MASSACHUSETTS ECONOMIC OUTLOOK

Executive Summary and Highlights

- According to estimates from MassBenchmarks, Massachusetts real gross domestic product grew at a 3.4% annual rate in the first quarter, slowed to a 1.7% pace in the second quarter, and improved to 2.8% in the third quarter.

- National and state economic growth this year has been restrained by sequestration spending cuts and the payroll tax increase. Fourth quarter growth this year will be negatively impacted by the government shutdown and the inconclusive solution to the spending and debt ceiling crises.

- The bright spot this year has been the housing market. Statewide, sales, prices and permits have exhibited strong growth. The stain on the state's economy this year has been unemployment. The unemployment rate has risen one-half of a percentage point since December, from 6.7% to 7.2% in August.

- The effects of the government shutdown will delay the acceleration in employment growth in the fourth quarter. In 2014, job growth is expected to accelerate each quarter, with fourth quarter employment 1.4% higher than the fourth quarter of 2013. In 2015, this acceleration will peak, with employment growing 1.9% in 2015. For the remainder of the forecast period, the pace of job gains will diminish as a result of the demographic aging of the workforce. In 2016 and 2017, employment is expected to grow at an annual average of only 1.1%.

- Total nonagricultural employment is projected to grow 7.0% through 2017, at an average annual rate of 1.4%. The number of jobs regained its pre-recession peak in the first quarter of this year. By the end of next year, employment is expected to surpass its all-time high prior to the dot-com bust in 2001.

- Over the forecast period, from the second quarter of 2013 to the fourth quarter of 2017, real gross state product is expected to grow at a 2.9% annual average rate, while real personal income is expected to grow at a 3.6% annual average rate.

- The state's unemployment rate is expected to slowly improve, falling from 7.2% in August of 2013 to 5.2% in 2017.

- Employment in construction; professional and business services; leisure and hospitality; information; and education and health services will grow faster than overall employment.

- House prices have been rising for seven quarters, and by the end of the forecast period—12 years after the peak in 2005—prices are expected to finally reach their prior peak level.

- Because income growth will exceed housing price appreciation over the forecast period, houses will be as or more affordable than they were in the mid-1990s and early 1980s.

- Boston is by far the largest metropolitan area in the region, and its labor market – that is, the geographic area from which it draws a significant number of workers – stretches past

Route 495 into the Worcester area, southern New Hampshire, and Rhode Island. Income earned in the metro area supports tourism, real estate markets, and consumer spending throughout the region.

- Like most other metro areas large and small in New England and the rest of the nation, Boston's economic ties through trade are nation-wide and world-wide. This trade is concentrated in several technology, science-based, and knowledge-based goods and services for which Boston has a relatively high workforce concentration. Given its size, it benefits from economies of agglomeration.

- In terms of output, Boston's share of regional gross domestic product has increased in recent years. According to the U.S. Bureau of Economic Analysis, the ratio of Boston's GDP to New England's GDP rose from 39.0% to 40.4% from 2001 to 2012.

- Because of its highly-educated labor force, productivity in the Boston metro area is significantly higher than in New England as a whole. Furthermore, not only is productivity higher, but in recent years productivity *growth* has been faster. Relative to New England as a whole, Boston's productivity was 9.7% higher in 2001, and 13.6% higher by 2012.

- Boston's higher rate of productivity growth was probably not simply a recent trend, and is related to the faster than average growth in educational attainment in the Boston MSA. In a study of 118 metropolitan areas in 1970 and 2000, Boston's rank in terms of the percent of the adult population (25 or older) with a four-year college degree rose from 17th in 1970 (at 14.6%) to 4th in 2000 (at 38.1%).

Recent Economic Performance

The state's economy started the year with a bang in the first quarter, which quickly changed to a whimper in the second quarter, and seems to have improved somewhat in the third quarter. According to estimates from MassBenchmarks, Massachusetts real gross domestic product grew at a 3.4% annual rate in the first quarter, slowed to a 1.7% pace in the second quarter, and – according to a very preliminary estimate of third quarter growth, improved to 2.8% in the third quarter.[1] Based on tax revenues, we estimate that, in the third quarter, nominal wage and salary income rose at an annual rate of 2.9%, while nominal spending on items subject to the regular sales tax and automobiles rose at a 6.5% annual rate. We expect that state payroll employment rose at an annual rate of 0.7% in the third quarter, and that the unemployment rate will fall a notch to 7.1% in September.[2]

National and state economic growth this year has been restrained by sequestration spending cuts and the payroll tax increase. Fourth quarter growth this year will be negatively impacted by the government shutdown and the inconclusive solution to the spending and debt ceiling crises.

The bright spot this year has been the housing market. Statewide, sales, prices and permits have exhibited strong growth. Relative to a year ago, single family home sales have risen by 17.2%

[1] This estimate is as of November 5. It will be revised on November 7 with the release of U.S. GDP growth for the third quarter, which is projected to be 2.0% according to the Wall Street Journal's October survey of economists.

[2] The employment estimate is conditioned on the U.S. employment report for September, and the unemployment rate estimate is based on information from the September Current Population Survey for Massachusetts.

(September, Massachusetts Association of Realtors); prices have risen by 12.1% by one measure (September, single family homes, Massachusetts Association of Realtors) and by 6.3% by another (August, S&P Case-Shiller home price index for Boston); and single family building permits have risen 30.0% (August, Census Bureau).

The stain on the state's economy this year has been unemployment. The unemploy-ment rate has risen one-half of a percentage point since Decem-ber, from 6.7% to 7.2%. The rise has been concentrated among – but not limited to – minorities, youth, and those with less than a high school education.[3]

The Outlook: Expansion – Finally – to Solidify in 2014

So far this year has been uneven in terms of economic performance, like a poorly-tuned car that alternately surges and sputters. The unevenness has in-volved the surge of a private economy ready to accelerate driven by pent up demand, only to sputter, drawn back by fiscal drag and uncertainty over federal spending. Once we get through – if we get through – this period, and the fiscal drag on growth is diminished, growth should accelerate moderately and more smoothly in 2014 and 2015.

On a fourth-quarter to fourth-quarter basis, Massachusetts payroll employment was expected to grow 1.5% in 2013. That no longer seems possible, given what is likely to be a somewhat smaller gain in jobs in the third quarter than projected, and the effects of the government shutdown on fourth quarter hiring. Employment growth will likely be closer to 1.0%. In 2014, job growth is expected to accelerate each quarter, with fourth quarter employment 1.4% higher than the fourth quarter of 2013. In 2015, this acceleration will peak, with employment growing 1.9% in 2015. For the remainder of the forecast period, the pace of job gains will diminish as a result of the demographic aging of the workforce. In 2016 and 2017, employment is expected to grow at an annual average of only 1.1%.

Growth in state income and output will essentially follow the same profile as employment, with relatively slow growth in 2013, followed by an acceleration in 2014 and 2015, and then a deceleration in 2016 and 2017. Over the forecast period, from the second quarter of 2013 to the fourth quarter of 2017, real gross state product is expected to grow at a 2.9% annual average rate, while real personal income is expected to grow at a 3.6% annual average rate. Massachusetts will continue to have higher productivity than the nation as a whole, with wage and salary income per worker about 16% higher than the nation as a whole by the end of 2017.

The state's unemployment rate is expected to slowly improve, falling from 7.2% in August of 2013 to 5.2% in 2017. The unemployment rate was 4.6% in the first quarter of 2008, just as the recession hit.

Employment by Sector

By the end of the forecast period, in 2017, the industrial structure of the state's economy will look significantly different from the one that preceded the recession. This is due to long-term trends in demand in the mix of goods and services, the comparative advantages and disadvantages of the

[3] This is based on 12-month moving averages from the Current Population Survey for Massachusetts through September.

state's economy in supplying the nation and the world with products and services, and technological change. Business cycles often accelerate the timing of these changes.

At one extreme, the number of jobs in education and health services is expected to be 19.9% higher by the end of 2017 than in the beginning of 2008, while at the other extreme, the number of jobs in manufacturing is expected to be 13.2% lower. Total nonagricultural employment is projected to be 7.0% higher, with the number of jobs already having reached its pre-recession peak in the first quarter of this year. By the end of next year, employment is expected to surpass its all-time high prior to the dot-com bust in 2001.

Leisure and hospitality; and professional and business services will also comprise higher shares of the economy in 2017, with employment 18.3% and 15.4% higher than before the recession respectively.

Information and other services will comprise roughly the same share of jobs as before the recession, while construction and government will comprise a slightly lower share. Jobs in these latter two sectors are expected to be 3.0 and 1.3% higher than before the recession, respectively.

Trade, transportation, and utilities; and financial actives will have slightly fewer jobs than before the recession, lower by 1.2% for trade, transportation, and utilities; and by 2.5% for financial activities. Manufacturing's share of jobs will remain steady at current levels, but the sector will not regain the jobs lost in the recession. Employment by the end of 2017 will be 13.2% below pre-recession levels.

Much of the changes in the relative share of super sectors are due to differential rates of job loss during the recession. For example, education and health care continued to grow throughout the recession, while construction lost 22% of its jobs, manufacturing lost 13% of its jobs, and professional and business services lost nearly 8% of its jobs.

Over the four and one-half year forecast period, overall payroll employment is projected to expand at an annual average rate of 1.4%, which is significantly higher than in the prior expansion (2004q1-2008q1), in which employment growth was 0.9% per year on average. Employment in construction, professional and business services; leisure and hospitality; information; and education and health services will grow faster than overall employment, with average annual growth rates of 3.9%, 2.6%, 2.2%, 1.8%, and 1.8% respectively. Note that, even with relatively much higher rates of growth than overall employment, construction employment by the end of 2017 will have a slightly smaller share of total employment than before the recession. Employment growth in the remaining sectors will lag that of overall employment. The number of jobs in financial activities is expected to grow moderately slower than overall employment, at a 1.2% annual average pace. The remaining sectors: other services; trade, transportation, and utilities; manufacturing; and government, are expected to grow substantially slower, at annual average rates of 0.6%, 0.5%, 0.2%, and 0.1% respectively.

Housing

The residential housing market is on its way back. This has been the worst housing market for Massachusetts since the Great Depression of the 1930s. Although it does not approach the severity of that time, when prices fell in half and the housing slump – the period from the peak before the crash to when the price level attained its former peak – lasted roughly 20 years, this housing slump is significantly worse than the one in the late 1980s and early 1990s. On that occasion, the median

price (as measured by the National Association of Realtors) fell 11% between the second quarter of 1988 and the first quarter of 1993, and the slump lasted 9 years.[4]
This time, prices fell 25% between the third quarter of 2005 and the first quarter of 2009.[5] Since then sales and prices began to rise in response to the homebuyer credit program, but after that program ended the market weakened. Prices have been rising for seven quarters now, and by the end of the forecast period – 12 years after the peak in 2005, prices are expected to finally reach their prior peak level.

All three basic measures of the health of the housing market have shown significant improvement over the last year. Prices have been rising steadily, sales have increased substantially, and most importantly – because this is where "the rubber hits the road" for the housing market, housing permits have been trending upward.

The near-term slowdown in economic growth is expected to restrain price growth somewhat over the remainder of the year and into the beginning of next. Over the forecast period, home price appreciation rates are expected to be most, at an annual average of 2.1% per year. Sales are already at pre-bust levels attained in 2004. They are expected to remain high in 2014, and then decline somewhat over the remainder of the forecast period. Permits are expected to approach pre-recession levels by mid-2015, and then to taper off a bit.

There is an upside to the housing slump. It has made houses more affordable for new homeowners, and therefore has lowered the cost of living. One measure of affordability is the median house price to per capita income ratio. At the peak of the housing market, this measure reached 8.5. It is now at about 6.0, and is expected to continue to fall throughout the forecast to 5.3 by the end of 2017. At this level, houses will be as or more affordable than they were in the mid-1990s and early 1980s. Housing will still be relatively more expensive in Massachusetts than in the rest of the country, but not so expensive that it should lead to the same out-migration pressures that households experienced in the last expansion.

Boston's Role in the New England Economy

The main role of Boston in the region's economy is simply "being there". Because inter-region and inter-city trade data are hard to come by, it is difficult to tell if the interconnections between Boston and the rest of New England have strengthened or diminished over time. However, it is by far the largest metropolitan area in the region, and its labor market – that is, the geographic area from which it draws a significant number of workers – stretches past 495 into the Worcester area, southern New Hampshire, and Rhode Island. Income earned in the metro area supports tourism, real estate markets, and consumer spending throughout the region.

Like most other metro areas large and small in New England and the rest of the nation, Boston's economic ties through trade are nation-wide and world-wide. This trade is concentrated in several technology, science-based, and knowledge-based goods and services for which Boston has a relatively high workforce concentration. Given its size, it benefits from economies of agglomeration. For example, its comparative advantage in developing new medical devices is possible because universities, hospitals, information technology, biotechnology, electronics, and

[4] For the Boston metro area, the Case-Shiller home price index fell 15.9% between March 1989 and January 1992, and the slump lasted eight years.
[5] For the Boston metro area, the Case-Shiller home price index fell 17.5% between November 2005 and April 2009.

manufacturing companies all provide key inputs into the development and production of new products.

In terms of output, Boston's share of regional gross domestic product has increased in recent years. According to the U.S. Bureau of Economic Analysis, the ratio of Boston's GDP to New England's GDP rose from 39.0% to 40.4% from 2001 to 2012.[6] It declined in the "dot-com" recession of 2001-2002, to 38.3% in 2004, but then began to rise, accelerating in the last recession. Both the relative fall and rise are related to the metro area's technology sectors. Information technology was hit hard in the prior recession, but Boston fared better than the rest of the region and the country as a whole in the last recession because of its diversified technology and knowledge-based economy.

Because of its highly-educated labor force, productivity in the Boston metro area is significantly higher than in New England as a whole. Furthermore, not only is productivity higher, but in recent years productivity *growth* has been faster. As measured by GDP to payroll employment, real output per worker rose from $100,800 in 2001 to $120,300 in 2012.[7] Relative to New England as a whole, this productivity measure for Boston was 9.7% higher in 2001, and 13.6% higher by 2012.

Boston's higher rate of productivity growth was probably not simply a recent trend. This measure of productivity growth has been higher for Massachusetts than the nation as a whole for most of the past several decades, and is probably related to the faster than average growth in educational attainment in the Boston MSA. In a study of 118 metropolitan areas in 1970 and 2000, Boston's rank in terms of the percent of the adult population (25 or older) with a four-year college degree rose from 17th in 1970 (at 14.6%) to 4th in 2000 (at 38.1%).[8] In this three-decade period, there was a slight divergence in the level of educational attainment among MSA's. In other words, metro areas with higher initial levels of educational attainment tended to increase the proportion of their adult population with a college education faster than those areas with initial lower levels of educational attainment. The productivity figures for Boston vs. New England for the most recent 12 years suggest that this divergence may have continued.

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[6] BEA's annual GDP accounts for metropolitan areas begin in 2001. The Boston MSA used here is the Boston-Cambridge-Quincy, MA-NH Metropolitan Statistical Area (FIPS code: 14460).
[7] In 2005 dollars.
[8] In 2000, the top four, in order with highest first, were Washington D.C., Madison WI, San Jose CA, and Austin TX. Calculations by the author.