percent are likely several percentage points (3-5 points) higher than this.[32] Within the top quintile, the increase in income share came primarily from those in the top 10 percent. Their share of income rose from 26.8 percent in 1959 to 33.8 percent in 2009/2010, a rise of 7 percentage points, while the second most affluent decile increased their share from 16.4 percentage points to 17.5 percentage points in 2009/2010, a rise of only 1.1 percentage points. In both the nation and the state, the bulk of the shift in the distribution of income over the past 50 and 20 years involved increasing the share of the most affluent 10 percent of households while the bottom 80 percent experienced declines in their shares of the aggregate income pie.

How do the changes in the shares of income received by households in the bottom, middle, and top quintiles of the income distribution in Massachusetts compare to those of their US peers over the past 50 years? Findings in Table 7-14 and Chart 13 clearly reveal that income inequality has increased more rapidly in the state than in the country over this 50-year period. Back in 1959, the bottom quintile of households in Massachusetts captured 5.1 percent of the income pie versus only 4.0 percent in the US, a difference of 1.1 percentage points in favor of the state (Table 7-14 and Chart 7-13). By 1989, the bottom quintile's share of income had declined more rapidly in Massachusetts than in the US, generating near equality in their shares of income at 3.7 percent and 3.6 percent, respectively. By 2009/2010, Massachusetts households in the bottom quintile captured a lower share of the income pie than their US peers (2.9 percent vs. 3.3 percent).

Similar patterns prevailed for the middle quintile of the household income distribution. From 1959 to 1989, the middle quintile in our state obtained a slightly higher share of household income than their national counterparts. Following 1989 through 2009/2010, however, the middle quintile of households in Massachusetts lost part of their share of income and fell below the national share in 2009/2010. Their percentage share declined from 16.7 percent in 1989 to 14.2 percent in 2009/2010 versus a national share of 14.6 percent in the latter years.

The top quintile of households in both Massachusetts and the US substantially increased their share of income over the 1959-2009/2010

period. At the beginning of this period, the share of income captured by the top income quintile of households in the state was 2.3 percentage points below that of their national peers (40.9 percent vs. 43.2 percent). By 1979, their shares had come close to equality, although they again diverged somewhat during the 1980s when the Massachusetts Economic Miracle produced high income gains for households in lower deciles of the distribution. By 2009/2010, however, the top quintile of households in Massachusetts secured more than half (51.4 percent) of all household income in the state, exceeding the national share (50.2 percent) for the first time since the end of World War II. Household incomes in Massachusetts in 2009/2010 were more concentrated at the top (highest 20 percent, especially the top 10 percent) than in the country as a whole and, as noted earlier, were among the most unequal in the country.

What social and economic forces underlie this substantial rise in household income inequality in our state over the past 50 years?[33] A wide array of demographic, household formation, changing employment behavior, and labor market earnings forces have contributed to the very sharp rise in inequality. One of the most prominent trends has been the rising share of non-family households, comprised of either individuals living on their own (including elderly widows) or with others to whom they are not related. Given the smaller number of adult earners in such households, an increase in their relative numbers would raise inequality. A higher share of families, especially those with children present in the home, is comprised of non-married couple families, including many single parent families.[34] The absence of multiple adult earners in such families and the lower educational attainment of many of these family heads reduces their annual earnings potential and their annual money incomes, thereby contributing to rising income inequality.

Marriage behavior in Massachusetts and the

Table 7-14:

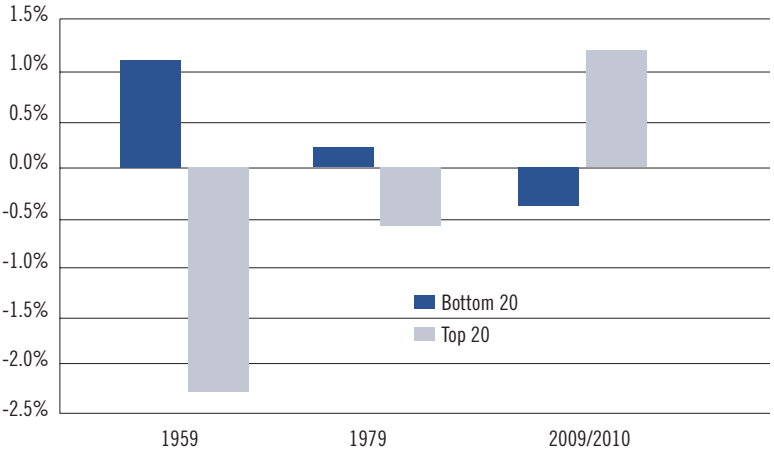
Comparisons of the Shares of Money Income Received by Massachusetts Households with Those of Their US Counterparts for Selected Quintiles of the Distribution, 1959-2009/2010

INCOME QUINTILE / GEOGRAPHIC AREA	1959	1979	1989	2009/2010
Bottom Quintile				
Massachusetts	5.1%	4.1%	3.7%	2.9%
US	4.0%	3.9%	3.6%	3.3%
Massachusetts – US	1.1%	.2%	.1%	-.4%
Middle Quintile				
Massachusetts	17.7%	17.3%	16.7%	14.2%
US	17.5%	17.0%	15.9%	14.6%
Massachusetts – US	.2%	.3%	.8%	-.2%
Top Quintile				
Massachusetts	40.9%	43.1%	45.0%	51.4%
US	43.2%	43.7%	46.9%	50.2%
Massachusetts – US	-2.3%	-.6%	-1.9%	1.2%

Sources: 1960, 1980, 1990, 2000 Decennial Census and CPS March Supplement, 2010-2011, public use files. Tabulations by authors

Chart 7-13:

Percentage Point Differences in the Shares of Household Income Received by Massachusetts and US Households in the Bottom and Top Quintiles of the Distribution, 1959-2009/2010



US is characterized by a high degree of assortative mating in which individuals tend to marry someone from a similar educational attainment or socioeconomic background. For example, the overwhelming majority of female college graduates tend to marry a male who is also a college graduate and vice versa. The substantial increase in female adults with a bachelor's degree or higher in recent decades has resulted in a growing number of families in which both spouses possess a college degree. Married couples in which both spouses are college educated tend to be dual earner couples and to have lower separation and divorce rates as well. Given the increase in annual earnings among college-educated workers over the past few decades, especially women with a bachelor's degree or higher, these families with two college-educated spouses will experience annual earnings gains well above the average, thereby raising the annual incomes of families in the upper quintile at above-average rates. In contrast, married couple families in which the male spouse lacks any post-secondary schooling have faced declining employment and annual earnings and higher risks of marital dissolution. The loss of many well-paid blue-collar jobs contributed to these declining earnings for males. Mother-only families increased considerably among women with no post-secondary schooling, reducing their potential annual earnings and income, especially when young children are present in the home.[35]

The sharp increase in household income inequality in our state in recent decades is also due in part to the "Winner-Take-All" economy, in which the pay of CEOs, other high level managers, higher level financial service workers, and professional athletes/entertainers have risen at rates overwhelmingly higher than those of other workers, including many of those in the upper quintile of the earnings distribution in the state.[37] In the next chapter, we will examine the influence of these changing family formation patterns, the decline in the share of married couple families among all families in the state, the high levels of assortative mating, the increase in family heads with college degrees, and the rising earnings of college-educated men and women that generate the rise of income inequality among families in the Commonwealth.[39]

Endnotes

1 See Amartya Sen, Joseph E. Stiglitz, and Jean-Paul Fitoussi, *Mismeasuring Our Lives: Why GDP Doesn't Add Up,* The New Press, New York, 2010.

2 A recent public opinion poll by the *New York Times* and CBS news suggests that in these difficult economic times a higher fraction of the public consider the American Dream to include more so-called "abstract values" such as freedom and civil liberties rather than material success. There appears to have been a downgrading of economic expectations by the public especially for the next generation, *See* Katherine Q. Seelye, "What Happens to the American Dream in a Recession?," *The New York Times on the Web*, May 11, 2009.

3 The 2010 national median household income is based on the American Community Survey for that year.

4 See US Census Bureau, *Income, Poverty, and Health Insurance Coverage in the United States: 2009,* Current Population Reports, Consumer Income, P60-238, Washington, D.C., 2010.

5 For the potential social consequences of these changes, *See*: Benjamin Friedman, "The No Growth Trap" *The National Interest*, November/December 2011, pp. 36-43.

6 For an overview of trends in household and family income inequality and changing class structure in the US for the 1970s, 1980s, and 1990s, see: Sheldon Danziger and Peter Gottschalk, America Unequal, Harvard University Press, Cambridge, 1995; Frank Levy, *Dollars and Dreams: The Changing American Income Distribution*, Russell Sage Foundation, New York, 1987; Paul Ryscavage, *Income Inequality in America: An Analysis of Trends*, M.E. Sharpe, Armonk, NY, 1999; Ray Marshall (Editor) *Back to Shared Prosperity: The Growing Inequality of Wealth and Income in America*, M.E. Sharpe, Armonk, NY, 2000.

7 For a review of the forces influencing the rise in income inequality and its economic and social consequences, see: Ray Marshall, *Ibid.*; Douglas S. Massey, *Categorically Unequal: The American Stratification System*, Russell Sage Foundation, New York, 2007.

8 Frederick R. Strobel and Wallace C. Peterson, *The Coming Class War and How to Avoid It: Rebuilding the American Middle Class,* M.E. Sharpe Inc., Armonk, NY, 1999.

9 Strobel and Peterson (1999).

10 See Pew Research Center for the People and the Press, *Economic Inequality Seen as Rising*, Boom Bypasses Poor, June 2001.

11 High income respondents are those with family incomes in the upper one-fourth of the income distribution, see Benjamin I. Page and Lawrence R. Jacobs, *Class War? What Americans Really Think About Economic Inequality*, University of Chicago Press, Chicago, 2009.

12 Page and Jacobs (2009).

13 Page and Jacobs (2009).

14 *See*: The Boston Foundation, *A Great Reckoning: Healing a Growing Divide*, The Boston Indicators Report: 2009; Greg Torres and Andrew Sum, "The Middle Class and Middle Ground is Disappearing," *The Boston Globe*, October 6, 2010.

15 See George W. Bush, "State of the Economy," a speech delivered at Federal Hall on January 31, 2007.

16 Greenspan's remarks can be found in: Sam Pizzigati, "Alan Greenspan, Egalitarian?", *Tom Paine Common Sense*, November 7, 2005.

17 See Ben Bernanke's remarks are taken from a February 2007 speech in Omaha, Nebraska.

18 In doing the national and state comparisons, we used the national CPI-UX1 index to convert nominal household incomes into their constant equivalent in 2010 dollars.

19 The US Census Bureau has recently released the public use files from the 2010 American Community Survey.

20 From 1947 to 1973, the median real income of US families doubled in size, and poverty rates declined considerably.

21 See Andrew Sum, Ishwar Khatiwada, *Trends in the Real Incomes of Young Families in the US: Declining Average Incomes Amidst Widening Inequality*, CDF Policy Research Brief 3, Children's Defense Fund, Washington, D.C., 2011.

22 A fifth category (American Indian, mixed race, other) was excluded from the analysis due to small sample sizes, especially in 2000.

23 See Andrew Sum, and others, *The Road Ahead* (Boston, MA: MassINC, 1998).

24 Data from the 2009 ACS survey for the two smaller island counties were not available due to small sample sizes.

25 The steep decline in median household income in Berkshire County (-18 percent) was substantially influenced by an apparent shift in the composition of households toward non-family households with their sharply lower annual incomes. The median real income of family households in Berkshire County fell by only 4 percent over the decade.

26 See Andrew Sum and others, *The State of the American Dream in Massachusetts, 2002* (Boston, MA: MassINC, 2002); Andrew Sum, Mykhaylo Trubskyy, and Ishwar Khatiwada, *Family Income Developments in Massachusetts During the 1990s: Mediocre Growth for the Average Family Amidst Sharply Rising Income Inequality*, Prepared for The Boston Foundation, Workforce Development Initiative, 2004.

27 There are several exceptions to this general pattern. Each of the northern New England states (Maine, New Hampshire, and Vermont) continues to rank in the bottom third of the household income inequality measures.

28 For a review of the economic impacts of the Massachusetts Miracle decade on job creation, annual earnings, and household/family income growth in the 1980s, see Andrew Sumand others, (2002).

29 Between 1959 and 2009/2010, the share of the second lowest quintile fell from 11.1 percent to 8.0 percent while the share of the fourth quintile declined from 24.3 percent to 23.5 percent.

30 The Federal Reserve Board uses IRS tax records to identify wealthy households and oversample them in its wealth survey.

31 For an earlier analysis of such issues, see Andrew Sum and others (2002).

32 For a recent review of changing family formation developments in the state, *see* Andrew Sum and Neeta Fogg, "The Family Values State? An Assessment of the Evidence," Center for Labor Market Studies, Northeastern University, 2009.

33 For a review of evidence on the increasing links between marriage and educational attainment of adults in the US, see Kay Hymowitz, *Caste and Marriage in America*, New York, 2007.

34 See Robert H. Frank and Philip J. Cook, *The Winner-Take-All Society*, The Free Press, New York, 1995; Robert H. Frank, *Luxury Fever: Money and Happiness in an Era of Excess,* Princeton University Press, Princeton, 1999.

35 For a recent review of high executive pay including bonuses in firms reporting losses in our state during the recent recession, see Todd Wallack, "Many of the State's Top Business Leaders Reaped Big Rewards Despite the Recession," *The Boston Globe*, October 3, 2010.

Chapter Eight

Family Income and Family Income Inequality

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Introduction

The preceding chapter has provided an analysis of changing levels of household incomes and their distribution over the past 30 to 50 years. Many discussions of the American Dream focus on the economic and social well-being of families rather than households. A growing fraction of households in the state in recent decades are non-family households, comprised of either single individuals or two or more persons who are unrelated to one another.[1] This chapter will primarily focus on changes in the median real incomes of Massachusetts families over the 1979-2009 period with separate analyses for key subgroups of families classified by age, race/ethnic group, educational attainment, and family type.[2] We will also compare the growth/decline in state real incomes with those for the US over the last three decades.

The second half of the chapter will focus on changes in the distribution of family incomes over time, analyzing changes in real incomes at key points along the distribution and estimating changes in the share of incomes obtained by families at different points along the distribution. This income inequality analysis will also be conducted for an array of family subgroups. In order to place the findings for Massachusetts in context, we will compare income inequality in the state with that of the US and the other 49 states.

Family Income Concepts, Measures, and Data Sources

This chapter is devoted to an analysis of trends in the average levels and distribution of family incomes in Massachusetts and US over the past few decades. The US Census Bureau definition of a family household is a household occupying separate living quarters containing two or more persons that are related to one another by blood, marriage, or adoption. Cohabitating couples without children are not considered to be families under this definition. We analyze family income by age, race/ethnic group, and the educational attainment of the householder. The family householder or head is the person in whose name the housing unit is owned or rented. In a married couple family, the householder can be either the husband or wife, but in 80 percent of the cases the family householder in recent years is the husband.

THE MEAN INCOME IN MASSACHUSETTS HAD BEEN RISING AT A CONSIDERABLY HIGHER RATE THAN THE MEDIAN.

Family income is the combined annual money income of all family members 16 and older, measured before taxes and any other payroll deductions. Money incomes include all wages and salaries, self employment income, interest, rental income, and dividends as well as cash income transfers from government (unemployment insurance, public assistance income, Social Security retirement, Social Security disability payments, Supplemental Security Income) as well as private pensions, alimony and child support payments. In-kind transfers, such as food stamps, rental subsidies, and Medicaid health insurance, are excluded, as are capital gains.

Trends in the Nominal and Real Family Incomes of Massachusetts from 1979 to 2009

Findings from the decennial censuses of 1970 to 2000 and the 2009 American Community Survey for Massachusetts and the US were used to track changes in the nominal annual incomes (not inflation adjusted) of families from 1969 to 2009. The median family income is used to represent the income of the average or typical family in the state or nation. The median income represents the value of income right in the middle of the distribution. One half of the families make less than the median, and one half make more. Unlike the mean annual income, the value of the median is not influenced by extreme values at either end of the distribution. As will be revealed below, the mean income in Massachusetts had been rising at a considerably higher rate than the median through 2000, indicating rising inequality in the income distribution.

During the 1970s, largely as a result of the state's economic troubles in the first half of the decade, the state's nominal median family income did not keep pace with that of the nation. The median family income of the state in 1979 was estimated to be $21,166, which was only 8 percent higher than that of the nation. During the strong growth period of the 1980s, however, nominal incomes in Massachusetts rapidly outgrew those of the nation, increasing our lead over the national average to 29 percent by 1989. This increase primarily reflected faster real income growth in our state during the Miracle Decade.

Deep job losses in the early years of the 1990s pushed down real incomes of the state and reduced our comparative advantage relative to the nation, falling to 22 percent by the late 1990s. In the past decade, our nominal income position improved to 33 percent by 2009. This improvement, however, will be shown not to be attributable to any significant improvement in the median real incomes of Massachusetts families over the 1999-2009 decade but to a combination of a higher rate of inflation in the state and declining median real incomes of US families.

To identify changes in the true economic well-being of Massachusetts and US families over time, we must adjust the nominal incomes of families into their real or constant dollar equivalents. Much of the gain in the estimated nominal incomes over the past three decades may have been due to rising prices for consumer goods and services rather than to any major

Table 8-1:

Trends in the Median Money Annual Incomes of Families in the US and Massachusetts, 1969-2009 (current dollars)

YEAR	US	MASSACHUSETTS	MASSACHUSETTS / US
1969	$9,596	$10,981	114.4
1979	$19,587	$21,166	108.1
1989	$34,213	$44,239	129.3
1999	$49,909	$61,065	122.3
2009	$60,968	$81,258	133.3

Sources: 1970, 1980, 1990, and 2000 Censuses of Population and Housing; 2009 American Community Survey, public use files

Table 8-2:

Time Trends in the Consumer Price Index for All Urban Consumers (CPI-UX1) in the US and the Greater Boston Area from 1979-2009 (1982-84 = 100)

YEAR	US	GREATER BOSTON
1979	74.0	75.6
1989	124.0	131.3
1999	166.6	176.0
2009	214.5	233.8
% CHANGE		
1979-89	67.6%	76.0%
1989-99	34.3%	34.0%
1999-09	28.7%	32.8%
1979-09	189.9%	213.4%

Source: US Bureau of Labor Statistics; Center for Labor Market Studies' estimates of CPI-UX1 value for Boston for years 1979-1989

improvement in the real income of families.

To convert the nominal annual incomes of Massachusetts and US families into their real dollar equivalents in 2009 prices, we used the Consumer Price Index for All Urban Consumers (CPI-UX1).[3] The US price index was used to make these inflation adjustments for national incomes while the Boston CPI-UX1 price index was used to make these adjustments for state family incomes from 1979 onward.[4] Estimates of time trends in these two price indices over the 1979-2009 time period are displayed in Table 8-2. The base years for both price indices are 1982-1984.

Consumer prices in both the Greater Boston area and the US grew very strongly over the 1979-2009 period, more than tripling in value in the Greater Boston area and coming close to tripling in the US (Table 8-2). Prices rose most rapidly in the 1980s decade, especially in the first half of that decade. The Consumer Price Index in the Greater Boston area jumped by 76 percent while in the US it increased by a slightly lower 68 percent. Both areas faced very similar rates of consumer price inflation in the 1990s (34 percent), and in the past decade, prices rose somewhat faster in the Boston area than in the nation as a whole (33 percent vs. 29 percent).

Trends in the median real incomes of Massachusetts and US families over the 1979-2009 era are displayed in Charts 8-1 and 8-2, and the growth rates in those family incomes by decade over this same time period are presented in Table 8-3 and Chart 8-3. During the Miracle Decade of the 1980s, the median real income of Massachusetts families increased from $65,800 to just under $78,800, a gain of $13,000 or nearly 20 percent. In comparison, the median real incomes of US families increased by only $1,400 or 2.7 percent over the same time period. By 1989, the median real income of all Massachusetts families was 33 percent higher than the US median, its post-World War II high.

Chart 8-1:

Trends in the Median Real Incomes of Massachusetts Families, 1979-2009 (constant 2009 Boston CPI dollars)

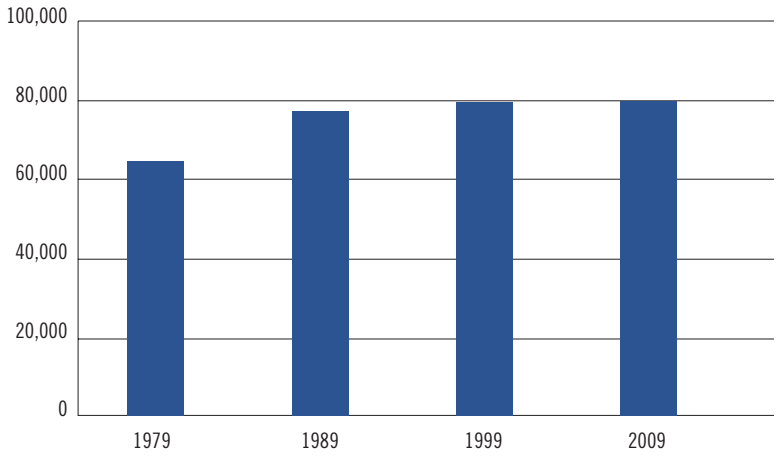


Chart 8-2:

Trends in the Median Real Incomes of US Families,1979-2009 (constant 2009 US CPI dollars)

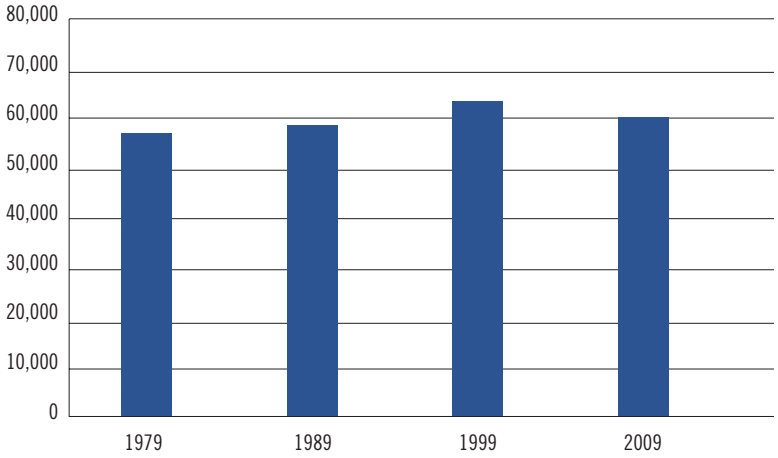


Table 8-3:

Growth Rates of Median Real Family Incomes in Massachusetts and the US, 1979-2009

DECADE	MA	US	MA – US
1979-1989	19.6%	2.7%	16.9%
1989-1999	3.0%	8.6%	-5.6%
1999-2009	.2%	-5.1%	5.3%

Chart 8-3:

Comparisons of the Growth Rates of Median Real Family Incomes in Massachusetts and the US, 1979-2009

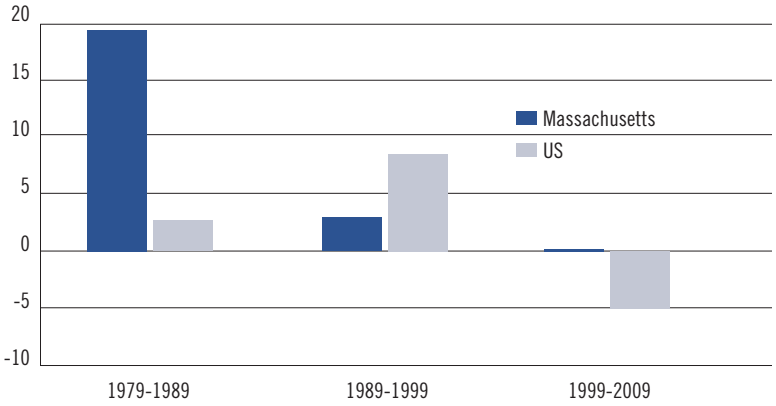
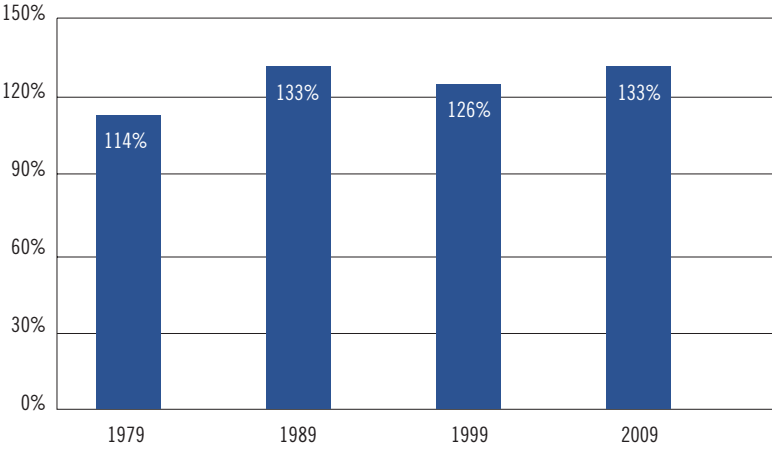


Chart 8-4:

Trends in the Ratios of the Median Real Incomes of Massachusetts Families to Those of US Families, Selected Years, 1979-2009



In the 1990s, Massachusetts families' incomes were subject to severe swings. During the first half of the decade, 1989-1994, the median real incomes of the state's families declined by close to 5 percent.[5] Strong job growth combined with increased annual hours of work and rising real weekly earnings helped boost median real incomes over the remainder of the decade. For the decade as a whole, the median real income of Massachusetts families rose by only $2,350 or 3 percent versus a more substantive gain of nearly 9 percent for US families. Families at the upper end of the income distribution fared far better than Massachusetts families in the middle of the income distribution. By 1999, the median real income advantage of the state's families had declined to 26 percent above the US average (Chart 8-4).

During the 1999-2009 decade, the median real income of the state's families was basically flat, rising by only $139 or less than .2 percentage points (Chart 8-4). Very few families along the entire distribution or in most demographic subgroups appeared to experience any substantive gain in their real incomes, and some families (those headed by high school dropouts, Hispanics, those in the western areas of the state) actually lost ground. Across the entire US, median real incomes actually declined over the decade, falling by $3,300 or close to 5 percent.[6] By 2009, the median real income of Massachusetts families was close to 33 percent above the US average, tied with its performance in 1989.

Given the relatively high median income position of Massachusetts families in 2009, one might wonder why the state has been unable to attract many new domestic migrants to live in our state and why we lost so many of our residents to other states, especially during the 2000-2006 period.[7] Several factors appear to be at work here. First, the heads of Massachusetts families tend to be among the best educated in the nation, and an above-average fraction of Massachusetts families are married-couple families. When we control for the higher educational attainment of the state's families and the greater presence of married-couple families, we find that the median incomes of married-couple Massachusetts families with a head who held a bachelor's or higher degree was only 15 percent above the US average in 2009. Second, the cost of living in many Massachusetts cities and towns, especially in the Boston Metropolitan area, is above that of the nation.[8] The Bureau of Economic Analysis has recently estimated that average state prices

in Massachusetts are 9 percent above the US average. The middle-income standard of living budget of the Economic Policy Institute of Washington, DC, reveals that the cost of achieving this middle-class budget was 20 percent higher in the Boston Metro area than in the entire US. High housing costs are a key factor.

The Changing Demographic and Human Capital Traits of Massachusetts Families and Their Real Income Experiences, 1979-2009

Over the past three decades, the demographic traits (age, gender, marital status, race/ethnic group) and educational attainment of Massachusetts family heads have changed in a number of important respects. Many of these changing traits have had an influence on the changing average incomes of Massachusetts families and on the distribution of those incomes. The aging of the ost-World War II Baby Boom generation pushed more of the state's family heads into the their mid-40s through late-50s by 2009.[9] Many families with heads in this age group, especially those led by college graduates, are in their peak income years. This age twist by itself should have helped raise median family incomes in the state. Family heads also became better educated over time. By 2009, slightly over 40 percent of the heads of families in Massachusetts held a bachelor's or higher academic degree. Given the greater annual earnings of better educated adults, this higher educational attainment of family heads should also have helped boost family incomes across the state.

In contrast to these two favorable demographic and educational developments, the state experienced a decline in the share of its families who were married couples, especially among its younger families headed by individuals under the age of 40. The married couple share of these younger families fell from 80 percent in 1980 to 67 percent in 2009, with an even larger decline taking place among families headed by persons under 30. Educational attainment of family heads in the state and the nation has become more strongly associated with particular types of family formation. College-educated individuals are more likely to marry and stay married, pushing up the incomes of married-couple families, while single-parent families and other unmarried family heads tend to be less educated. The latter development combined with the rising share of unmarried family heads placed downward pressure on average family income and widened income disparities across families. Finally, as is true for the population in general, family heads in Massachusetts are more racially and ethnically diverse today than in earlier decades with 22 percent of family heads being members of either non-white or Hispanic groups in recent years. The state's changing racial and ethnic composition has had mixed impacts on the median level of family income while tending to exacerbate income inequality across families.[10]

Knowledge of the changing economic well-being of these different groups of families is critical to gauging the extent to which the American Dream is being achieved by different demographic and socioeconomic groups of families in recent years. We will start by examining changes in the real median incomes of families classified by the age of the family head, then cover the growth/decline in the incomes of families by educational attainment of the head, family type, and race/ethnic group, as well as combinations of these characteristics.

The age composition of family heads in Massachusetts has gradually shifted to the middle to older age group of families (head 40-64 years old) over the past few decades largely due to the aging of the Baby Boom generation. In calendar year 2009, the Baby Boomers would have been 45 to 63 years old. In 1980, 46 percent of all family heads in the state were in the 40 to 64 age

Table 8-5:

Trends in the Age Composition of Massachusetts Family Heads, 1980-2009

AGE OF FAMILY HEAD	1980	2000	2009	PERCENTAGE POINT CHANGE
Under 40	38%	31%	25%	-13%
40-64	46%	51%	58%	12%
65 and Older	16%	18%	17%	1%

group. By 2009, the share had risen to 58 percent. Families with a head under 40 accounted for a shrinking share of families, declining from 38 percent in 1980 to only 25 percent in 2009. Older families with a head 65 and older experienced a modest rise in their share to 17 percent by 2009, but their share will be rising steadily over the next decade as the large Baby Boom cohort enters this age group and life expectancy of the elderly population rises.

Over the entire 1979-2009 time period, the economic fate of the state's families varied quite considerably across age groups. The state's youngest families (those headed by a person under age 30) fared the worst, with their median real income falling by 8 percent, while each of the other three age groups experienced gains ranging from 18 percent for those 40 to 64 years old to a high of 37 percent for the state's families 65 and over (Table 8-6 and Chart 8-5). Each age group of families fared quite well during the Miracle Decade of the 1980s, with income gains in the 16 to 20 percent range. In the 1990s, young families lost ground (-11 percent) while those ages 40 to 64 experienced only a slight gain (2 percent) and older families improved their median real income by close to 10 percent.

In the most recent decade, young families saw their median real income fall by 12 percent. Similar developments took place nationally as most young adults saw their real annual earnings decline, and a rising fraction of young families became composed of unmarried families.[11] Fewer than half of all young families in Massachusetts in 2009 were married-couple families, and a substantial majority of the single-parent young families had limited education, which held down their annual earnings. Most older families simply treaded water over the past decade. Those families headed by a person 40 to 64 years old experienced a modest decline (-3 percent) in their median real income, those headed by a 30-39-year-old faced

Table 8-6:

Trends in the Median Real Incomes of Massachusetts Families by Age of Family Head, 1979-2009 (2009 dollars)

AGE GROUP	1979	1989	1999	2009	PERCENT CHANGE, 1979-99	PERCENT CHANGE, 1999-09	PERCENT CHANGE, 1979-09
Under 30	$50,532	$58,757	$52,441	$46,376	4%	-12%	-8%
30-39	$66,640	$78,342	$84,081	$84,556	26%	1%	27%
40-64	$79,786	$95,079	$96,916	$93,951	22%	-3%	18%
65+	$42,040	$51,193	$56,054	$57,570	33%	3%	37%

a basically flat real income, and older families obtained a 3 percent gain. The 1999-2009 decade was pretty much a Lost Decade for all major age subgroups of families across the state.

The Real Incomes of Massachusetts Families by Educational Attainment, 1979-2009

Over the past few decades, the educational attainment of Massachusetts family heads has improved steadily and strongly. Among non-elderly families (those with a head under 65), the share of family heads lacking a high school diploma (or GED) declined considerably over the 1980-2009 time period while the share of family heads with some post-secondary schooling and with bachelor's or higher degrees grew strongly (see Table 8-7 and Chart 8-6). The share of family heads lacking a high school diploma fell by two-thirds from 23.4 percent in 1980 to only 7.8 percent in 2009. The percent of these family heads who completed at least one year of post-secondary schooling rose from 42.5 percent in 1980 to 71.2 percent in 2000, and the bachelor's degree (or higher degree) attainment rate increased by a full 20 percentage points to 43 percent by 2009. This ratio was the highest among the 50 states during that year. As will be shown below, however, there are very wide disparities in bachelor's degree attainment rates of family heads across race/ethnic groups and family types. Married couple family heads are far more likely to possess a bachelor's or higher degree.

The median real incomes of Massachusetts families by educational attainment have diverged considerably over the past three decades, especially after the end of the Massachusetts Miracle. Between 1979 and 2009, the median real income of families headed by a high school dropout fell by an astonishingly high 24 percent, and even families headed by a high school graduate saw their median real incomes fall by 7 percent

Chart 8-5:

Percent Growth in the Median Real Incomes of Massachusetts Families by Age of Family Head, 1979-1999 and 1999-2009

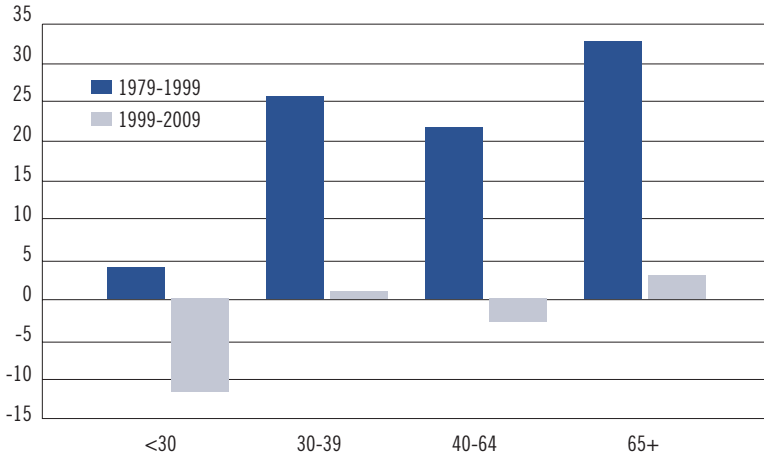


Table 8-7:

Trends in the Educational Attainment of Massachusetts Family Heads Under Age 65, Selected years, 1980-2009

EDUCATIONAL ATTAINMENT	1980	2000	2009	PERCENTAGE POINT CHANGE, 1980 - 2009
1 – 12 years, no diploma	23.4%	11.9%	7.8%	- 15.6%
High school degree/GED	34.1%	24.8%	21.1%	- 13.0%
13 – 15 years	19.0%	26.4%	27.8%	8.8%
Bachelor's or higher degree	23.5%	36.9%	43.4%	19.9%

Chart 8-6:

Comparisons of the Educational Attainment Composition of Massachusetts Family Heads Under 65 in 1980 and 2009

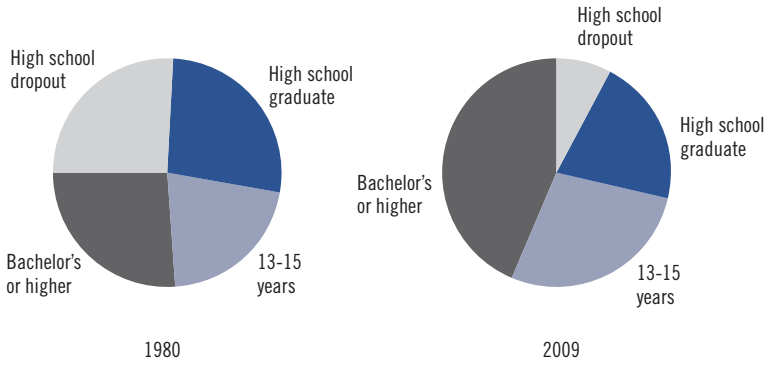


Table 8-8:

Trends in the Median Real Incomes of Families in Massachusetts by the Educational Attainment of the Family Head, 1979-2009 (constant 2009 dollars)

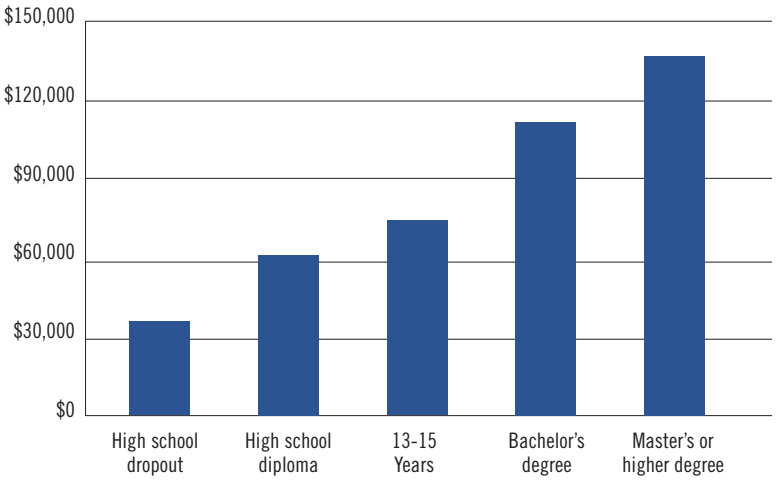
EDUCATIONAL ATTAINMENT	1979	1999	2009	% CHANGE, 1979 - 1999	% CHANGE, 1999 - 2009	% CHANGE, 1979 - 2009
1-12, no diploma	$54,564	$47,660	$36,081	- 13%	- 29%	- 34%
High school degree/GED	$65,862	$68,843	$61,568	5%	- 11%	- 7%
1- 3 years of college including associate's degree	$69,654	$82,082	$74,905	18%	- 9%	8%
Bachelor's degree	$89,046	$114,120	$112,941	28%	- 1%	27%
Master's degree or higher	$103,596	$138,916	$138,428	54%	~ 0%	33%
Master's or higher / 1-12, no diploma	1.9	2.91	3.84			
Bachelor's degree / High school degree/GED	1.35	1.66	2.25			

over the same time period. Families with a head with one to three years of post-secondary schooling experienced a modest 8 percent rise in their median real income over this 30-year period, while families headed by an individual with a bachelor's or higher degree enjoyed considerably larger gains of 27 percent and 33 percent, respectively, in their median real incomes.

All of the gains in the real income of these families in the last three educational groups came before 2000. Not one educational group of families obtained any gain in their median real income over the past decade. Families whose head lacked a bachelor's degree saw their median real incomes decline considerably over the past decade from -9 percent among those with some college to -29 percent among those lacking a high school diploma or a GED certificate. Those families headed by persons holding a bachelor's or higher academic degree saw their median incomes stagnate over the decade. Again, the past decade was a lost decade for all educational groups of families in the Commonwealth with many families facing an actual decline in their economic well-being.

Chart 8-7:

The Median Annual Incomes of Massachusetts Families by the Educational Attainment of Family Head in 2009 (in $1,000s)



The highly divergent trends in the growth/decline of the real incomes of Massachusetts families by educational attainment group has led to very wide gaps in their median real annual incomes (see Chart 8-7). In 2009, the values of these median real annual incomes ranged from a low of $36,100 for families headed by high school dropouts to $61,600 for high school graduates and to highs of nearly $113,000 for families with a head holding a bachelor's degree and $138,400

for those headed by an individual with a master's or higher degree.

Relative income gaps by educational attainment have widened considerably over the past three decades in our state. In 1979, families with heads holding a bachelor's degree had median incomes that were only 35 percent above those of families with a high school diploma. By 2009, this relative income gap had widened to 125 percent. Similarly in 1980, those families headed by a person with a master's or higher degree had a median income that was 1.9 times as high as that of a high school dropout. By 2009, this relative income ratio had doubled in size to 3.8 times. These two groups of families occupy substantially different social universes in our state. A variety of factors underlie these growing chasms in family incomes, including the breakdown in marriage among the state's less educated adults, the widening gap in annual earnings by educational attainment, the high degree of assortative mating especially among the best educated, and the increase in two earner families among high-income married couples.[12] Given recent marriage trends by educational group, the deterioration in the middle-income blue-collar labor market, and the changing occupational distribution of employment in the state, it is difficult to see any near-term improvement in these enormous income disparities across educational groups.

The Changing Structure of Massachusetts Families and the Growing Racial and Ethnic Diversity

The changing marital behavior of Massachusetts adults over the past few decades, especially among the young, has had a substantive impact on the structural composition of families. The share of state families that are married-couple families has been declining for the past three decades especially among the youngest families (i.e. those headed by an individual under the age of 30). In 1980 just under 81 percent of all families in Massachusetts were married-couple families. By 2009, the married couple share had fallen slightly below 75 percent (see Table 8-9). The greatest declines in the shares of married-couple families occurred among the state's youngest families (head under 30). By 2009, under one-half of all young families in the state were married-couple families, down from 77 percent in 1980. For those families with a head between 30 and 39 years of age, the married couple share fell by nearly 9 percentage points from 82 percent to 73 percent. Among the state's youngest families, the declines in married-couple families took place in each race/ethnic group. However, there are extraordinarily large gaps in married couple formation across race/ethnic groups, ranging from lows of 18 and 25 percent among blacks and Hispanics to highs of 61 to 65 percent among white non-Hispanics and Asians.

The breakdown in marriage among families in both Massachusetts and the US is not uniform across educational and income groups.[13] As Kay Hymowitz has argued, marriage in the US

Table 8-9:

Trends in the Share of Massachusetts Families that are Married-Couple Families by Age and Race/Ethnicity, 1980-2009

AGE GROUP	1980	2009	PERCENTAGE POINT CHANGE
All Ages	80.8%	74.9%	- 5.9%
Under 30	76.8%	49.8%	- 27.0%
Asians	74.7%	65.5%	- 9.2%
Blacks	37.4%	18.4%	- 19.0%
Hispanics	49.7%	24.5%	- 24.8%
White, non-Hispanic	81.2%	61.3%	- 19.9%
30 – 39	81.6%	73.1%	- 8.5%
Asians	90.8%	84.2%	- 6.6%
Blacks	52.4%	40.1%	- 11.3%
Hispanics	57.3%	42.6%	- 14.7%
White, non-Hispanic	83.1%	79.6%	- 3.5%

Chart 8-8:

Percent of Families in Massachusetts That Were Married Couple Families by Educational Attainment of Family Head, 2009

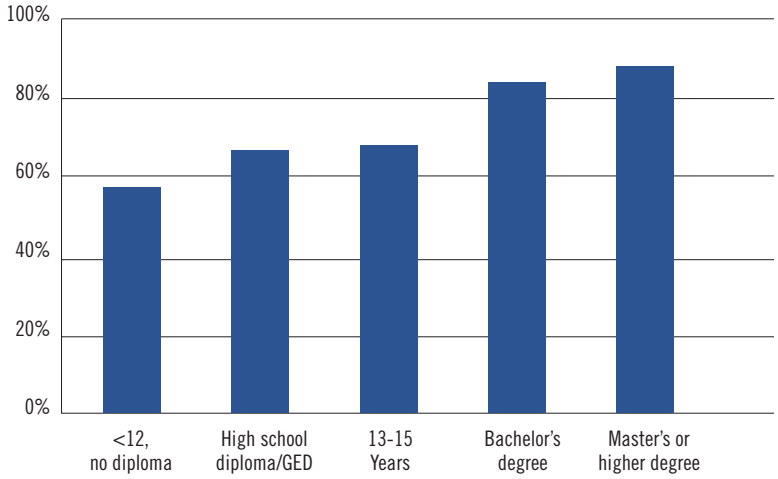
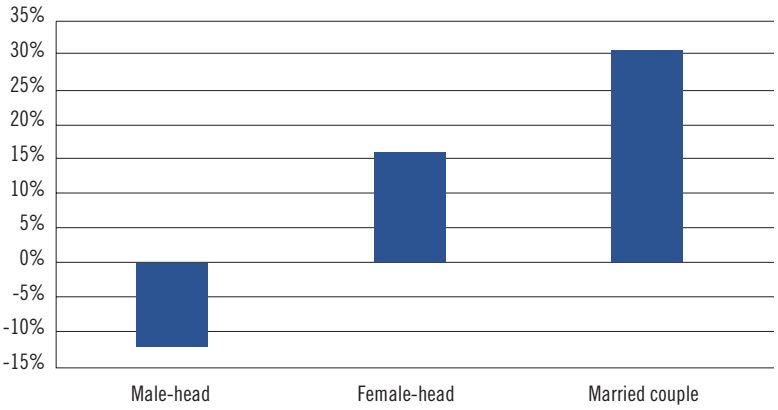


Chart 8-9:

Percent Change in the Median Real Incomes of Massachusetts Families by Type, 1979-2009



is becoming increasingly divided by social class between the educational haves and have nots. Similar trends have taken place in our own state. In 2009, the share of Massachusetts families that were married-couple families varied from a low of 58 percent among high school dropouts, to 67 percent for high school graduates, to highs of 85 percent for bachelor's degree holders and 89 percent for those with a master's or higher degree (Chart 8-8). Most of the non-married families are headed by women, many of whom have limited schooling. The presence of only one potential adult earner in these families and their frequently limited earnings potential place many of them at severe risk of income inadequacy problems and increase the degree of family income inequality within the Commonwealth.

Family income growth in Massachusetts over the past few decades has varied quite considerably by type of family (Table 8-10). Over the 1979-2009 time period, median real incomes of married-couple families grew the fastest by far (34 percent), followed by female-headed families with no male spouse present (18 percent) and then unmarried male-headed families whose median real income fell by nearly 14 percent over this time period (Chart 8-9). Practically all the gains in the real incomes of the first two groups took place prior to 2000. During the most recent decade, median real incomes of unmarried male-headed families declined by 10 percent, and they dropped by nearly 2 percent for unmarried female-headed families. Married-couple families in the state experienced a modest 2.4 percent increase in their median real income, improving their median income to just under $96,000 in 2009, or about 2.5 times as high as the median income of female headed families.

The joint influence of family type and the educational attainment of the householder on the median incomes of Massachusetts families in 2009 is displayed in Table 8-11. Families throughout the state were classified into 15 different subgroups based on the type of family (3 groups) and educational attainment of the family head (5 groups). The median incomes of these families ranged from a low of $19,790 for female-headed families with a householder who lacked a high school diploma/GED to nearly $50,000 for a male-headed family with a high school diploma to highs of nearly $118,000 for married-couple families headed by a bachelor's degree holder and $140,000 for married-couple families with

Table 8-10:

Trends in the Median Real Incomes of Massachusetts Families by Type, 1979-2009 (constant 2009 dollars)

TYPE OF FAMILY	1979	1999	2009	PERCENT CHANGE, 1979-1999	PERCENT CHANGE, 1999-2009	PERCENT CHANGE, 1979-2009
Married couple	$71,536	$93,658	$95,950	30.9%	2.4%	34.1%
Male head, no female spouse present	$60,200	$58,047	$52,073	- 3.6%	-10.3%	-13.5%
Female head, no male spouse present	$33,908	$40,593	$39,879	- 1.8%	-1.8%	17.6%

a head possessing a master's or higher degree. The median income of the last group of families was seven times as high as that of the lowest income group (female-headed families with no male spouse present and a head lacking a high school diploma).

The estimated median family incomes for these subgroups of families were associated with radically different percentile rankings in the income distribution for all families in the state in 2009. The median income for our lowest income group would have ranked only at the 8th percentile of the distribution, which implies that more than half of these female-headed families would have had annual incomes in the lowest decile of the family income distribution. The median income of a married-couple family headed by a high school dropout would have ranked at the 23rd percentile. The median income of a married-couple family with a high school diploma would have ranked at the 42nd percentile, and a married-couple family headed by an individual with a master's or higher degree would have ranked at the 87th percentile. Nearly one half of these families made it to the top decile of the family income distribution. The high median incomes of this last group are strongly related to the existence of two-earner families with both spouses possessing a college degree, often working year-round, full-time, and achieving weekly earnings well above the average.

Over the past few decades, the combined

Table 8-11:

Median Family Incomes and Percentile Rankings of Massachusetts Families in Selected Family Types and Educational Attainment Categories, 2009

FAMILY GROUP	MEDIAN FAMILY INCOME	PERCENTILE RANKING
Female-headed family, no high school diploma	$19,790	8th
Female-headed family, high school diploma	$32,983	16th
Married couple family, high school diploma	$41,978	23rd
Male-headed family, high school graduate	$49,974	29th
Female-headed family, bachelor's degree	$62,667	39th
Married couple family, high school graduate	$70,004	42nd
Married couple family, bachelor's degree	$117,758	70th
Married couple family, master's or higher degree	$139,927	87th

Source: 2009 American Community Survey, public use files, tabulations by authors

Table 8-12:

Trends in the Racial and Ethnic Characteristics of Family Heads in Massachusetts, 1980-2009

RACE-ETHNIC GROUP	1980	2009	PERCENTAGE POINT CHANGE
Asian	0.7%	5.0%	4.3%
Black, not Hispanic	3.4%	5.0%	1.6%
Hispanic	2.2%	7.6%	5.4%
Other races	0.4%	1.5%	0.9%
White, non-Hispanic	93.9%	80.8%	- 12.5%

Table 8-13:

Trends in the Median Real Incomes of Massachusetts Families by the Race-Ethnicity of the Family Head, 1979-2009

RACE-ETHNIC GROUP	1979	1989	1999	2009	PERCENT CHANGE 1979-99	PERCENT CHANGE 1999-2009	PERCENT CHANGE 1979-2009
Asian	$60,576	$69,689	$77,466	$91,952	28%	19%	52%
Black, not Hispanic	$41,397	$51,625	$50,475	$51,973	22%	3%	26%
Hispanic	$33,774	$31,159	$37,192	$37,081	10%	0%	10%
White, not Hispanic	$67,392	$81,352	$87,136	$88,174	29%	1%	31%

Source: 1980, 1990, 2000 Censuses of Population and Housing; 2009 American Community Survey, public use files

Table 8-14:

Median Incomes of Massachusetts Families by Race/Ethnicity and Educational Attainment of Family Head, 2009

EDUCATIONAL ATTAINMENT	ASIAN	BLACK	HISPANIC	WHITE, NON-HISPANIC
1-12, no diploma or GED	$30,284	$26,166	$24,987	$39,979
High school degree/GED	$50,774	$39,979	$36,531	$65,967
1-3 years of college including associate's	$75,061	$50,374	$35,981	$77,760
Bachelor's degree	$106,445	$73,962	$68,964	$111,942
Master's degree or higher	$130,932	$103,946	$93,052	$135,430
Bachelor's degree / 1-12 years of schooling	3.5	2.8	2.8	2.8

impacts of foreign immigration, domestic out-migration of white, non-Hispanics, and higher birth rates among Hispanics and some black income groups have increased the racial and ethnic diversity of the state's population. Since 1980, the share of family heads in Massachusetts that were white, non-Hispanic has declined from 93 percent to slightly below 81 percent, a drop of more than 12 percentage points. The largest increases in the shares of non-white, non-Hispanic groups took place among Hispanics (5.4 percent) and Asians (4.3 percent) followed by blacks (1.6 percent) and other races (~1.0 percent).[14]

The economic well-being of Massachusetts families has varied quite considerably by race/ethnic group over the past three decades (see Table 8-13). Between 1980 and 2009, each group experienced some income growth; however, growth rates varied quite extensively from a low of 10 percent among Hispanic families to 26 to 31 percent among black and white, non-Hispanic families to a high of 52 percent among Asian families. In 1979, the highest median income was found among white, non-Hispanic families ($67,392) with Asians about $7,000 behind in second place. By 2009, the highest median family income was that of Asian families at just under $92,000, with the median income of white, non-Hispanic families trailing about $4,000 behind. The median incomes of the state's Asian families were 2.5 times as high as those of Hispanic families. With the exception of Asian families, whose median incomes rose by $14,500 or 19 percent

over the past decade, all other race/ethnic group of families faced fairly flat incomes with the Hispanic growth rate at zero and that of whites at only 1 percent. Again, the past decade was pretty much a lost decade for families in most of the state's major race/ethnic groups.

The annual incomes of families across major race/ethnic groups in Massachusetts are strongly linked to the educational attainment of the householder (Table 8-14). The higher the level of schooling completed by the householder, the higher the level of their median family income. In 2009, families with a head possessing a bachelor's degree had median incomes that were 2.8 to 3.5 times as high as those of families with a householder lacking a high school diploma/GED. In each of the five educational attainment groups, median family incomes were highest among white, non-Hispanic families often closely followed by Asians then blacks and Hispanics.

One might ask how Asian families in Massachusetts could have had the highest overall median family income in 2009 if they fell slightly behind the median incomes of white, non-Hispanic families in each educational attainment group. The answer reflects a combination of higher levels of formal schooling among Asian family heads and a slightly higher share of married-couple families with their higher income levels (Table 8-15). In 2009, 60 percent of Asian families in the Commonwealth were headed by an individual with a bachelor's or higher degree versus 44 percent of white, non-Hispanics and only 24 percent of black and 14 percent of Hispanic family heads. Asian family heads were four times as likely to hold a bachelor's or higher degree as their Hispanic counterparts, helping to explain why the median income of Asian families was 2.5 times as high as that of Hispanic families across the state.

The higher 2009 median income of Asians families also was partly attributable to the greater presence of married couples among such families (See Table 8-16). Approximately 82 percent of Asian families in the state in 2009 were married-couple families versus slightly under 80 percent of white, non-Hispanic families and only 44 percent of black and Hispanic Families. Very high fractions of black and Hispanic families were headed by unmarried women often with their own children present in the home. These families experience considerably lower median family incomes than their married counterparts. The low income and limited schooling of the head put their children at considerably greater risk of cognitive, educational, health, nutrition, and labor market deficiencies from their early childhood years through their late teens. These developments place the economic future of Massachusetts in jeopardy since a higher fraction of the state's children are being raised in such families.

Table 8-15:

Comparisons of the Educational Attainment Characteristics of Family Heads in Massachusetts by Race/Ethnicity, 2009

EDUCATIONAL GROUP	ASIAN	BLACK	HISPANIC	WHITE, NON-HISPANIC
No high school degree/GED	15.1%	14.8%	31.1%	6.3%
High school degree/GED	11.4%	24.8%	28.2%	22.7%
Bachelor's degree or higher	60.5%	24.0%	14.5%	44.1%

Source: 2009 American Community Survey, public use files, tabulations by author

Table 8-16:

The Family Composition of Family Households in Massachusetts by Race/Ethnicity, 2009

FAMILY TYPE	ASIAN	BLACK	HISPANIC	WHITE, NON-HISPANIC
Married couple	81.7%	44.2%	44.6%	79.6%
Male head, no female spouse present	6.6%	11.2%	11.4%	5.4%
Female head, no male spouse present	11.7%	44.6%	42.0%	15.0%

The Changing Distribution of Family Incomes in Massachusetts, 1979-2009

The above findings on trends in the median real annual incomes of Bay State families over the past few decades have shown a number of highly divergent results for key demographic and human capital subgroups. Older families, better educated families, Asians, and married couples often experienced above-average gains, while younger families (those with a head under 30) and those headed by adults with no post-secondary schooling lost ground in the past two decades. Hispanic families faced basically stagnant incomes. Combining several of these traits of families (age, educational attainment, and family type) yields even larger disparities in real income growth rates. One of the major consequences of these divergent growth rates in annual incomes is likely that of increasing the degree of inequality in the family income distribution across the state. To identify the extent and nature of this rise in family income inequality, we tracked changes in the levels of the real incomes of Massachusetts families at various percentiles along the income distribution in 1979, 1989, 1999, and 2009 (Table 8-17). These percentiles ranged from the 10th lowest to the 90th, 95th, and 99th percentiles at the upper end of the distribution.[15]

Over the entire 1979-2009 time period, there were very large variations in the growth of the real incomes of Massachusetts families along the distribution. Over the entire 30-year period, all families experienced some improvement in their real income; however, the relative size of these income gains differed considerably along the income distribution.[16] The higher the percentile ranking of the family, the greater was the percent growth in their real income between 1979 and 2009. The family at the 10th percentile obtained an income gain of only 6 percent, the 30th percentile obtained a near 13 percent gain, the 50th percentile gained just under 24 percent, the 80th percentile gained 38 percent, the 90th percentile improved by 47 percent, and a family at the 99th percentile obtained a 129 percent gain, more than

Table 8-17:

Trends in the Real Annual Incomes of Massachusetts Families at Selected Percentiles along the Family Income Distribution, 1979-2009 (constant 2009 Boston CPI dollars)

PERCENTILE	1979	1989	1999	2009	PERCENT CHANGE 1979-89	PERCENT CHANGE 1989-99	PERCENT CHANGE 1999-2009	PERCENT CHANGE 1979-2009
10	$21,409	$23,236	$23,788	$22,700	8.5%	2.4%	-4.6%	6.0%
20	$34,149	$39,124	$39,668	$37,800	14.6%	1.4%	-4.7%	10.7%
30	$45,417	$53,351	$53,068	$51,200	17.5%	-.5%	3.5%	12.7%
40	$56,356	$65,800	$66,999	$66,100	16.8%	1.8%	-1.3%	17.3%
50	$65,762	$78,168	$81,022	$81,300	18.9%	3.7%	.3%	23.6%
60	$76,154	$91,195	$96,849	$98,100	19.8%	6.2%	1.3%	28.8%
70	$88,329	$106,702	$115,423	$117,076	20.8%	8.1%	1.4%	32.5%
80	$104,574	$128,043	$140,166	$144,000	22.4%	9.5%	2.7%	37.7%
90	$133,089	$165,388	$191,576	$195,000	24.3%	15.8%	1.8%	46.5%
95	$165,594	$210,826	$265,341	$259,000	27.3%	25.9%	-2.4%	56.4%
99	$234,752	$366,540	$507,995	$537,100	56.1%	38.6%	5.7%	128.8%

Table 8-18:

Changes in Key Relative Family Income Ratios in Massachusetts, 1979-2009

RELATIVE INCOME MEASURE	1979	1989	1999	2009	CHANGE IN RATIO 1979-2009
Y99/Y10	10.9	15.8	21.3	23.7	12.8
Y90/Y10	6.2	7.1	8.0	8.6	2.4
Y90/Y20	3.9	4.2	4.8	5.2	1.
Y80/Y20	3.0	3.3	3.5	3.8	.8
Y90/Y50	2.0	2.1	2.4	2.4	.4
Y50/Y10	3.1	3.4	3.4	3.6	.5

20 times as high as the growth rate in the income of families at the 10th percentile.

The magnitude and pattern of these real income changes for families differed quite considerably over these three decades. During the economic Miracle Decade of the 1980s, families at each of these percentiles experienced a substantive gain in their real family income; however, families at the upper end of the distribution fared considerably better than those at the bottom or middle of the distribution. This was the last decade in which income gains would be shared by all families.

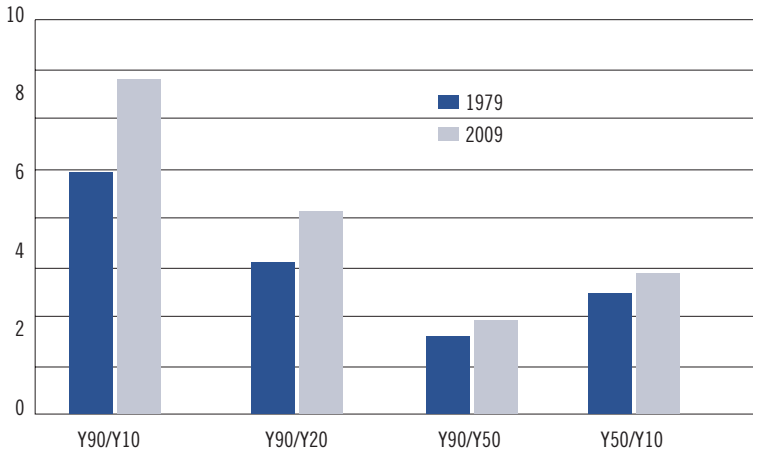
During the 1990s, real income growth slowed considerably due to the severe economic recession from 1989 to 1992 in our state, which reduced real incomes through mid-decade. The median real family income only rose by about 4 percent over the entire decade, however, the size of the income gains again rose steadily from the 40th percentile on up to the top. Families in the top decile received double-digit increases in their real incomes with those at the 99th percentile experiencing a near 40 percent gain. Again, income inequality widened considerably during the 1990s.

During the most recent decade, median real family incomes were basically flat in the state. Families in the bottom 40 percent of the distribution saw their real incomes decline by anywhere from 1 to 5 percent and those in the upper half of the distribution typically experienced modest gains in the 1 to 6 percentage point range. Income inequality rose modestly during the decade especially between the top to the bottom segments of the distribution.

The widening gaps in the growth rates of real family incomes in our state over the past three decades have increased the size of the relative annual income differences across the entire distribution, with very sizable increases in the ratios of the top to bottom incomes of families. In Table 8-18 and Chart 8-10, we present estimates of alternative relative income ratios from 1979 to 1999 for the top/bottom, top/middle, and middle/bottom segments of the distribution. In every case, the size of these relative family income differences widened over the past three decades. The Y99/Y10 ratio more than doubled in size from a value of nearly 11 in 1979 to 24 in 2009. A family at the 99th percentile obtained 24 times as much income as a family at the 10th percentile in 2009. Large increases also took place in the Y90/Y50 and the Y90/Y10 income ratios. The relative income gaps between the family in the middle (50th percentile) and bottom (10th percentile) also widened steadily over the past 30 years, increasing from 3.1 in 1979 to 3.6 in 2009. In the last year, the median income family had an annual income that was nearly four times as high

Chart 8-10:

Trends in Selected Relative Family Income Ratios in Massachusetts, 1979 and 2009



as that of a family at the 10th percentile. These steadily growing income differences have made us much less of an economic "Commonwealth" over the past 30 years.

The Rising Degree of Family Income Concentration from 1959-2009

To identify the changing degree of income concentration among families in Massachusetts over a longer period of time, we calculated the percentage shares of total family income going to each decile of the income distribution from 1959 to 2009 (Table 8-19). The income distribution was most equal at the beginning of this period in 1959 and became increasingly more unequal after this year, with particularly large increases in the top decile's share of income from 1979 through 1999. Over the entire 1959-2009 period, the shares of income captured by the bottom seven deciles of families declined while the share of income obtained by the top three deciles improved, with the top decile gaining the most by far, rising from 23.8 percent in 1959 to 31.1 percent in 2009, a gain of 7.3 percentage points. The ratio of the share of income obtained by the top decile to the share received by the bottom decile increased from slightly under 10 in 1959 to 26 times higher in 2009.

To illustrate the degree of concentration of family incomes in Massachusetts in recent years, we conducted the following exercise. How much money income in the aggregate did the families in the top 5 percent of income recipients receive in 2009 and what percent of the total income of all families in the state did this represent? Ranking families by their annual income in 2009 from lowest to highest how many families' incomes would we have to combine to match the money incomes of the top 5 percent?

The top 5 percent most affluent families in Massachusetts, representing just under 79,000 families, received a combined money income of $32.986 billion, which was equal to about 20.5 percent of total family income in the state in 2009 (Table 8-20).[17] To match this amount of income, we would have to add the annual money incomes of the bottom 763,300 families in the state. They represented 49 percent of all families in the state in 2009. Thus, the most affluent top 5 percent of families obtained as much income as the bottom half of all families in the state. The much higher mean annual incomes of the most affluent are due to a variety of factors: differences in family composition (the most affluent are nearly all married-couple families while the bottom half include many single-parent families and retired families), large differences in mean annual hours worked by all family members, large differences in mean hourly earnings, and considerably larger non-wage mean incomes from property received by the most affluent families. Reducing the high degree of family income inequality in the Commonwealth will require actions on many different fronts, including strengthening marriage among families, improving the employability and productivity of lower income workers, improving the link between productivity gains and real wages, and

Table 8-19:

Trends in the Shares of Total Family Income Obtained by Massachusetts Families in Each Decile of the Distribution, 1959-2009

DECILE	1959	1969	1979	1989	1999	2009	PERCENTAGE POINT CHANGE, 1959-2009
Lowest	2.4%	2.2%	1.8%	1.4%	1.2%	1.2%	-1.2%
Second	4.8%	4.4%	4.1%	3.5%	3.1%	2.9%	-1.9%
Third	6.3%	6.0%	5.7%	5.1%	4.5%	4.3%	-2.0%
Fourth	7.2%	7.2%	7.1%	6.5%	5.8%	5.7%	-1.5%
Fifth	8.2%	8.2%	8.3%	7.9%	7.1%	7.1%	-1.1%
Sixth	9.3%	9.3%	9.6%	9.3%	8.6%	8.7%	-.6%
Seventh	10.7%	10.7%	11.0%	10.9%	10.2%	10.4%	-.3%
Eighth	12.3%	12.3%	12.8%	12.8%	12.2%	12.6%	.3%
Ninth	15.0%	15.0%	15.7%	15.8%	15.6%	16.0%	1.0%
Top	23.8%	23.8%	24.0%	26.8%	31.6%	31.1%	7.3%
Top/Bottom ratio	9.9	11.0	13.3	19.1	26.3	26.0	

increasing asset ownership among low- to middle-income families.

Family income inequality also became more unequally distributed in the US over the past three decades; however, the state became more of a national leader in inequality over time. Over the 1959-1999 time period, the top decile of families in Massachusetts sharply increased their share of income from 23.8 percent to 31.6 percent then saw it fall slightly to 31.1 percent in 2009 (Table 8-21 and Chart 8-9). Substantial increases in the top decile's share also took place across the country, and Massachusetts remained slightly below the US average on this measure (Table 8-21). However, the state's ranking among the 50 states on this measure of income share went from only 34th highest in 1979 and 32nd highest in 1989 to 10th highest in 1999 and 12th highest in 2009.

The top quintile of families in the state also experienced a steep rise in their share of income over this 50-year period, especially from 1979 to 1999 when their share rose from 39.5 percent to 47.3 percent (Chart 8-10). At the lower end of the income distribution, the bottom decile saw their

Table 8-20:

Amount and Percent of Total Family Income Received by the Top Five Percent of Massachusetts Families in 2009 and the Number and Percent of Lower Income Families Needed to Match their Aggregate Income

FAMILY GROUP	NUMBER OF FAMILIES	TOTAL MONEY INCOME (BILLIONS)	PERCENT OF TOTAL FAMILY INCOME
Top 5 percent	78,888	$32.986	20.5%
All families from bottom of income distribution on up needed to match the income of top 5 percent	763,303	$33.081	20.5%

Table 8-21:

Comparisons of the Shares of Total Family Income Captured by Massachusetts and US Families in the Top Decile of the Distribution and the State's Ranking Among all 50 States, 1979-2009

GEOGRAPHIC AREA	1979	1989	1999	2009
Massachusetts	24.0%	26.8%	31.6%	31.1%
US	24.8%	28.5%	32.1%	31.8%
Massachusetts – US	-.8%	-1.7%	-.5%	-.7%
Massachusetts rank among all 50 states	34th	32nd tie	10th tie	12th tie

Chart 8-11:

Trends in the Share of Total Family Income Captured by the Top Decile of Families in Massachusetts, 1959-2009

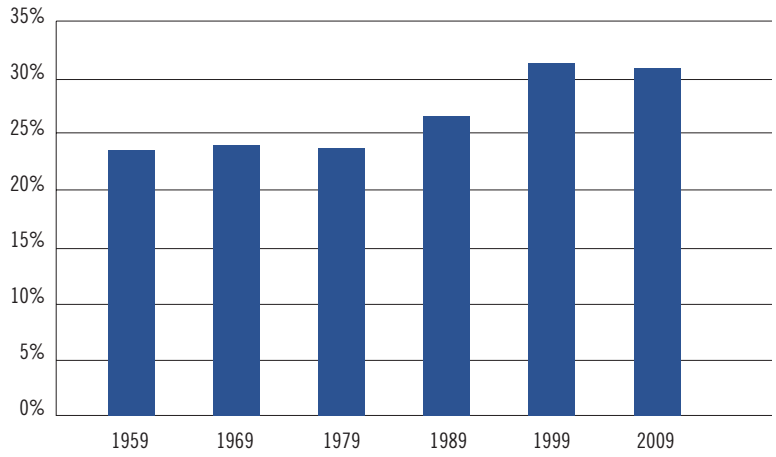
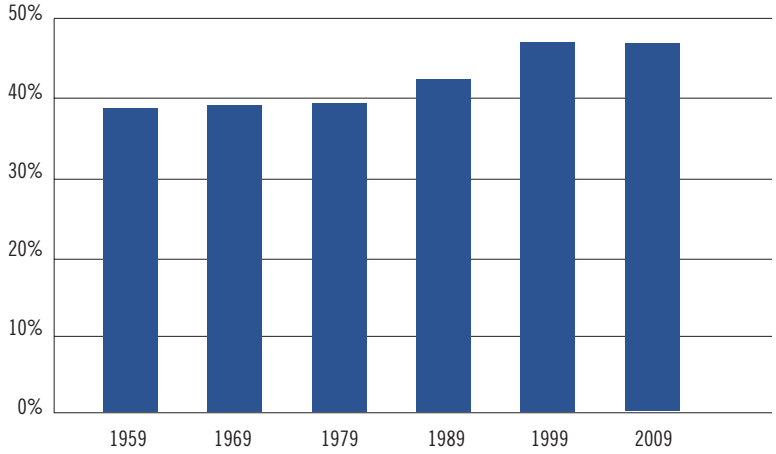


Chart 8-12:

Trends in the Share of Total Family Income Captured by the Top Quintile of Families in Massachusetts, 1959-2009



share drop by half, from 2.4 percent in 1959 to only 1.2 percent in both 1999 and 2009. In the years 1959 to 1989, the bottom decile's share was slightly above that of the US By 1999, however, the bottom decile's share had fallen to the same value as in the US (Table 8-22). In 1979, the state ranked 11th highest on this income measure. Its ranking dropped to 28th highest in 1989 and to only 35th highest in 1999 before improving slightly in 2009. In the last year, there was a very substantial bunching of states with a bottom decile of families having a 1.2 percentage point share of family income.

To place the comparative degree of family income inequality in Massachusetts in 2009 and 1979 into perspective, we compared the shares of income going to the top decile and top quintiles of families in each of the 50 states and the income shares of the bottom decile and bottom quintile of families. We then calculated the ratios of the income shares of the top decile to the bottom decile and the top quintile to the bottom quintile and estimated our state's ranking on both measures in 1979 and 2009.

In 2009, the 31.1 percent share of income received by Massachusetts families in the top decile ranked 10th highest in the nation while the 1.2 percent share of families in the bottom decile ranked 12th lowest (tied with several other states). The ratio of the share of the top decile to the bottom decile was 26.0, the 13th highest in the nation. In 1979, this income ratio in Massachusetts was only 13.3, well below the US average of 16.5 and we ranked 9th lowest in the nation (Table 8-24). The state fared slightly better on the ratio of the shares of income obtained by the top and bottom quintiles of the distribution. In 2009, this ratio stood at 11.3 in Massachusetts, ranking 18th highest. Yet, in 1979, this ratio was only 6.7 below the US average of 8.0 and the 5th lowest in the nation. Again, the state has moved from a national leader in equality in earlier decades to an above-average performer in family income inequality since the 1990s.

Increasing Family Income Inequality among Key Demographic Subgroups

The rising degree of family income inequality over the past few decades also has taken hold among families in most key demographic groups (age, race/ethnic) and in type of families (married-couple, single-parent families). The changing distribution of income among families in three

Table 8-22:

Comparing the Shares of Total Family Income Captured by Massachusetts and US Families in the Bottom Decile of the Family Income Distribution and the State's Rank among All 50 States, 1979-2009

GEOGRAPHIC AREA	1979	1989	1999	2009
Massachusetts	1.8%	1.4%	1.2%	1.2%
US	1.5%	1.3%	1.2%	1.2%
Massachusetts – US	.3%	.1%	.0%	.0%
Massachusetts rank among all 50 states	11th Tied	28th Tied	35th Tied	26th (tied with 14 other states)

Table 8-23:

Comparing the Shares of Income Obtained by Families in the Top and Bottom Segments of the Income Distribution in Massachusetts, the US, and the Rank among All 50 States, 2009

DECILE OR QUINTILE	MA	US	MA RANK AMONG 50 STATES
Top decile	31.1%	31.8%	10th highest (tied)
Top quintile	47.1%	48.1%	16th highest
Bottom decile	1.2%	1.2%	12th lowest (tied)
Bottom quintile	4.1%	4.0%	14th lowest (tied)
Top decile/bottom decile	26.0%	26.5%	13th highest
Top quintile/bottom quintile	11.3%	12.0%	18th highest

Source: 2009 American Community Survey, public use files, tabulations by author

Table 8-24:

Comparing the Relative Degree of Family Inequality in Massachusetts, the US, and Rank among All 50 States, 1979 and 2009

	1979			2009		
INEQUALITY MEASURE	MA	US	MA RANK AMONG 50 STATES	MA	US	MA RANK AMONG 50 STATES
Top decile/bottom decile	13.3	16.5	9th Lowest (tie)	26.0	26.5	13th highest
Top quintile/bottom quintile	6.7	8.0	5th Lowest (tie)	11.3	12.0	18th highest

Table 8-25:

The Changing Distribution of Income among Massachusetts Families by Age of Family Head, 1979-2009

QUINTILE	1979	1999	2009	PERCENTAGE POINT CHANGE, 1979-2009
Under 40				
Bottom	5.2%	3.5%	3.2%	-2.0%
Second	13.1%	10.2%	9.5%	-3.6%
Middle	18.9%	16.5%	16.4%	-2.5%
Fourth	24.5%	23.2%	24.1%	-.4%
Top	38.4%	46.6%	46.8%	8.4%
Top/bottom ratio	7.4	13.3	14.6	
40 – 64				
Bottom	6.7%	5.1%	4.7%	-2.0%
Second	13.3%	11.2%	10.8%	-2.5%
Middle	18.2%	15.9%	16.0%	-2.2%
Fourth	24.0%	21.9%	22.6%	-1.4%
Top	37.8%	45.9%	45.8%	8.0%
Top/bottom ratio	5.6	9.0	9.7	
65 and older				
Bottom	6.2%	5.1%	4.9%	-1.3%
Second	10.7%	9.8%	9.7%	-1.0%
Middle	15.6%	14.4%	14.4%	-1.2%
Fourth	23.0%	21.3%	21.5%	-1.5%
Top	44.5%	49.4%	49.4%	4.9%
Top/bottom ratio	7.2	9.7	10.1	

Sources: 1980, 2000 Censuses of Population and Housing; 2009 American Community Survey

major age groups over the 1979-2009 period is displayed in Table 8-25. In all three age groups, the top quintile of families increased their share of total income over this 30-year period while families in the bottom four quintiles all lost part of their share. The increase in the share of total income captured by families in the top quintile was quite sizeable in all three age groups, with 8 percentage point gains for those in the under 40 and 40 to 64 age groups and a near 5 percentage point increase in the top quintile's share among the state's older families.

By 2009, the top quintile in each of these three age groups had captured between 46 and 50 percent of all income. The bottom quintile of families in these three age groups was capturing only 3 to 5 percent, with the youngest families (head under 40) faring the worst. For these young families, the ratio of the top to bottom quintile nearly doubled, from 7.4 in 1979 to 14.6 in 2009 (Chart 8-13). For the other two age groups of families, inequality also rose steadily with the top quintile capturing 10 times as much money income as the bottom quintile of families in 2009. This represents a massive increase in income inequality between the top and the bot-

Table 8-26:

The Changing Distribution of Income among Massachusetts Families by Type of Family, 1979-2009

QUINTILE	1979	1999	2009	PERCENTAGE POINT CHANGE, 1979-2009
Married Couple				
Bottom	6.7%	5.5%	5.4%	-1.3%
Second	13.1%	11.2%	11.1%	-2.0%
Middle	18.0%	15.9%	16.1%	-1.9%
Fourth	23.7%	21.8%	22.3%	-1.4%
Top	38.5%	45.6%	45.0%	6.5%
Top/bottom ratio	5.7	8.3	8.3	
Male-headed family				
Bottom	5.7%	4.6%	4.4%	-1.3%
Second	12.2%	10.9%	10.3%	-1.9%
Middle	17.7%	16.4%	16.4%	-1.3%
Fourth	24.2%	23.3%	24.2%	.0%
Top	40.2%	45.0%	44.7%	4.5%
Top/Bottom Ratio	7.0	9.8	10.1	
Female-headed family				
Bottom	4.2%	3.2%	3.1%	-1.0%
Second	9.5%	9.3%	9.0%	-.5%
Middle	16.0%	15.7%	15.7%	-.3%
Fourth	24.8%	24.0%	24.0%	-.8%
Top	45.5%	47.8%	48.1%	2.6%
Top/bottom ratio	10.8	14.9	15.0	

tom of the family income distribution in all three age groups.

Family income inequality also increased markedly between 1979 and 2009 among families in each of the three family types (married-couple, unmarried male-headed family, unmarried female-headed family) (Table 8-26). In each of these three family groups, the top quintile of families increased their share of the family income pie between 1979 and 2009 while those families in the bottom four quintiles lost share, with the bulk of these changes taking place before the end of the 1990s. By 2009, the top quintile of families in each of these three family groups was capturing between 45 and 48 percent of total family income. Again, we find a substantial rise in the ratio of the top quintile's income share to that of the bottom quintile. In 2009, the top fifth of income recipients among married-couple families was receiving 8.3 times as much income as the bottom quintile while among unmarried female-headed families, the top quintile was receiving 15 times as much income. Many of the families in the latter group had children present in the home. The very substantial disparities in the incomes between the top and bottom of the distribution create enor-

Chart 8-13:

Trends in the Ratio of the Mean Family Income of Massachusetts Families in the Top Quintile to the Mean Income of Families in the Bottom Quintile by Age Group of Family Heads, 1979-2009

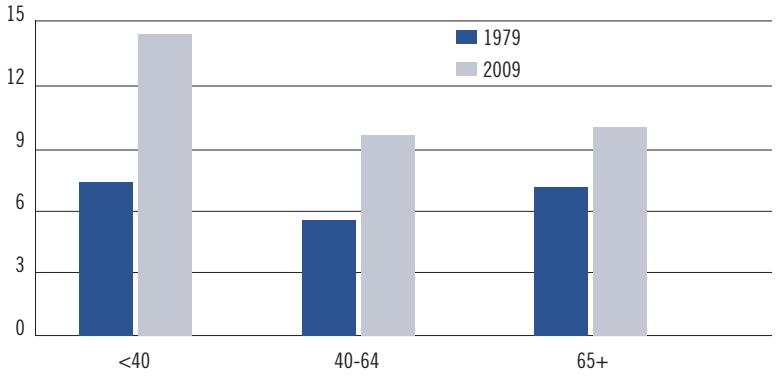


Chart 8-14:

Share of Total Money Income Received by Massachusetts Families in the Top Quintile of the Family Income Distribution by Race/Ethnicity (2009)

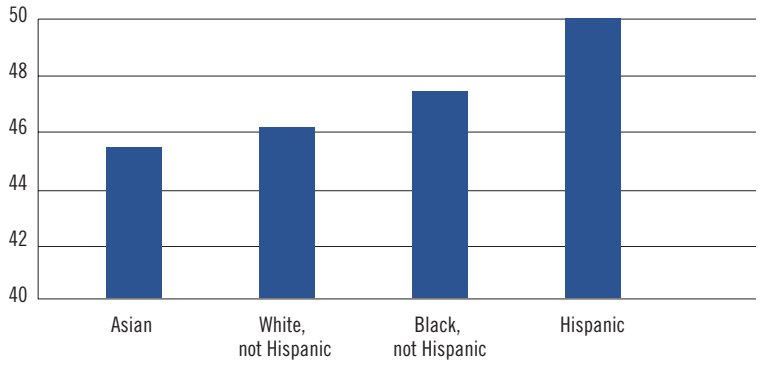


Table 8-27:

Trends in the Shares of Pre-Tax Money Incomes Received by Massachusetts Families with One or More Own Children in the Home by Quintile of the Income Distribution, 1979-2009

QUINTILE	1979	1999	2009	PERCENTAGE POINT CHANGE, 1979-2009
Bottom	5.1%	3.6%	3.4%	-1.7%
Second	12.6%	10.0%	9.5%	-3.1%
Middle	18.1%	15.6%	15.8%	-2.3%
Fourth	24.3%	22.2%	23.2%	-1.1%
Top	39.8%	48.5%	48.2%	8.4%
Top/Bottom Ratio	7.8	13.5	14.2	

mous differences in life chances for children in these two groups of families.

The data from the decennial Censuses and the 2009 American Community Survey also can be used to identify those Massachusetts families with one or more children under 18 years of age present in the home. The combination of rising shares of single-parent families, especially among those women with no post-secondary schooling, and increased assortative mating among the best educated could be expected to raise income disparities among families with children, placing a higher fraction of those children in the lower end of the income distribution at risk of material, cognitive, housing and health hardships. Recent national evidence on college enrollment and degree attainment among high school graduates over the past few decades has indicated a growing role for family income in influencing these critical post-secondary educational outcomes.[18]

Estimates of the shares of aggregate money incomes received by Massachusetts families with children living in the home in each quintile of the income distribution are displayed in Table 8-27 for selected years over the 1979-2009 time period. There was a very substantial increase in the concentration of income at the top of the income distribution over this 30-year period, with the bulk of these shifts taking place by the end of the 1990s. Between 1979 and 2009, the top quintile of families increased their share of aggregate income from slightly under 40 percent in 1979 to over 48 percent in both 1999 and 2009. The most affluent quintile of families obtained nearly as much income as the bottom 80 percent of families with children.

Over this 30-year period, all of the increase in income share went to those families in the top quintile while all other family groups lost part of their share. Over the past 10 years, the fourth and middle quintiles slightly improved their income shares while families in the bottom two quintiles continued to lose ground. In 1979, the share of

income received by the top quintile was nearly eight times as high as that of the bottom quintile of families. By 1999, the ratio of these two income shares had risen to 13.5 times and would rise above 14 times in 2009. In 2009, the top 20 percent most affluent families had as much pre-tax money income as the bottom 79 percent of all Massachusetts families with children during that year. The immense material advantages of children in these affluent families give them access to an expanded array of educational and social services and opportunities that will influence their future labor market and earnings prospects.[19]

Family income concentration at the top of the distribution increased within each of the four major race/ethnic groups between 1979 and 1999, with the top quintile increasing its share often close to or above 50 percent, and families in the four other quintiles losing part of their share of the income pie (See Table 8-28). In the most recent decade, the growth in family income inequality either came to a halt (blacks and white) or moderately declined (Asians and Hispanics).

Over the past 30 years, the top quintile of income recipients increased their share of the income pie in each of the four race/ethnic groups. In 2009, the top quintile of families in the four race/ethnic groups captured anywhere from 45 percent (Asians) to 50 percent (Hispanics) of total income. Among all four groups, the top 20 percent obtained nearly as much pre-tax money income as the bottom 77 to 80 percent of families. Addressing these large family income concentrations should be a major priority for state economic policymakers as we move through the coming decade. Many children residing in families in these lower income quintiles will face barriers to achieving desirable educational, health, nutrition and social goals.

Table 8-28:

Trends in the Shares of Massachusetts Family Incomes Received by Each Quintile of the Income Distribution by Race/Ethnicity of Family Head, 1979-2009

QUINTILE	1979	1999	2009	1979 – 2009
Asian				
Bottom	4.0%	3.1%	3.5%	-0.5%
Second	10.3%	8.9%	10.0%	-0.3%
Middle	16.5%	15.4%	16.8%	0.3%
Fourth	24.2%	23.7%	24.2%	0.0%
Top	44.9%	48.9%	45.4%	0.5%
Top/bottom ratio	11.2	15.8	13.0	1.7
Black, not Hispanic				
Bottom	3.9%	3.1%	3.7%	-0.2%
Second	9.9%	9.3%	9.4%	-0.5%
Middle	16.6%	15.6%	15.6%	-1.0%
Fourth	25.3%	23.9%	24.0%	-1.3%
Top	44.3%	48.1%	47.4%	3.1%
Top/bottom ratio	11.4	15.5	12.8	1.5
Hispanic				
Bottom	3.3%	2.5%	3.2%	-0.1%
Second	8.8%	7.9%	8.1%	-0.7%
Middle	13.7%	14.1%	15.0%	-0.7%
Fourth	25.6%	23.2%	23.7%	-1.9%
Top	46.5%	52.3%	50.0%	3.5%
Top/bottom ratio	14.1	20.9	15.6	1.5
White, not Hispanic				
Bottom	5.9%	5.0%	4.8%	-1.1%
Second	12.6%	10.8%	10.6%	-2.0%
Middle	17.9%	15.9%	16.0%	1.9%
Fourth	24.1%	22.1%	22.5%	-1.6%
Top	39.5%	46.3%	46.1%	6.6%
Top/bottom ratio	6.7	9.3	9.6	2.9

Endnotes

1 In a following section, we present the US Census Bureau definition of a family household, the basis for all of the analyses appearing in this chapter.

2 For analyses of changes in family incomes in the state in earlier decades, see Andrew Sum and others, *The State of the American Dream in New England* (Boston, MA: MassINC, 1997); Andrew Sum and others, *The Road Ahead: Emerging Threats to Workers, Families, and the Massachusetts Economy* (Boston, MA: MassINC, 1998); Andrew Sum and others, *The State of the American Dream in Massachusetts, 2002* (Boston, MA: MassINC, 2002).

3 The national CPI-UX1 price index was developed by the Bureau of Labor Statistics in the mid-1980s to convert earlier values for the CPI-U index from 1982 to 1950 into their values on the new price index methodology. There is only a 2 percent difference in their values in 1979.

4 The values for the Boston CPI-UX1 index for the years 1979 to 1982 were generated by applying the same proportional factors between the old and new CPI-U indices for each year at the national level. The geographic boundaries for the Greater Boston area cover nearly two-thirds of the population of the state.

5 These estimates are based on the findings of the March 1990 and March 1995 CPS surveys for the state.

6 Median family incomes actually rose between 1999 and 2000, but then fell during the recessionary years of 2001 and the largely jobless recovery years of 2002-2003.

7 For a review of trends in domestic in and out migration from Massachusetts during the 1990s and the 2000-2006 period, see Andrew Sum, Ishwar Khatiwada, and Joseph McLaughlin, *Mass Jobs: Meeting the Challenges of a Shifting Economy* (Boston, MA: MassINC, 2007).

8 Regional price parities calculated by the Bureau of Economic Analysis for individual states for the 2005-2009 period indicate that average prices in Massachusetts were about 9 percent above the national average. Rents and housing services in Massachusetts were characterized by the highest relative price differences, see Betlina Aten and others, "Regional Price Parities By Expenditure Class, 2005-2009," (Washington, DC: US Bureau of Economic Analysis, 2011).

9 Members of the Baby Boom generation are typically defined as those born between 1946 and 1964, see Landon Jones, *Great Expectations: America and the Baby Boom Generation*, Coward, McCann, and Geoghegan, New York, 1980.

10 Asian families have sharply improved their median real incomes over the past few decades and achieved a higher median income than white, non-Hispanics in 2009. In contrast, the median incomes of Hispanic families have grown very slowly and remain far below those of whites.

11 For a comprehensive review of the labor market and income well-being of the nation's young families in the past decade, see Andrew Sum and others, "Vanishing Dreams Revisited," The Children's Defense Fund, Washington, DC, 2011.

12 Assortative mating refers to the practice of marrying someone from the same socioeconomic background. College graduates in the US in recent years overwhelmingly marry other college graduates. Both spouses tend to work a considerable number of hours during the year and substantially out-earn their less educated counterparts.

13 See Kay Hymowitz, *Marriage and Caste in America*, Ivan R. Dee, Chicago, 2006; Andrew Sum and others, "No Country for Young Men: Deteriorating Labor Market Prospects for Low Skilled Men in the United States," *Annals of the American Academy of Political and Social Science* 635 (2011).

14 Other races include American Indians/Alaskan Natives and members of mixed races.

15 We stop at the 99th percentile since the top coding procedures used by the US Census Bureau in recording family incomes typically do not allow us to identify the true values of the incomes of families above the 99th percentile. The top coding of incomes in the top percentile also reduces the estimated amount of income received by Massachusetts families in the top decile of the distribution.

16 It should be noted that over time families move up and down the distribution. A family at the 20th percentile in 1979 will not be at the same percentile in 2009.

17 Due to top coding, the share of total income received by families in the upper five percent is actually greater than this by anywhere from 5 to 9 percentage points.

18 See Philippe Belley and Lance Lochner, "The Changing Role of Family Income and Ability in Determining Educational Achievement," *Journal of Human Capital* 1(1) (2007); Andrew Sum and Mykhaylo Trubskyy, "Variations in Bachelor Degree Attainment Rates and Access to College Labor Market Jobs: Is This the End of the American Dream for Poor Children," Paper prepared for the Educational Testing Service, Princeton, New Jersey, 2011.

Chapter Nine

Public Confidence in the American Dream

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with
Sheila Palma

Introduction

All of the preceding analyses of the labor market experiences, labor market problems, weekly earnings, and the annual incomes of Massachusetts residents and their families were based on objective measures of their status and experiences. One might ask how individuals in Massachusetts and the US feel about their economic and social well-being, including their ability to obtain their desired lifestyle, to improve upon the living standards of their parents, to achieve the American Dream, and to secure high levels of general life satisfaction. How do they view the life chances of the next generation of adults?

To answer these key questions on the subjective well-being of Massachusetts and US residents, we have analyzed findings over the past few years of a fairly wide array of public opinion and household surveys conducted by MassINC, the National Centers for Disease Control, and national media/polling firms.[1] We will start each analysis with an overview of findings from the recent MassINC public opinion polls and follow up these state findings with results from comparable national surveys, when possible, to place the results for state residents in comparative perspective.

The April and July 2011 MassINC surveys asked respondents whether over the past decade they had found it easier, the same, or more difficult "to live the kind of life you want." The findings in Table 9-1 and Chart 9-1 reveal a substantially greater share of respondents reporting that it had become more difficult rather than easier to achieve their desired lifestyle. Fifty-one percent of the respondents stated that it had become "more difficult" to achieve their lifestyle goals versus only 10 percent who said it had become easier, with the remaining 38 percent reporting no change. Respondents in each of the four age groups were far more likely to report a greater difficulty rather than greater ease in achieving their goals (Chart 9-2). However, young adults (18-29) were the most likely to report greater difficulty, a finding in close accord with many national analyses and surveys of the deteriorating well-being of young US workers and their families.[2]

In a somewhat similar survey conducted in November 2010 by the Public Agenda, a nonpartisan, nonprofit research and communications organization, a sample of American adults were asked to describe whether they were struggling a lot, a little, or not at all these days."[3] By a very large margin, respondents reported that they were experiencing "a lot" or "a little" struggle versus "none at all" (82 percent vs. 17 percent). The share of respondents reporting "a lot" of struggle exceeded the share citing no problems by a margin of 2.3 to 1. When asked to describe the situa-

Table 9-1:

Over the Past 10 Years Has It Become Easier or More Difficult for You and Your Family to Afford to Live the Kind of Life You Want by Age of Respondent, April-July 2011 Average

EASE OF AFFORDING DESIRED LIFESTYLE	ALL AGES	18-29	30-44	45-59	60+
Easier	10	8	13	13	6
More Difficult	51	57	49	52	47
Same	38	33	37	35	44
More difficult/easier ratio	5	7	4	4	8

Chart 9-1:

Percent of Massachusetts Respondents Reporting that It Had Become Easier, the Same, or More Difficult to Afford the Kind of Life They Want, Average April–July 2011

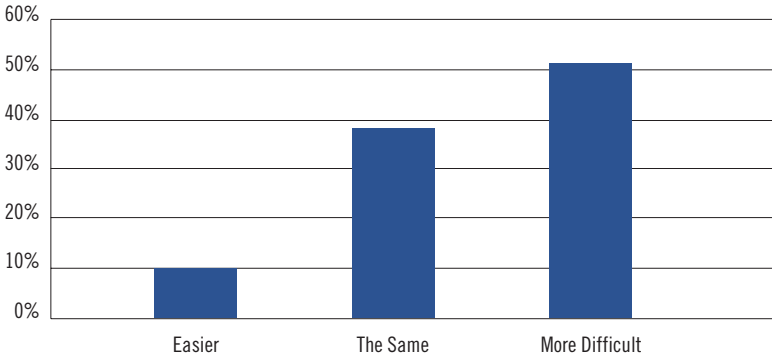


Chart 9-2:

Percent of Massachusetts Residents Who Have Found It More Difficult Over the Past Decade to Achieve Their Desired Lifestyle by Age Group

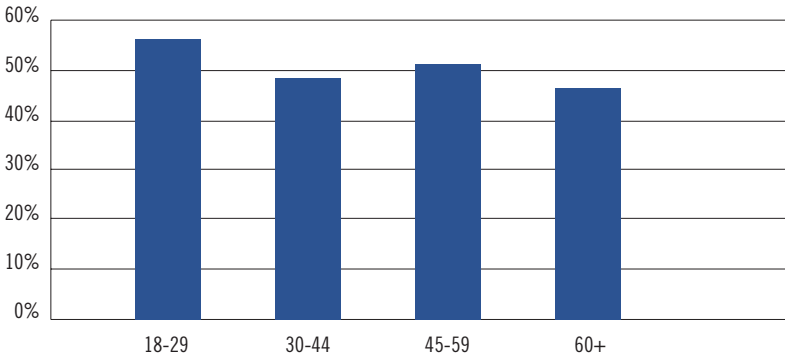
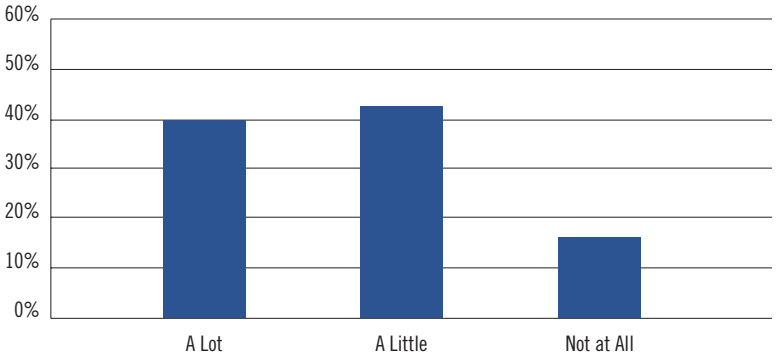


Chart 9-3:

Percent of US Residents Who Responded that they are Struggling a Lot, a Little, or Not at All These Days, November 2010



tion for working families, persons without a college degree, and small business owners, between 83 and 91 percent reported "a lot" of struggle.

In the April-July 2011 MassINC surveys, respondents were asked to compare their current financial status with that of their parents at the same age (Chart 9-4 and Table 9-2). Nearly 47 percent of respondents cited that they were better off than their parents, while 29 percent reported the same financial status as their parents, and 24 percent said they were "worse off." When the results were analyzed by age group, the state's older residents (60+) were found to provide the most favorable ratings of their comparative financial status, with 60 percent stating better and only 13 percent worse, a ratio of nearly 5 to 1, while among the state's youngest residents, the relative ratio of responses citing "better" rather than "worse" was only 1.4 to 1.

In the September 2010 and the April/July 2011 MassINC surveys, respondents were asked whether they believed the next generation of adults in Massachusetts would be "better off, the same, or worse off" than they were at the same age in their lives. The highest share of respondents (45 percent) indicated that the next generation would be "worse off," another 33 percent said the "same," and only 19 percent thought that they would be "better off."

When we analyzed the results for the April/July 2011 surveys by major age group, a number of interesting findings appear. In each age group, the percent of respondents indicating that the next generation would be worse off exceeded the share believing they would be better off. Members of the two oldest age groups (those 45-59 and 60+) were the most pessimistic, with a near majority of both groups reporting that the next generation would be worse off. Even among the young, those 18-29 years old, the fraction believing the next generation would be "worse off" exceeded those indicating "better off" (33 percent vs. 23 percent), but the highest fraction (41 per-

cent) believed things would be the same.[4]

Very similar results have been found in national surveys on this same topic. In an April 2011 USA TODAY/Gallup poll, respondents were asked to assess "how likely it was that today's youth will have a better life than their parents."[5] For the first time in the 28 years for which such polling data exist, a majority (55 percent) of the respondents selected the answers "somewhat or very unlikely" that youth would have that better life. Only 44 percent said that today's youth were "very" or "somewhat" likely to have a better life than their parents. This 44 percent represented an all-time low for this survey. From the late 1990s through the early years of this decade and even as recently as early 2008, between two-thirds and 70 percent of respondents believed that today's youth would be better off than their parents. Very similar results prevailed in a November 2010 poll by the Associated Press/CNBC News.[6] When asked whether the "next generation" would be better off than their parents, only 21 percent said the next generation would be better off versus 45 percent who thought that they would be worse off and 33 percent who said "the same."

In a series of polls of the nation's 18-24-year-old youth, the AP-VIACOM survey asked respondents to assess how easy/hard it would be for them in comparison to the experiences of their parents to achieve the following four outcomes: raise a family, earn enough to support a desired lifestyle, buy a house, save money for retirement (Table 9-4). In each of these four cases, those respondents claiming that it would be harder for them in comparison to their parents exceeded the share believing that it would be easier by a ratio of at least 1.5. A majority (53 to 56 percent) felt that it would be harder for them to buy a house or save money for retirement.

In the July 2011 MassINC poll, respondents were asked whether they had achieved the American Dream. Just under half (49 percent) believed that they had achieved the American Dream.

Table 9-2:

Comparisons of the Current Financial Status of Respondents with that of Their Parents at the Same Age by Age Group, April-July 2011 Average

COMPARATIVE FINANCIAL STATUS	ALL AGES	18–29	30–44	45–59	60+
Better	47	42	43	43	60
Same	29	29	28	31	26
Worse	24	29	28	25	13
Better / Worse	2*	1.4*	1.5*	1.7*	4.6*

Chart 9-4:

Comparisons of the Current Financial Status of Respondents with that of Their Parents at the Same Age, Average April-July 2011

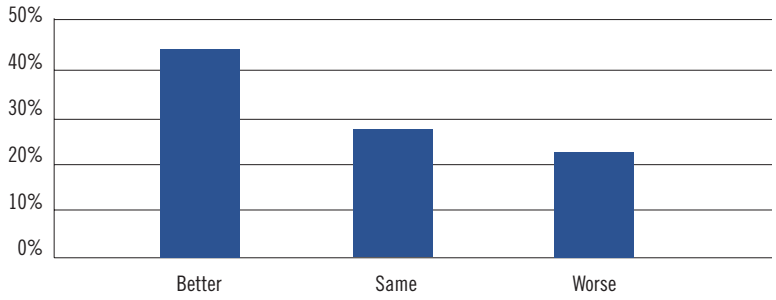


Chart 9-5:

Percent of Massachusetts Residents Who Believe the Next Generation Will be Better Off, Worse Off, or the Same (9/2010, 4/2011, 7/2011 averages)

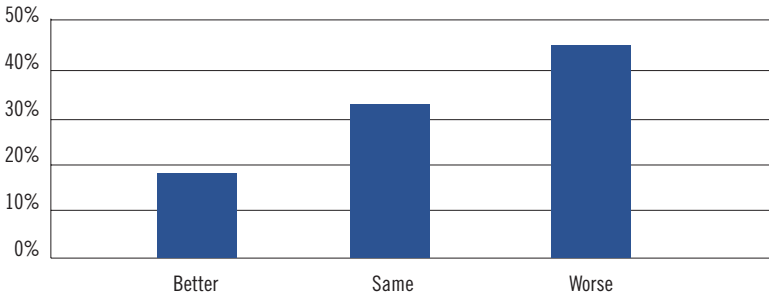


Table 9-3:

Percent of Massachusetts Residents Who Believe the Next Generation Will be Better Off, Worse Off, or the Same

FATE OF NEXT GENERATION	18-29	30-44	45-59	60+
Better	23	20	15	20
Same	41	33	33	30
Worse	33	42	49	46
Worse / Better	1.4*	2.1*	3.3*	2.3*

Table 9-4:

Compared to the Experiences of Your Parents, Will it Be Easier, the Same or Harder for You to Achieve the Following Outcomes (18-24-year-olds, March 2011)

OUTCOME	EASIER	SAME	HARDER	HARDER / EASIER
Raise a family	27	31	42	1.6*
Earn Enough to Support Desired Lifestyle	29	27	45	1.5*
Buy a House	25	19	56	2.2*
Save Money for Retirement	26	21	53	2.1*

Source: The AP-VIACOM Survey of Youth on Education, March 2011

Chart 9-6:

Percent of Massachusetts Residents Who Report That They Have Achieved the American Dream, All and by Household Income, July 2011

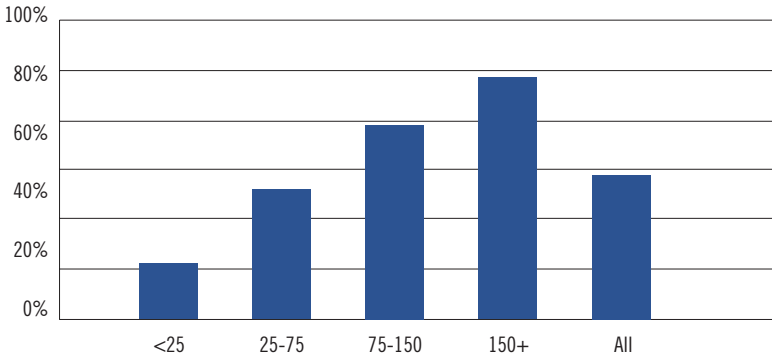
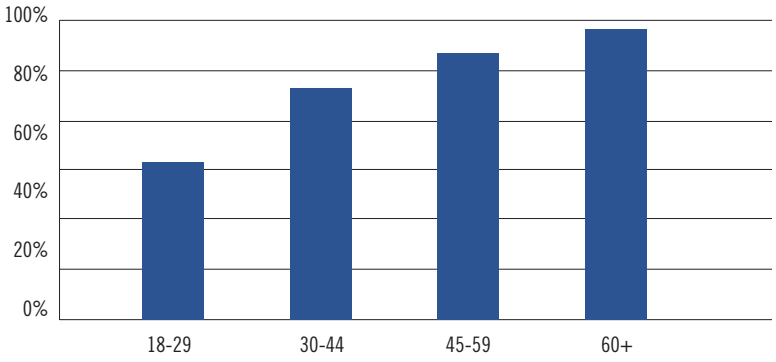


Chart 9-7:

Percent of Massachusetts Residents Who Report That They Have Achieved the American Dream by Age Group, July 2011



The share of respondents believing that they had secured the American Dream varied widely across household income groups, ranging from a low of 19 percent for those with incomes under $25,000 to 44 percent for those with incomes between $25,000 and $75,000, to a high of 82 percent for those with incomes above $150,000. The relative size of the gap between the top and bottom income group was more than four times.

As expected, given fairly wide disparities in recent economic success in our state, the fraction of state residents believing that they had achieved the American Dream varied fairly considerably across age groups, rising steadily with age. Fewer than one-third of the youngest respondents (18-29) felt that they had achieved the Dream versus 47 percent of those 30-44 years old and just under 60 percent of those 60 and older (Chart 9-7). Unfortunately, we lack any time series data on this question for Massachusetts. Given our previous findings on changes in the real incomes of Massachusetts households over the past decade, it is quite doubtful that the state has made any progress in this area over the past decade given the key role of achieving a middle-class income in securing the American Dream.

Life Satisfaction of Massachusetts Residents in 2009-2010

During the past decade, a growing number of economists, political scientists, psychologists, and sociologists have conducted studies of happiness and life satisfaction both in the US and in many other countries across the world.[7] These studies have analyzed the average levels of happiness/life satisfaction, variations in life satisfaction across subgroups, the determinants of life satisfaction, and public policies to improve the life satisfaction of the population. A number of nations, including the United Kingdom and China, have either established an increase in happiness as a national goal or announced plans to

Table 9-5:

Life Satisfaction of Massachusetts and US Residents 18-74 Years Old, 2010

LIFE SATISFACTION	MA	US	MA –US	MASSACHUSETTS RANK AMONG 50 STATES(1)
Very satisfied	45.2%	43.4%	1.8%	32nd highest (tied)
Somewhat satisfied	50.4%	51.3%	.9%	
Somewhat or very dissatisfied	4.4%	5.3%	.9%	15th lowest (tied with 4 other states)

Sources: 2010 BRFSS survey, 2010, tabulations by authors
Note: These rankings are based on two-year averages for 2009-2010

measure the happiness of the population on an ongoing basis.[8]

Until recently, neither life satisfaction nor happiness measures have been available for large, representative samples of state residents. Since 2005, however, the National Centers for Disease Control have sponsored an annual survey of US adults 18 and older known as the Behavioral Risk Factor Surveillance System.[9] The survey collects detailed information on the physical and mental health behaviors, experiences, problems and status of respondents, including their perceived satisfaction with life and their physical and mental well-being.

Each respondent in the 2009-2010 surveys was asked the following question: "In general, how satisfied are you with your life?" The four allowable responses ranged from "very satisfied" to "very dissatisfied." For the 2010 survey, responses were available from slightly over 436,000 adults across the entire country and more than 16,300 adults in the state of Massachusetts.[10] Table 9-5 presents the findings (based on sample weighted responses) on life satisfaction for Massachusetts and US residents ages 18-74 during the 2010 surveys.

Slightly over 45 percent of Massachusetts residents reported that they were "very satisfied" with life. This percentage share was nearly 2 percentage points above that of the nation, but Massachusetts ranked only 32nd highest on this measure among the 50 states. Another 50 percent of Bay State respondents stated that they were "somewhat satisfied" with life, about 1 percentage point below the national share of respondents (51 percent). Only 4.4 percent of Massachusetts adults indicated that they were "somewhat or very dissatisfied with life," slightly below the US average of 5.3 percent, and the state ranked 15th lowest on this measure, tied with four other states. Given findings of past research on the influence of family income, educational attainment, and physical health and well-being on life satisfaction or happiness, one might have expected Massachusetts to perform somewhat better on this overall life satisfaction variable, given the state's higher median family incomes, educational attainment of its population and better physical health.

To identify the simple, one-way association between general life satisfaction and household incomes in Massachusetts and the US in 2010, we estimated the share of adults (18-74 years old) in both areas in five household income groups who reported themselves as either "very satisfied" with life or "somewhat or very dissatisfied."[11] In both Massachusetts and the US, the percent of adults 18-74 years old who reported themselves as being "very satisfied with life" rose steadily and steeply with their household incomes. In Massachusetts, only 22 percent of those with the lowest incomes (under $20,000) claimed to be "very

Table 9-6:

Comparisons of the Percentage of 18-74 Year Olds in Massachusetts and the US Who Report Being Very Satisfied with Life, by Household Income, 2010

HOUSEHOLD INCOME	MA	US	MA – US
< $20,000	21.7%	26.1%	4.4%
$20 – 35,000	31.7%	33.5%	2.1%
$35 – 50,000	35.1%	41.2%	6.1%
$50 – 75,000	46.0%	47.2%	1.2%
$75,000 +	56.6%	57.3%	0.7%
All	45.2%	43.4%	1.8%

Table 9-7:

Comparisons of the Percentage of 18-74 Year Olds in Massachusetts and the US Who Report Being Dissatisfied with Life by Household Income, 2010

HOUSEHOLD INCOME	MA	US	MA – US
< $20,000	14.4%	12.7%	1.7%
$20 – 35,000	8.1%	7.1%	1.0%
$35 – 50,000	6.4%	4.7%	1.7%
$50 – 75,000	2.8%	3.1%	-0.3%
$75,000 +	1.5%	1.9%	-0.4%
All	4.4%	5.3%	-0.9%

Table 9-8:

Ratio of Percent of Massachusetts and US Residents Reporting Themselves as Very Satisfied with Life to those Reporting Being Dissatisfied or Very Dissatisfied by Household Income, 2010

HOUSEHOLD INCOME	RATIO, MASSACHUSETTS	RATIO, US
< $20,000	1.5	2.1
$20 – 35,000	4.0	4.9
$35 – 50,000	5.5	8.8
$50 – 75,000	16.4	24.8
$75,000 +	37.8	30.0
All	10.3	8.2

satisfied" with life versus 35 percent of those with annual incomes between $35,000-$50,000 and nearly 57 percent of those with incomes above $75,000. The relative difference in "very satisfied" responses between the top and bottom of the household income distribution was nearly 3 to 1. Very similar patterns between life satisfaction and household incomes prevailed in the nation; however, it is interesting to note that in every household income category the percent of US respondents who reported themselves as "very satisfied" exceeded that of Massachusetts, with large gaps of 4 to 6 percentage points at the bottom and middle. This result may well be due to the higher costs of living in Massachusetts, which reduce the true purchasing power of incomes of households in our state with that of their national counterparts in the same income group. The higher costs of home-ownership in the state also reduce the ability of households to own their housing units, thereby lowering life satisfaction.[12]

We also used the findings from the 2010 BRFSS survey to estimate the share of 18-74-year-old adults in Massachusetts and the US who classified themselves as "somewhat dissatisfied or very dissatisfied" with life by household income (Table 9-7). The fraction of the state's adults who said they were "somewhat" or "very dissatisfied" with life was highest by far for those with the lowest household income. Approximately 1 of 7 adults with incomes under $20,000 reported themselves to be dissatisfied with life. This ratio fell to 8 percent for those with incomes between $20,000-$35,000 and to a low of 1.5 percent for those in the highest income category. Only about 1 in 70 upper-middle income and high-income respondents expressed dissatisfaction with life in 2010. Again, very similar patterns prevailed across the country.

We compared the findings on the percent of Massachusetts residents in each household income category who report themselves as "very

satisfied with life" to the percent describing themselves as dissatisfied with life (Table 9-8 and Chart 9-8). The overall ratio of very satisfied to dissatisfied was more than 10 to 1 in Massachusetts in 2010. However, the values of these ratios rose steadily and very steeply with the size of their annual household incomes. The ratio was only 1.5 to 1 for the lowest income group (household incomes under $20,000), rose to 5.5 to 1 for those with annual incomes between $35,000 and $50,000 and came close to 38 to 1 for those in the highest income category. The relative size of the differences in these ratios from top to bottom in Massachusetts was considerably greater than in the nation (25 to 1 versus 14 to 1).

Predicting the Probability of Being Very Satisfied with Life in Massachusetts, 2009-2010

Previous research on happiness and life satisfaction both in the US and abroad has found that both happiness and life satisfaction are significantly correlated with age, educational attainment, marital status, one's physical health, employment status, volunteering and charitable giving, and household income.[13] We have used the findings of the 2009 and 2010 BRFSS surveys for Massachusetts to estimate a linear probability model of being very satisfied with life.[14] The main regression model included a set of gender, age, race-ethnic, educational attainment, marital status, employment/labor force status and household income variables as predictors. A second model also included a variable representing one's self-perceived physical health status.[15]

Key findings of the regression analysis are displayed in Tables 9-9 and 9-10. Table 9-9 lists all explanatory variables that had a statistically significant, independent impact (positive or negative) on the probability of reporting oneself as "very satisfied" with life together with the estimated percentage point impact on that probabil-

Chart 9-8:

Ratio of Those Very Satisfied with Life to Those Dissatisfied with Life by Household Income in Massachusetts, 2010

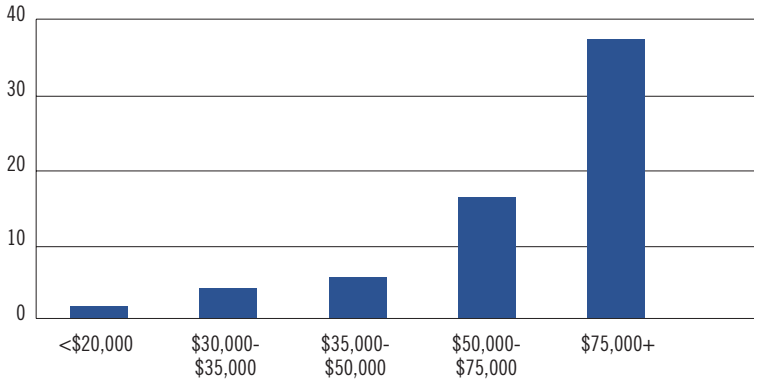


Table 9-9:

Listing of Demographic, Human Capital, Employment and Household Income Variables that Had Statistically Significant(1) Impacts on the Probability of Being Very Satisfied with Life, 2009-2010 Averages (in percentage points)

VARIABLE	IMPACT	VARIABLE	IMPACT
Male	-2.8	Out of work <1 year	-7.0
Asian	-5.1	Out of work >1 year	-10.0
Black	-2.7	Voluntarily retired	3.0
Other race	-4.5	HH Income 20 – 35K	3.2
Age 25 – 34	-3.8	HH Income 35 – 50K	4.4
Age 35 – 44	-7.0	HH Income 50 – 75K	10.4
Age 45 – 54	-8.0	HH Income 75+K	19.5
Age 55 – 64	-4.7		
High school dropout	-3.8		
College graduate	7.2		
Divorced/separated	-10.8		
Never married	-11.7		
Unmarried couple	-8.8		

(1) All impacts were significant at either .05 or .01

ity. Among the key findings were the following:

- Males (-3 percentage points) were significantly less likely than women to report themselves as "very satisfied" with life.
- Asians (-5 percentage points), blacks (-3 percentage points), and members of other races (American Indians, mixed race) were significantly less likely than white, non-Hispanics to report themselves as very satisfied.

HIGHER HOUSEHOLD INCOMES SIGNIFICANTLY RAISED THE PROBABILITY OF REPORTING ONESELF AS VERY SATISFIED WITH LIFE.

- Age affects life satisfaction with its U pattern. Life satisfaction declines with age through the early to mid 50s then rises over the remainder of the life course. Older individuals tend to be the happiest.[16]
- Marital status has large impacts on life satisfaction. Being never married, divorced/separated, or unmarried couples had a significant negative impact on the probability of being very satisfied with life.
- Formal schooling has a number of impacts on life satisfaction. High school dropouts (-4 percentage points) were significantly less likely than high school graduates to be satisfied while those with a bachelor's or higher degree (+7 percentage points) were significantly more likely to be very satisfied than high school graduates. Persons completing one to three years of post-secondary schooling did not fare any differently than high school graduates.

Being out of work (unemployed) had significant large negative effects (-7 to -10 percentage points) on the probability of being very satisfied with life relative to their employed counterparts. The voluntarily retired were modestly more likely to report high levels of satisfaction than the employed.

Higher household incomes significantly raised the probability of reporting oneself as very satisfied with life. The estimated effects ranged from 3 to 4 percentage points for those with household incomes between $20,000 and 50,000 to just under 20 percentage points for those with incomes over $75,000. These findings again are in close accord with those of many other studies across the nation and the world.

In a separate regression model of life satisfaction, we also included self-rated physical health status as a predictor variable. Those persons citing their health as only "fair or poor" were significantly less likely to report themselves as "very satisfied" with life. Being jobless, less educated and low income also were strong predictors of those who also reported being in only fair or poor health and in bad mental health.

We used the findings of the linear probability model of being "very satisfied" with life to help predict the probability that an individual with given demographic, human capital, employment, and household income traits would report herself/himself as being "very satisfied" with life in general. We predicted such probabilities for four different individuals with quite varying demographic/socioeconomic traits that would be expected to yield substantially different chances of reporting oneself as "very satisfied" with life. Our first individual is a white, male, 25-34 years old, who did not graduate from high school, was not married, had been out of work for more than a year, and lived in a low income family. His predicted probability of being very satisfied with life was only 11.6 percent, or approximately a 1 in 9 chance.

Our second individual (Person B) is also a single, white, non-Hispanic, young (18-24 years old) male, but he has a high school diploma, is employed, and lives in a household with an income between $20,000 and $35,000. His pre-

dicted probability of being very satisfied with life rises to just under 31 percent or nearly three times as high as the first individual. Our third individual (Person C) is quite similar demographically to Person B, but he is married and lives in a middle- to upper-middle-income household ($50,000–$75,000). His predicted probability of being "very satisfied" with life increases to 44 percent. Our last individual is an older woman, (aged 65), who is married, employed, a four-year college graduate, and lives in a household with an annual income over $75,000. Her predicted probability of being "very satisfied" with life was the highest of the four at 66.6 percent, or 2 out of 3. Her predicted probability was nearly six times as high as that of our first individual. The main factors driving these different outcomes were in order of importance: household income, marital status, avoiding unemployment, and achieving a four-year college degree.

Several of the key variables that influenced the attainment of the American Dream in Massachusetts (household income, educational attainment, age group) were also associated with securing a high degree of general life satisfaction. The absence of any growth in the median real income of Massachusetts families over the past decade, the widening degree of family income inequality, and the decline in marriage among the state's younger adults have not only led to a decline in the middle class and their economic well-being, but also, in all likelihood, reduced life satisfaction, mental health, and chances of achieving the American Dream. Very similar results prevail nationwide, but we should be deeply concerned about the absence of any progress in broadening the middle class, improving their economic well-being, and increasing their ability to achieve the American Dream here in Massachusetts. The deep concerns expressed by the public about the economic fate of the next generation should be viewed by policymakers and the public as deeply troubling.

Table 9-10:

Predicted Probabilities of Hypothetical Massachusetts Residents Reporting Themselves to Be Very Satisfied with Life, 2009–2010

TRAITS OF INDIVIDUAL	PREDICTED PROBABILITY
Individual A: White, male, 25-34, not married, high school dropout, out of work for more than 52 weeks, low income (<20,000)	11.6%
Individual B: White, male, 18-24, not married, high school graduate, employed, household income between $25-35,000	30.6%
Individual C: White, male, 25-34, married, high school graduate, employed household income $50-75,000	43.7%
Individual D: White, female, 65 years old, married, a college graduate, employed, household income over $75,000	66.6%

Endnotes

1 The results of MassINC surveys of state households in September 2010, April 2011, and July 2011 were used in conducting this analysis. Approximately 500 individuals were interviewed in each of these surveys. Some of the national opinion polls on the expected future fate of young Americans go back nearly 30 years to the early 1980s.

2 For a review of the deteriorating real incomes and widening income inequalities among the nation's young families, See: Andrew Sum and Ishwar Khatiwada, *Trends in Real Incomes of Young Families in the US, Declining Average Incomes Amidst Widening Inequality,* Children's Defense Fund Policy Research Brief 3, Washington, D.C., 2010.

3 See Public Agenda, "Four in 10 Americans Struggle to Pay the Bills, Anxious About Maintaining Middle Class Life," New York City, February 2011.

4 See Elizabeth Mendes, "In US, Optimism about the Future for Youth Reaches All-Time Low," Gallup, May 2011; www.PollingReport.com, October 2011.

5 See Stanford University, *The AP-VIACOM Survey of Youth on Education,* March 2011.

6 See AP – CNBC Poll conducted by GfK Roper Public Affairs, November 2010.

7 For examples of such studies of happiness, their determinants, and consequences, see Derek Bok, *The Politics of Happiness*, Princeton University Press, Princeton, 2010; Arthur C. Brooks, Gross National *Happiness: Why Happiness Matters for America and How We Can Get More of It*, Basic Books, New York, 2008; Richard Layard, *Happiness: Lessons from A New Science,* Penguin Press, New York, 2005; Joseph Stiglitzand others, *Mismeasuring Our Lives: Why GDP Doesn't Add Up*, The New Press, New York, 2010.

8 For a review of the proposals of Prime Minister Cameron to create an index of national happiness and similar efforts in China, see Roger Cohen, "The Happynomics of Life," *The New York Times*, March 12, 2011; "Don't Worry Be Happy," *The Economist,* March 19, 2010, p. 49; "Economics Focus/The Joyless or the Jobless," *The Economist,* November 27, 2010, p. 84.

9 For a review of the variables appearing in the BRFSS survey, see Centers for Disease Control, *Behavioral Risk Factor Surveillance System, 2010 Codebook Report*, May 24, 2011. In recent years, the Gallup and Health Ways organization have been implementing a survey of health, safety, work and overall life well-being with outcomes available at the state level but fees are charged for its use.

10 A small share of respondents (~1 percent) either were unsure about their life satisfaction or refused to answer the question.

11 The five household income groups are those identified on the BRFSS survey. We cannot break out incomes above $75,000.

12 The housing affordability issue and its impacts on home ownership were discussed in greater detail in our earlier publication, *The State of the American Dream in Massachusetts: 2002.*

13 *See* Arthur Brooks, *Gross National Happiness*, Basic Books, 2008; Derek Bok (2010).

14 The dependent variable is a dummy variable that takes on the value of 1 if the respondent was very satisfied with life and 0 for all other responses.

15 The base group for the analysis is a White, non-Hispanic female, 65-74 years old, who was employed, a high school graduate, married, and living in a low-income family.

16 Similar findings on this U age pattern for happiness and life satisfaction prevail in many other studies. See "Age and Happiness," *The Economist*, December 18, 2010.

Chapter Ten

Summary of Key Findings and Their Public Policy Implications

Prepared by:
Andrew Sum

Introduction

This report has provided a detailed, objective review and assessment of the output and job creation performance of the Massachusetts economy over the past decade and earlier decades and the impacts of this output and job creation on the economic well-being of the state's workers and their families. We identified the links between these employment and earnings changes across age, educational attainment, race/ethnic, and occupational groups and the changing distribution of weekly wages, annual earnings, household incomes, and family incomes. The absence of any growth in the real incomes of the average family and household in Massachusetts over the past decade combined with widening inequality in the distribution of those incomes modestly reduced the size of the middle class and kept their living standards on hold. We also examined the public's perceptions of how these changes have influenced their own economic well-being, their comparative living standards, and their ability to achieve the American Dream.

This final chapter is devoted to a summary of the main findings of the study, the inter-relationships among these findings, and their implications for public policy at the national, state, and local level. What actions might governments pursue to help strengthen middle-class families and keep the American Dream alive for both current and future families in the Commonwealth?[1]

The Aggregate Output and Job Creation Performance of the Massachusetts Economy

The past decade has seen a dramatic shift in the overall performance of the state and national economy. Nationally, the growth of aggregate real output and per capita output slowed to its lowest rate in generations, the national unemployment rate jumped to over 9 percent by the end of the decade, and labor productivity growth dropped by a third. Over the decade, the nation's GDP grew by just 17 percent and per capita output by only 7 percent, prompting some economists to dub 2000-2010 a Lost Decade. The national per capita GSP growth rate was the only single-digit growth rate over the past 80 years, including the Depression decade of the 1930s. On several output measures, the Massachusetts economy fared even worse than the national economy. Our state's per capita GSP economic growth over the decade was only 8 percent. In the prior two decades, the Massachusetts economy grew at a pace that was more than 5 times (1979-1989) and more than 3 times (1990-2000) faster than the growth rate during the past decade. The limited rate of real output growth was a key factor underlying the decline in the number of payroll jobs over the past decade and rapidly rising labor underutilization problems.

The weak growth in real output per capita in Massachusetts was driven by a number of labor market factors, including a declining civilian labor force participation rate, a rising unemployment rate, and a reduced rate of labor employment intensity as measured by hours worked per year. Not only were fewer workers employed, but those workers who were employed worked fewer hours in 2010 than in 2000. While labor productivity grew over the decade, the rate of productivity growth was not large enough by itself to keep

economic growth rates at their earlier levels. The growth in labor productivity should have led to some increase in worker's real wages. However, the mean weekly wages of employed wage and salary workers in Massachusetts did not grow over the decade. The link between productivity growth and real wage growth was nearly completely severed.

Our analysis of the output performance of selected key industries in the state showed that many of the industries that had played an important role in the Massachusetts economy in the 1990s had lost part of their competitive advantage. These industries included computer and electronic products manufacturing, insurance carriers, computer systems design, fabricated metal manufacturing, and retail trade. A few industries, especially health services, chemical/pharmaceutical manufacturing, publishing (including software) showed some output growth driven by state-related improvements in comparative output shares. Overall, however, we found that Massachusetts was losing its comparative advantage to other states in the nation, putting additional downward pressure on real GSP growth in Massachusetts. It is imperative for state policymakers to explore potential measures for enhancing the state's future competitive advantage.

WE FOUND THAT MASSACHUSETTS WAS LOSING ITS COMPARATIVE ADVANTAGE TO OTHER STATES IN THE NATION.

Our analysis of output performance also showed that in Massachusetts and the nation the positive link between the human capital of workers in the state as measured by their formal educational attainment and growth in real aggregate and per capita output has been broken. States with the most well-educated labor forces at the beginning of the decade (Massachusetts ranked number one on this measure) showed lackluster output and productivity growth over the past decade.

A key component of the American Dream is to be able to secure and maintain a stable, good paying job that can support a family and be accompanied by health and retirement benefits. The poor job creation performance of the US and Massachusetts economies over the past decade has led to fewer jobs that provide a middle-class standard of living, especially for men and women with no post-secondary degree. Over the past decade, the total number of payroll jobs in the US declined by nearly 2 million. This was the first decade since 1940 where no net new jobs were created. Unfortunately, Massachusetts also experienced payroll job losses between 2000 and 2010. Over this 10-year period, the state lost 143,000 jobs, or 4.3 percent of its base year employment. Massachusetts's job creation performance over the decade ranked only 45th highest among the 50 states, or sixth worst. The three southern New England states ranked among the bottom 10 performers on this key job creation measure.

Job losses were experienced by most counties across the state. The three counties with the largest number of payroll jobs in 2000 (Middlesex, Suffolk, and Norfolk) lost the most jobs in absolute terms over the decade. With the exception of Plymouth County, the only other counties in Massachusetts to gain jobs over the decade were the state's smaller counties (Hampshire, Nantucket, and Dukes). The job losses in the state's larger counties affected job growth in many of the larger cities in Massachusetts. Given the fact that lower income and black and Hispanic families are more highly concentrated in the larger cities of these counties, these job cuts disproportionately affected their employment well-being.

Among the state's 19 major industries, only 6 added jobs over the decade. The health care and social assistance sector was the best single performing industry by a wide margin for the

state. The number of payroll jobs in the health care and social services industries (many of which are dependent on government funding) increased from 404,000 in 2000 to 501,000 in 2010, a gain of 97,000 representing a 24 percent increase. Employment in private educational services also grew strongly over the decade, rising from 141,300 in 2000 to 163,100 in 2010, an increase of nearly 22,000 jobs or 15 percent.

However, payroll job losses were quite steep within the goods-producing industries (construction and manufacturing) of the state. In both absolute and percentage terms, the manufacturing sector was by far the biggest loser with payroll employment in this industry declining from 403,100 in 2000 to only 254,000 in 2010, a loss of 149,100 jobs or 37 percent. The declines in manufacturing employment over the decade were an acceleration of a long-term decline that began in the late 1980s and has persisted with minor, brief spurts in growth over the past 22 years. These job losses have been especially damaging to the state since much of this manufacturing work was in export-based jobs involving the creation of goods for sale outside of the state and the country. There are typically high-employment and output multipliers from job changes in these export industries. Massachusetts ended the 2000-2010 decade with 22,700 fewer construction jobs, a loss of nearly 18 percent of the payroll positions in this industry. The losses in both the construction and manufacturing industries devastated the state's blue-collar workforce, creating enormous labor surpluses and eliminating many jobs that provided entry to the middle class for workers without college degrees.

The finance and insurance sector had been one of the state's key job-generating sectors in the years prior to the 2000-2010 decade. As a result of the 2001 recession, corporate merging and downsizing, the relocation of jobs outside of Massachusetts by some of the state's larger financial service employers, and the impact of the Great Recession of 2007-2009, employment in this sector fell by 16,000, or nearly 9 percent over the decade. The state's information industries, another previous growth sector, also experienced substantial employment losses over the decade. The job losses in these industries have affected more educated workers, including the state's recent college graduates.

A shift-share analysis of payroll employment changes in Massachusetts revealed that the state had negative national share effects in several of its leading industries. The reduced national share of jobs in these industries exacerbated the state's job losses over the decade. Despite having the best-educated workforce in the nation, as measured by the share of its workers with a college degree in 2000, Massachusetts lost competitive advantage in some key industry sectors such as health care, professional, scientific, and technical industries, and finance and insurance. The Commonwealth's performance was not an anomaly. In fact, the best-educated states across the nation were overwhelmingly mediocre performers in job creation and were more likely to rank near the bottom among the 50 states on payroll job growth than to rank near the top. These findings indicate that having a highly educated workforce alone is not sufficient for generating strong job growth. New public and private policies must be sought to boost the competitive advantage of Massachusetts industries and their job generating capacities.

Total civilian employment of Massachusetts residents 16 and older also declined over the past decade, falling by 38,000 or about 1.2 percent.[2] This decline in civilian employment stands in marked contrast to the 310,000 growth in employment from 1979-1988, and the 376,000 gain from 1992 to 2000. The employment decline of 1.2 percent was the 14th worst growth rate among the 50 states and was the first decade since 1940 in which no increase in resident employment took place in our state. The employment/popula-

tion (E/P) ratio of the state in 2010 was only 60.7 percent, a decline of 5 percentage points from its 65.7 percent value back in 2000.

All of the net loss in civilian employment over the decade took place among men. Male employment fell by 81,000 or 5 percent between 2000 and 2010 while total female employment rose by 43,000 or close to 2 percent. The substantial net job losses among men took place during and after the Great Recession of 2007-2009. Male employment in Massachusetts fell by 103,000 from 2007 to 2010, or 6 percent. While males suffered a disproportionate share of the job declines during the Great Recession in nearly all states, in Massachusetts, male job losses accounted for 200 percent of the job declines, the largest share of any state in the country. Wives frequently entered the labor force or increased work hours to compensate for male job losses.

The past decade in Massachusetts also was characterized by very substantial shifts in both employment rates and employment levels by age and educational attainment. The employment/population ratios of persons in each major age group 55 and older increased over the past decade while those of every age group under 55 declined. The younger the age group under 45, the greater was the drop in their E/P ratio over the decade, with those under 30 experiencing double-digit declines in their employment rates. Due to a combination of these dramatic twists in employment rates by age group and large increases in the population level of those ages 55 to 64, the number of employed persons 55 and older in the state rose by 223,000 over the past decade, while the number of employed persons under 55 years of age declined by an extraordinarily large 261,000.

Members of each major educational attainment group in Massachusetts experienced substantive declines in their employment rates over the past decade. However, the percentage point sizes of these employment rate reductions were greatest (in the double digits) for those workers with either no high school diploma or with some completed years of post-secondary schooling but no college degree. Due to a steep rise in the number of persons in the working-age population with a bachelor's or higher degree, the number of employed Massachusetts residents with a bachelor's or higher degree rose by 270,000 or 23 percent, while those with no more than a high school diploma fell by 270,000. In both 2000 and 2010, Massachusetts was the national leader in the share of its employed workforce with either an associate's or higher degree or a bachelor's or higher degree. In 2010, nearly 46 of every 100 employed workers in Massachusetts held a bachelor's or higher degree, yet the state fared very poorly in its job creation performance over the decade.

The decline over the past decade in the employment rates of every age/gender subgroup of Massachusetts adults under age 55 took a substantial toll on the number of persons 16-54 that would have been employed in 2010 if each age/gender subgroup of the population under age 55 had been able to maintain their year 2000 E/P ratios. There would have been another 263,400 persons employed in 2010, including 180,000 males. Given declines in both the E/P ratios of these adults under 55 and a reduction in their ability to secure full-time jobs, the loss of potential full-time employed persons in 2010 was even greater. If each gender/age subgroup of the population under age 55 had been able to maintain their year 2000 full-time E/P ratios, there would have been slightly more than 315,000 additional full-time employed persons under age 55 in 2010, including 215,000 men and 100,000 women. These considerably lower levels of full-time employment reduced both the annual earnings of workers and the annual incomes of families and placed higher numbers of families at risk of income inadequacy problems. The

growth of the middle class was curtailed by these declining full-time employment prospects in Massachusetts.

Labor Market Problems of Massachusetts Workers

The poor job creation performance of the Massachusetts economy over the past decade led to a substantial increase in an array of labor market problems with quite varying impacts on different socioeconomic groups. By the end of the jobs boom in our state from 1992-2000, the aggregate unemployment rate had declined to just 2.7 percent, the fourth lowest unemployment rate among the 50 states and the lowest annual average unemployment rate ever recorded for Massachusetts over the entire 1967-2010 period for which such uniform unemployment data exist.[3]

Unemployment rates increased steadily from 2000 to 2003 as a consequence of the national recession of 2001 and the jobless recovery in our state during 2002 and 2003. The unemployment rate rose approached 6 percent in 2003 before falling back to 4.7 percent in 2007 as the state's labor markets improved. During the Great Recession of 2007-09 and its aftermath, state unemployment rates rose sharply, reaching 8.5 percent in 2010. There were 297,000 unemployed people on an average month in 2010, 3.2 times as many as in 2000 at the end of the labor market boom. Unemployment rates in 2010 varied markedly across educational groups and major occupational groups of workers ranging from lows of under 2 percent for health care practitioners and 3 to 4 percent for those in community/social service and education professions to 10 percent for low level sales workers (cashiers, sales clerks), 14 percent for food prep workers, and 18 percent for construction craft workers.

The nature of state unemployment problems also changed considerably over the decade, with substantial increases in the number of permanent job losers and a steep rise in the average durations of unemployment spells. During the Great Dislocation of 2007-2009, 11 percent of Massachusetts workers were permanently dislocated from their jobs. In 2009 and 2010, there were 170,000 unemployed permanent job losers in the state, nearly five times as many as there were in 2000. In 2009-2010, 58 percent of all the unemployed in Massachusetts were permanent job losers, the 4th highest ratio in the country. Average durations of unemployment also rose sharply over the decade. In 2000, the mean duration of unemployment was only 11 weeks. It rose to 18 weeks in 2007 and to 32 weeks in 2010 and was averaging 35 weeks in the first half of 2011. The 32 week mean duration in 2010 was the highest recorded in the history of the state CPS unemployment series dating back to the late 1960s.[4] In 2010, 42 percent of the unemployed in Massachusetts were long-term unemployed (6 months or longer) and nearly 30 percent had been out of work for more than one year.

The increases in open unemployment during the decade also were accompanied by a very sharp rise in underemployment problems and in hidden unemployment and mal-employment. The number of underemployed persons (i.e., those working part-time but desiring full-time jobs) in 2010 was 171,000, three times higher than it was in 2000. The less-educated, young workers (those under 25), blacks and Hispanics, and service workers/construction workers were especially hard hit by the rise in underemployment. Hidden unemployment (those wanting jobs but no longer looking) was about 60 percent higher in 2010 than it was in 2000 and surged heavily in 2011.

The combined pool of underutilized labor in 2010 was 556,000, nearly three times as high as it was in 2000, and the overall labor underutilization rate in 2010 rose to 15.4 percent, or 2.5 times as high as it was in 2000. These labor underutilization rates varied widely across age, educa-

tional attainment, and household income groups. Across age groups, these underutilization rates varied from highs of 34 percent among teenagers and 29 percent among 20-24-year-olds to 13 percent for those 30 and older. These labor underutilization rates ranged from highs of 38 percent among the lowest income adults (under $20,000 in annual income) to 25 percent for those in low- to low-middle-income groups ($20-40,000), and to a low of 7 percent for those workers in the most affluent households. These enormous disparities in underutilization rates across household income groups helped create part of the rising inequalities in household income.

Trends in the Weekly Earnings of Massachusetts Workers

The annual earnings of workers, the key variable influencing household and family living standards, are determined by their weeks of employment during the year, their average weekly hours of work, and their weekly earnings. Trends in the average weekly earnings of wage and salary workers in Massachusetts over the past decade (2000-2010) and in earlier decades were tracked with two different surveys: the employer based QCEW database on mean weekly earnings of wage and salary workers covered by state and federal unemployment insurance laws and the monthly CPS household survey which collects data on the weekly earnings of employed wage and salary workers residing in Massachusetts.[5] During the decade of the 1990s, especially from 1993 onward, the mean real weekly earnings of Massachusetts wage and salary workers as measured by the QCEW survey increased quite strongly. Mean weekly earnings of Massachusetts workers rose by 30 percent over the decade, more than double the mean weekly wage gain of their US counterparts. The relative size of these wage gains varied quite widely across major industries and geographic regions of the state, and they do not appear to have been widely shared. Those workers at the top of the earnings distribution appear to have fared the best by a wide margin. Their mean weekly wage gain according to the QCEW data was just under 30 percent versus a median weekly earnings gain of only 7 percent for the state's full-time workers according to estimates based on the monthly CPS survey.[6]

During the 2000-2010 decade, however, the mean weekly earnings of the state's wage and salary workers showed basically no change whatsoever. The mean real weekly earnings of wage and salary workers (in 2010 dollars) in Massachusetts firms increased by only $2 or less than .2 percent while they rose by about 4 percent in the nation over the same time period. There was, however, a high degree of dispersion in these weekly wage gains across major industries of the state and key segments of the finance/insurance industry. Of the 18 major private sector industries of the state, real weekly earnings rose in 9 industries, were constant in 3 industries, and fell in the remaining 6. Typically, wages increased the most in high-wage sectors and frequently fell the most in relatively low-wage sectors (retail trade, other services, and accommodation and food services).

The largest wage gains were posted in key segments of the finance and insurance industry sector (investment banking and securities dealing industries). The mean weekly earnings of workers in the investment banking and securities dealing industries increased from $3,519 in 2000 to $5,021 in 2010, a gain of $1,502 or 43 percent versus a mean weekly wage gain of only $2 or well under 1 percent for the average wage and salary worker. In 2000, the mean weekly earnings of workers in the investment banking industry were three times higher than that of the average worker. By 2010, their mean weekly earnings were close to five times as high as the average weekly earnings of workers in the state. In 2010, the mean weekly earnings of these invest-

ment banking workers were 5 times as high as those of workers in educational services and in health care and social assistance, 4 times as high as those of construction workers, 10 times as high as those of workers in retail trade/other services, and 14 times as high as those of workers in accommodation and food services. These inter-industry wage differences were of record-breaking proportions.

Both the size and direction of mean weekly wage changes between 2000 and 2010 varied across counties of the state. Mean real weekly earnings increased modestly in six counties of the state, were unchanged in one county (Franklin), and fell by several percentage points in the remaining five counties. Bristol and Suffolk Counties fared the best with average weekly wage gains of 4 percent, while Berkshire, Essex, and Worcester Counties fared the worst with weekly earnings losses of 3 to 4 percent. By the end of the decade, mean weekly earnings continued to vary widely across counties, ranging from lows of $684 in Franklin County and $750 in Berkshire and Barnstable Counties to highs of $1,300 in Middlesex and $1,470 in Suffolk Counties, a more than 2-1 difference from the highest wage to the lowest wage county. The high mean weekly earnings of workers in firms located in Suffolk County were not accompanied by similarly high weekly and annual earnings of the residents of Suffolk County since many of the high-salary jobs located in the county are held by persons who commute daily into the city of Boston for their jobs.[7]

The median real weekly earnings of employed wage and salary workers who lived in Massachusetts, including both the full-time and part-time employed, increased by 6 percent over the past decade. The rate of growth in their median real weekly earnings was about on par with the growth rate of the 1990s decade, but well below the median weekly wage growth during the 1980s Miracle Decade (14 percent).

Over the past two decades (1989-2010), the structure of weekly earnings by age and educational attainment in Massachusetts has changed markedly. All workers 45 and older experienced very substantial improvements in their median weekly earnings, ranging from 20 percent for those 45 to 54 years old to 52 percent for those 65 and older. A combination of better educational attainment and increased returns to work experience, especially for older women, played key roles in producing this favorable set of weekly wage outcomes for older workers in the state. Among younger workers (18-24 and 25-34 years old), median real weekly earnings declined over this time period while the weekly earnings of those 35-44 years old remained constant. Age gaps in weekly earnings between older workers and younger workers have widened considerably over the past two decades. Similar developments took place across the entire country.[8] These real earnings developments have had a number of adverse consequences on the ability of young adults to form their own households and to marry, and they have contributed to the steep rise in the share of births to young women that take place out of wedlock here in Massachusetts (over 50 percent in recent years).

THERE ALSO HAS BEEN A SUBSTANTIAL SHIFT IN THE WEEKLY WAGE STRUCTURE BY EDUCATIONAL ATTAINMENT

Over the past two decades, there also has been a substantial shift in the weekly wage structure by educational attainment of the employed. Each group of workers with no completed years of post-secondary schooling experienced double-digit declines in their weekly earnings, while those with one to three years of college lost 3 percent of their median weekly wage. Workers with either a bachelor's or higher degree saw their median real weekly earnings rise by 11 percent

and 6 percent, respectively over this period. The relative median weekly wage difference between employed bachelor's degree holders and high school graduates increased by 25 percent over the past two decades, with even larger gaps between the weekly wages of those with bachelor's degrees and those of adults lacking a high school diploma.

The median weekly earnings of those wage and salary workers (16-64 years old) who were either full-time employed or who were underemployed (working part-time but desiring full-time work) increased by only 4 percent over the past decade. Workers were categorized into two age groups (16-34 and 35-64) and four educational groups, ranging from those lacking a high school diploma to those holding a Bachelor's or higher degree. For those workers in the 16-34 age group, median weekly wages declined for each educational group, with double digit declines for every worker group lacking a Bachelor's degree. Among those ages 35 to 64, median weekly earnings also declined over the past decade for every group except those with a Bachelor's or higher degree. In the absence of an educational upgrading of the employed workforce over the past decade and the shift in the age mix of the employed to older age groups with more work experience, the median weekly earnings of the employed in our state would have declined.

THE PAST DECADE HAS BEEN THE WORST PERFORMING IN THE PAST 70 YEARS.

The widening disparities in weekly earnings across age, educational, and occupational groups of workers in Massachusetts have generated increased inequality in the weekly earnings distribution over the past two decades, especially between the top of the distribution (those at the 80th and especially the 90th percentiles) and those at the bottom (the 10th and 20th percentiles). The relative wage gaps from top to bottom of the distribution have increased to historical highs for the post-World War II era and have been a key force in driving inequalities in the annual earnings of Massachusetts workers.

Changes in Massachusetts Household and Family Income During the Past Decade

A key element of the American Dream is the ability of a household or family to achieve a middle-class standard of living. The affluence of the middle class and the size of the middle class is dependent on the growth of median real household and family incomes over time and changes in the distribution of those incomes. Over the past five decades, growth in the prosperity of the average Massachusetts household, as measured by their median real household income, was marked by substantial variability. During most of the Golden Era of the American economy from the 1940s through the early 1970s, median household income in Massachusetts experienced substantial growth. For example, median real household income increased from $39,679 in 1959 to $52,927 in 1969, an increase of 33 percent over the decade. Over the following decade, however, median real household income failed to grow.

During the 1980s Miracle Decade, the Massachusetts economy thrived, creating jobs and increasing the real annual earnings and incomes of most workers and families. The growth in median household income in Massachusetts over the 1979-1989 period was four times higher than the national average (26 percent versus 6 percent). Massachusetts's household income growth ranked second highest among the 50 states, trailing only New Hampshire.

A severe regional recession struck Massachusetts beginning in early 1989 and ending in late 1991. It destroyed a very large number of payroll

jobs and sharply pushed up unemployment. The state created a substantial number of payroll jobs from 1992 through 2000; however, median real household income growth over the entire decade was limited to only 2 percent, and the state's household income growth rate over the 1989-99 decade ranked 13th lowest among the 50 states.

After the longest economic expansion in post-World War II US history from 1992-2000, another national recession set in during early 2001, led by the technology sector's "dot.com" bust. The economic recession was officially declared over in late 2001, but the labor market in Massachusetts did not begin to recover until 2004. The state failed to create any net new jobs over the 2000-2007 period, and median household income fell. The household income decline was not unique to Massachusetts over this period. Only 11 states experienced household income growth of 1 percent or more. Nationally, median real household income declined by nearly 3 percent between 2000 and 2007.

Due to the impacts of the Great Recession of 2007-09 and its early aftermath, the years after 2007 took a substantial toll. During the 2007-2010 period, Massachusetts median real household income declined by 5.4 percent; US median real household income fell by 6.2 percent. The past decade has been the worst performing decade in the past 70 years, with a 6 percent decline in the median real household income in our state.

Massachusetts not only encountered a combination of very low growth in median household income in the 1990s and a deterioration in its median real household income in the past decade, but the state has also experienced widening income inequality between the haves and have-nots. Massachusetts used to be a much more egalitarian state in the 1960s and the 1970s; however, over the past few decades, the state has become increasingly more unequal in the distribution of its household incomes, with a larger share of annual money income concentrated among the most affluent households. In 2009, based on a conservative estimating methodology, slightly over 52 percent of total money income received by households in Massachusetts was concentrated among the top 20 percent of households. Their true share may be as high as 65 percent.[9] Households in the bottom 20 percent of the household income distribution obtained only 2.8 percent of total household money income of the state.

Over the past decade (1999-2009), very few gains were made in boosting the real incomes of most middle class families in the state. The median real income of Massachusetts families stayed basically constant with only a $139 or .2 percentage point gain over this 10-year period.[10] The median real income of Massachusetts families in 2009 was $81,258. Despite little growth in their median real income over this 10-year period, Massachusetts families did fare better than their US counterparts as the median income of US families fell by 5 percentage points over this same time period. Median real family income in the US fell from $64,259 in 1999 to just under $61,000 in 2009. During 2009, the median real family income of Massachusetts families in 2009 was 133 percent of the US average.

The absence of any substantive gain in median real family income in Massachusetts between 1999 and 2009 ranked slightly below its mediocre performance during the 1990s decade, when family income grew by only 3 percent in Massachusetts versus a near 9 percent increase nationally. Changes in median family incomes over the past two decades differed sharply from their experiences during the Miracle Decade of the 1980s. Over the 1979-1989 period, median real family income in Massachusetts increased from $65,800 to just under $78,800, a gain of $13,000 or 20 percent, one of the two best performances in the nation.

Over the past decade, the pattern of changes

in the median real incomes of Massachusetts families varied somewhat by family type, age, and educational attainment. The median incomes of married-couple families improved modestly by about 2.5 percent while those of male-headed and female-headed families with no spouse present fell by 10 percent and 2 percent, respectively. Over the past 30 years, the sizes of the annual income gaps across these three family types have widened considerably. In 2009, the median income of married-couple families in the state was nearly twice as high as that of male-headed families and 2.4 times as high as that of female-headed families.

The real income changes of Massachusetts families over the past decade also varied across age groups. The state's youngest families (those with a head under 30) fared the worst, experiencing a 12 percent decline in their median real income while the incomes of those 30-64 were basically flat, and the median incomes of the more elderly (65 and older) rose by 3 percent. Over the past 30 years (1979-2009), the growth of median family incomes ranged widely across age groups from -8 percent for the youngest families, to 27 percent for those headed by a 30-39-year-old, about 20 percent for those headed by a person ages 40 to 64, and a high of 37 percent for the oldest families (head 65 and older). The deteriorating economic fortunes of young families have made it increasingly difficult for them to enter the middle class and own their own homes.

The income fate of the state's families over the past decade varied substantially by educational attainment. All families headed by an individual with no bachelor's or higher degree experienced double-digit declines in their median incomes between 1999 and 2009 while families with a head holding a bachelor's or higher degree simply held their own. In 2009, the median real incomes of Massachusetts families varied from a low of $36,100 for those families headed by high school dropouts to $61,600 for families with a head who graduated from high school but completed no years of college, to a high of $138,400 for families with a master's or higher degree. The relative income gap between the best and least well-educated groups of families was 4 to 1 in 2009 versus less than 2 to 1 in 1979.

Over the past decade, family income inequality continued to grow in both Massachusetts and the US. Families at the 10th and 20th lowest percentiles of the distribution saw their real incomes decline by about 5 percent between 1999-2009, those in the middle (50th percentile) experienced stagnant real incomes, and most of those families from the 80th percentile on up obtained modest income gains ranging from 2 to 6 percent. Over the past 30 years (1979-2009), the changes in the real incomes of Massachusetts families have varied enormously along the distribution. Families at the 10th and 20th percentiles captured real income gains of 6 to 11 percent, those in the middle obtained a 24 percent gain, the 80th percentile received a 38 percent gain, and those at the 95th and 99th percentiles rose by 56 percent and 129 percent, respectively.

These widening gaps in family incomes between the top and bottom of the income distribution in Massachusetts have led to a growing concentration of income at the top. In both 1999 and 2009, the top quintile (20 percent) of families obtained slightly over 47 percent of all family income in the state while the bottom quintile captured only 4 percent. The top decile of families alone (31 percent) obtained as much income as the bottom half of all families combined. The top decile's share has ranked 10th highest in the nation in recent years. Back in 1959, the income share of the top quintile was 5 times as high as that of the bottom quintile of families; however, by 2009, the top quintile garnered 12 times as much income as the bottom quintile (47 percent vs. 4 percent), a substantial rise in inequality.

This widening degree of inequality in the distribution of family incomes in Massachusetts

and the US over the past few decades is attributable to a variety of demographic, family formation, marriage behavior, employment, and annual earnings developments. The decline in marriage among younger adults, especially those with less schooling and lower incomes, the rising share of single-parent families, often headed by individuals with limited formal schooling and earnings power, and the increased assortative mating of married-couple families in which college-educated adults marry others with similar education and earnings backgrounds have led to a widening dispersion in the annual earnings of such families. Very large gaps in the annual incomes of families with children have substantial negative consequences for those children in the lower end of the distribution, hampering their cognitive and educational achievement.

Findings on the Subjective Views of Massachusetts Adults on Their Economic Well-Being, Their General Life Satisfaction, and Their Attainment of the American Dream

The bulk of the analyses of the labor market experiences, labor market problems, and earnings and incomes of Massachusetts workers and their families were based on objective data. To identify how well state residents believe they are faring economically, their perceived economic status relative to their parents, their general life satisfaction, and their success in achieving the American Dream, we analyzed findings of a variety of public opinion surveys conducted by MassINC and by national polling organizations.

By a large margin (51-10), respondents in Massachusetts stated that it had become more difficult rather than easier over the past decade to afford the lifestyle they desired for themselves. While these results held true in each major age group, the youngest respondents (those under 30) were the most likely to report that it had become more difficult (57 percent) to afford the lifestyle they wanted for themselves. Only 8 percent of them claimed that it had become easier to do so.

By a two to one margin (47 percent vs. 24 percent), Massachusetts residents felt that their current financial status was better than that of their parents at the same age. In each age group, respondents were more likely to report faring better rather than worse than their parents; however, the relative size of these differences rose steadily with age, being highest by far for those 60 and older, where those believing they were better off exceeded those feeling worse off by a margin of nearly 5 to 1.

Three recent MassINC public opinion polls have queried respondents as to whether the next generation will be better off. A considerably higher share of respondents reported that the next generation would be worse off than better off (45 percent vs. 19 percent) while one-third believed the next generation would be just as well off as they are now. The older the age group of respondents, the more likely they were to believe that the next generation would be worse off economically. Similar findings have prevailed in a variety of national polls. In a spring 2011 public opinion poll by Gallup, a majority of respondents for the first time in the past 28 years believed that today's youth would be unlikely to achieve the same standard of living as their parents.[11] Again, older Americans were the most likely to hold these views. In a separate AP-VIACOM survey of young adults (ages 18 to 24) in March 2011, much higher fractions of respondents felt that it would be harder for them to raise a family, earn enough to support their desired lifestyle, and buy a house than it was for their parents. This growing pessimism about the economic fate of the next generation in our state and the nation should be given serious consideration by national, state, and local public policy officials. The steep deterioration in teen and young labor

markets and the living standards of young families provide empirical support for the views of the state and American public.

In a July 2011 MassINC survey, slightly under half of the state's adults (18 and older) believed that they had achieved the American Dream. The fraction of respondents claiming that they had achieved the American Dream varied widely across household income, age, educational attainment, and geographic areas of the state. Those individuals residing in the highest income households ($150,000 or more) were more than 4 times as likely to have obtained the American Dream than those in the lowest income category (under $25,000). The share of respondents who reported achieving the American Dream rose steadily with their age and educational attainment. Residents of the outer Boston suburbs (66 percent) were the most likely to have obtained the American Dream, while residents of Boston and the inner suburbs (39 percent) were the least likely to have done so.

Survey findings from the Behavioral Risk Factor Surveillance System of the Centers for Disease Control for 2009 and 2010 were used to examine the general life satisfaction ratings of Massachusetts residents ages 18 to 74. Overall, a substantial majority (90 percent) of Massachusetts residents expressed some positive degree of life satisfaction with, 45 percent reporting themselves as "very satisfied" with life. While this share was slightly above that of the US (43 percent), the state only ranked 35th highest among the 50 states on this measure despite its higher family incomes, higher levels of educational attainment, and better physical/mental health of its adult population. The fraction of state residents reporting that they were "very satisfied" with life varied across household income, marital status, employment, educational attainment, and health status groups. The more affluent, married, college-educated, those in better physical health, and older individuals (60+) were significantly more likely to be "very satisfied" with life in general than their respective counterparts.[12] Being unemployed, low-income, less educated (no high school diploma), and not married had substantial negative impacts on the life satisfaction of both Massachusetts and US residents. Widening inequalities in family income and increasing disparities in marital status and physical/mental health well-being across income groups are reducing overall levels of life satisfaction and the ability to enter the middle class.

The Public Policy Implications of the Above Findings

The past decade in Massachusetts was characterized by a low rate of overall economic growth as measured by GSP per capita, declines in total payroll jobs and the number of employed residents, rising levels of unemployment, underemployment and other forms of labor underutilization, a general absence of growth in the average real weekly wages of workers, declines in median real household income, and widening family and household income inequality. The American Dream was put on hold in both Massachusetts and the US, and the public's concerns about the economic fate of the next generation have grown.

What can be done to reverse these developments and put the state back on track in boosting the affluence of the average middle class family and broadening the number of families that can enter its ranks? A wide array of economic growth, employment, wages/earnings, and family formation outcomes will be needed to restore broad-based prosperity to the Commonwealth in the current decade. There are a number of public policy actions at the federal, state, and local level that could help facilitate the attainment of several of these goals.

First, there must be a sustained acceleration of economic growth in the state. The aggregate level of real output in Massachusetts rose far

too slowly in the past decade to create any net new job opportunities for state residents. Much higher levels of real output are needed to encourage the hiring of new workers, reduce underemployment and hidden unemployment problems, and provide more year-round, full-time job opportunities to state residents. Higher levels of national economic growth are also needed to boost the demand by other states for the goods and services produced by Massachusetts industries. Our state's congressional representatives and US senators should provide support for key components of the Obama Administration's proposed American Jobs Act of 2011, especially the grants for infrastructure spending, the retraining and hiring of the long-term unemployed, job creation for teens/young adults and lower-income older adults, and the extension of payroll tax cuts for workers to boost their ability to consume additional goods and services and increase the demand for output.

Second, job creation efforts need to be considerably strengthened. Our current payroll employment levels continue to remain well below their peak in the first quarter of 2001. The work of the current Massachusetts Jobs Commission will hopefully provide further policy guidance in this area. There are a number of strategies the state and local government can pursue to help improve job creation. They include further experimentation with the use of state job tax credits to firms who expand their payrolls, providing training grants to firms through the Workforce Training Fund and the Workforce Competitiveness Training program to support their hiring of new workers to address skill shortages, the active marketing of the Obama Administration's proposed tax credits to firms for hiring members of the long-term unemployed, and the expansion of current programs to boost the employment of high school youth in the private sector through the state-funded Connecting Activities program. Employment of the state's and nation's teens and young adults (20-24) has been substantially curtailed over the past decade, and the limited work experience of these youth as they enter their late teens and early 20s will adversely affect their employability and earnings.

Third, while the state's college graduates tend on average to outperform their less-educated counterparts on every major employment, wage, and earnings outcome, younger associate degree and bachelor's degree holders (under 30) have been experiencing a rising incidence of mal-employment problems. Employment in jobs that do not require a college degree reduces their level of productivity, holds down the level of output, and decreases their weekly wages and annual earnings. Lower earnings in turn reduce their ability to form independent households and to marry. Mal-employment of recent college graduates is also likely to lead to domestic outmigration of these younger, highly mobile workers, especially those who initially migrated to Massachusetts to attend college. All colleges and universities across the state should be strongly encouraged to help students obtain paid internships and cooperative education opportunities while in college and job placement assistance upon graduation. In-school work experience in jobs closely related to their majors will facilitate their ability to move seamlessly into college labor market jobs upon graduation and remain working in Massachusetts.

Fourth, less-educated male adults, both native born and immigrant, have been experiencing increasing difficulties in securing paid employment, especially year-round, full-time jobs, that have pushed down their annual earnings and their ability to marry and stay married. Many of these adults are in need of further education, literacy/numeracy training, and occupational training to improve their future employability and earnings. There is a clear need for more integrated program efforts between the adult basic education system, the community college system, and the state's workforce development system to allow

adults to move more seamlessly from one system to another and to receive the needed combination of services to bolster their employability and earnings. More careful follow-up tracking and evaluation of the effectiveness of these program efforts is needed.

Fifth, the real weekly wages and annual earnings of Massachusetts workers need to be improved, especially for those in the middle and bottom of the wage distribution. A variety of efforts will be needed to boost real weekly earnings, including productivity improvements, a strengthening of the link between productivity gains and real weekly earnings gains, and increased hours of work among the underemployed. During the last decade, the link between productivity growth and real wage growth was essentially broken. Evidence from earlier decades suggests that both strong employment growth and low unemployment are needed to guarantee that workers will receive some compensation benefits from higher productivity. Workers' bargaining power is substantially reduced in a high unemployment environment. Restoring this link is also critical to the maintenance of the belief that hard work will result in economic success and achievement of the American Dream. While a majority of Americans still believe that "working hard" will increase opportunities to get ahead in life, there has been a decline in the fraction of adults expressing such beliefs, with an even steeper decline in the share of adults who believe that the link between hard work and success is still true for America's working class.[13]

Sixth, median real family incomes failed to grow in both Massachusetts and the US in the past decade, following a period of very modest growth in the 1990s here in our state. Declining annual earnings of many middle-income family heads was a key factor, but declining incomes in the lower half of the income distribution have also been generated by a declining rate of married-couple family formation, especially among adults lacking college degrees. The decline in marriage and the continued rise in single-parent family formation have contributed to widening family income inequality, a rise in the incidence of low income/poverty problems and widening disparities in the economic and social well-being of children in families.[14] If unchecked, these demographic trends will place strict limits on the growth of the middle class in Massachusetts and reduce the future attainment of the American Dream.

The marriage rates of young men and women in the US and Massachusetts are strongly tied to their annual earnings potential and their educational attainment.[15] Public policies to reduce high school dropout rates, increase post-secondary attendance and college completion, expand training and apprenticeship opportunities for young adults without college degrees, and increase tax incentives for marrying and staying married can contribute to the growth in marriage and family stability with favorable long-term effects for children.[16]

All of the above efforts, if successful, could help restore broad-based prosperity in the state of Massachusetts over the coming decade similar to developments in the Golden Era (1947-73) and the Miracle Decade of the 1980s. Coordinated actions on many different fronts will be needed to achieve this goal. The restoration of income growth and a strengthening of married couple family formation should help improve the future affluence of the state's families, broaden the middle class, and assist in expanding the fulfillment of the American Dream here in Massachusetts.

Endnotes

1 As noted in Chapter 9, both nationally and in Massachusetts, a relatively high share of the public have recently held pessimistic views regarding the ability of the next generation to improve upon the living standards of the current generation.

2 This level of civilian employment decline was smaller than the payroll employment drop for three reasons: There was a small increase in self employment over the decade, more Massachusetts residents found jobs outside of the state, and multiple jobholding declined (a person who loses one of two simultaneously held payroll jobs will reduce the payroll employment count by one job but leave the civilian employment count unchanged).

3 These unemployment rate estimates are based on the monthly Current Population Survey. State employment and unemployment estimates based on the CPS survey data back to the late 1960s.

4 During the very high unemployment year of 1992, the mean duration of unemployment was only 23 weeks.

5 Both weekly wage databases exclude the self-employed, and the QCEW database also excludes the earnings of independent contractors. While the CPS household survey contains detailed demographic, socioeconomic, and occupational data on the characteristics of the employed, the QCEW data only provides information on the industries of the employers and their geographic locations. We cannot analyze the earnings of individual workers with published QCEW data.

6 The existence of a large differential between the mean and median wage gains indicates a high degree of inequality due to high earnings gains at the top of the distribution.

7 The total number of payroll jobs in the city of Boston in 2010 was 70 percent higher than the number of employed residents of the city.

8 For evidence on changes in the weekly earnings and annual earnings of young adult workers in the US over the past few decades, see Andrew Sum, Ishwar Khatiwada and Joseph McLaughlin, "Trends in the Weekly and Annual Earnings of Young Adults Under 30 in the US, 1979-2009," Children's Defense Fund, Policy Research Brief Number Two, September 2011.

9 An analysis of the annual incomes of tax filers reported to the Massachusetts Department of Revenue in 2008 shows that the top 20 percent captured nearly 65 percent of all income reported to DOR with the top decile responsible for most of this share.

10 Family households accounted for approximately 63 percent of all households in the state in 2009.

11 See Amanda Fairbanks, "Youth Optimism Hits Historic Low, New Poll Reveals," *HuffingtonPost.com*, May 4, 2011.

12 Persons reporting themselves as only in "fair or poor health" or as experiencing bad mental health days in 16 or more of the past 30 days were significantly more likely to report themselves as dissatisfied with life.

13 See Sandra L. Hanson and John Zogby, "The Polls-Trends: Attitudes About the American Dream," *Public Opinion Quarterly* 74(3) (2010).

14 For evidence on these trends for young families in the US, see Sum and Khatiwada (2011).

15 See Andrew Sum, Ishwar Khatiwada, Sheila Palma, "No Country for Young Men: Deteriorating Labor Market Prospects for Low Skilled Men in the United States," *The Annals of the American Academy of Political and Social Science* 635 (2011).

16 For recent evidence on the role of family structure on the economic mobility of children, see Thomas Deleive and Leonard Lopoo, "Family Structure and the Economic Mobility of Children" (Washington, DC: Pew Charitable Trust, 2010).

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