MASSACHUSETTS ECONOMIC OUTLOOK

Executive Summary and Highlights

- The Massachusetts economy is in the fourth year of the expansion that began in the summer of 2009. During this expansion, real gross state product has grown at a 2.9% average annual rate, and payroll employment has grown at a 1.3% average annual rate. Payroll employment surpassed its pre-recession peak in January.
- Massachusetts has grown faster than the U.S. as a whole during this expansion. The U.S. annual average rate of growth of real gross state product was 2.0%, while the U.S. annual average rate of growth of payroll employment was 1.2%.
- The labor market has improved markedly since the recovery began. In addition to the job gains cited above, the state's unemployment rate fell from a peak of 8.7% in December 2009 to 6.4% in March.
- Nevertheless, unemployment and underemployment remain a problem, especially for youth, and those without a college education.
- The housing market is finally on an upward trend, with increases in prices, sales, construction, and construction employment.
- Growth in the Massachusetts economy is expected to slow somewhat from its surprisingly strong first quarter, and then to accelerate steadily next year. Growth in both the state and the nation is being restrained by fiscal policy, due to the social security tax increase and sequestration spending cuts.
- On a fourth-quarter to fourth-quarter basis, Massachusetts payroll employment is expected to grow 1.0% in 2013. In 2014, job growth will accelerate to 1.6%, and will average 2.2% in 2015, in response to the satisfaction of pent-up consumer demand. As this demand gets satisfied, the pace of growth will return to "normal" levels in 2016, and then slow further as baby-boomers retire and slow labor force growth.
- Over the five-year forecast period, overall payroll employment is projected to expand at an annual average rate of 1.5%, which is significantly higher than in the prior expansion (2004q1-2008q1), in which employment growth was 0.9% per year on average.
- Growth in state income and output will essentially follow the same profile as employment, with relatively slow growth in 2013, acceleration in 2014 and 2015, and then a deceleration in 2016 and 2017.
- Employment in construction, professional and business services; leisure and hospitality; information; and education and health services will grow faster than overall employment, while employment in financial activities; other services; government; trade, transportation, and utilities; and manufacturing, will grow more slowly than overall employment.
- Although growth in the housing market may slow over the remainder of the year, activity will pick up once the economy is through its soft patch. Housing prices are expected to grow between 3 and 4% per year for 2014-2017. Sales are expected to be 30% higher in 2014 than they were in 2012. Permits are expected to reach pre-recession levels by the end of 2014.
- Massachusetts was once the China of textiles, and was also a major producer of shoes and paper. According to Bureau of Labor Statistics data going back to 1939, Massachusetts manufacturing employment peaked at 800,900 in 1943. Today, with 250,100 workers (as of March), the

industry is much smaller, but it is still a large sector that employs 8% of the state's workforce. It is also much different, concentrated in the production of computers and electronic products, fabricated metal products, food processing, and machinery.

- The sector provides good jobs at good wages. Average annual wage and salary income per worker in 2010 was $75,202 in manufacturing versus $54,740 for all Massachusetts payroll workers.
- The Massachusetts manufacturing workforce is more highly educated than the country's manufacturing sector as a whole. Almost 39% of the state's manufacturing workforce had a Bachelor's degree or higher in 2010, versus 26% for the U.S. as a whole.
- The long sectoral decline in the number of manufacturing workers may be over. We are projecting employment in the sector to expand modestly over the next five years, at an average annual rate of 0.4%.
- There will be as many as 95,000 to 100,000 job vacancies in the state's manufacturing sector over the next ten years, due mainly to retirements of existing workers. Will the state's education system have the capacity and the quality programs needed to supply the future manufacturing workforce?

Recent Economic Performance

The Massachusetts economy is in the fourth year of the expansion that began in the summer of 2009. During this expansion, real gross state product has grown at 2.9% average annual rate, and payroll employment has grown at a 1.3% average annual rate.[1] According to the payroll survey, payroll employment surpassed its pre-recession peak in January.

Massachusetts has grown faster than the U.S. as a whole during this period. The U.S. annual average rate of growth of real gross state product was 2.0%, while the U.S. annual average rate of growth of payroll employment was 1.2%.[2]

The Massachusetts economy was particularly strong in the first quarter of this year. Payroll employment in the first quarter grew at a 2.9% annual rate over the fourth quarter of last year. Wage and salary income grew at a stunning 19.9% annual rate in the first quarter, as estimated from state withholding taxes.[3] A significant part of this income growth may have come from bonuses. Spending on items subject to regular and motor vehicles sales taxes grew at an annual rate of 11.6% in the first quarter. The MassBenchmarks estimates that first quarter real gross domestic growth for Massachusetts was 3.9%, versus 2.5% for the U.S.

[1] These growth rates are based on Moody's Analytics' estimates of real gross state product growth from the first quarter of 2009 through the first quarter of 2013, and the Massachusetts Division of Employment and Training's estimate for payroll employment from October 2009 to March 2013.

[2] These growth rates are based on the Bureau of Economic Analysis's estimates of U.S. real gross domestic product from the first quarter of 2009 through the first quarter of 2013, and the Bureau of Labor Statistic's estimate of payroll employment from October 2009 to March 2013.

[3] This assumes that $80 million in December withholding taxes were shifted from January and February due to expectations about changes in federal tax rates. This amount was added to actual January and February withholding tax revenues to estimate wage and salary income for the first quarter. If $40 million were shifted instead of $80 million, then the estimate for the first quarter annualized growth in wage and salary income would have been 7.1% instead of 19.9%.

The labor market has improved markedly since the recovery began. In addition to the job gains cited above, the state's unemployment rate fell from a peak of 8.7% in December 2009 to 6.4% in March. The U.S unemployment rate fell from 10.0% in October 2009 to 7.5% in April. Nevertheless, unemployment and underemployment remain a problem, especially for youth, and those without a college education.

One measure of labor market health that is not subject to the problems related to the definition of the labor force is the employment rate, which is simply the proportion of the working age population (those 16 years of age or older) who are working. According to the Current Population Survey, the employment rate dropped from 3.7 percentage points from its pre-recession peak to its trough in the recession, from 63.9% of the working age population to 60.9%.[4] Since then it has only risen 0.7 percentage points to 60.9% in March, so it remains 3.0 percentage points below its pre-recession level. For working age youth under 25, the employment rate in March was 46.9%, 8.8 percentage points below its pre-recession peak. For those with only a high school diploma, it was 53.4%, 5.9 percentage points below its pre-recession peak; and for those with less than a high school diploma, it was only 28.3%, 10.5 percentage points below its pre-recession peak. On the other hand, for those with a bachelor's or higher degree, the employment rate was 76.1%, 1.0% below its pre-recession peak.

Rising home prices, along with a strong stock market and steady job and income growth has restored household wealth and enabled households to begin exercising pent-up demand for consumer durable spending that was put on hold earlier in the recovery. The improvement in the housing market has been especially noteworthy. According to the Case-Shiller home price index, house prices rose 5.3% in the most recent 12 months ending in February, while according to the Massachusetts Association of Realtors, sales in 2012 were 19% higher than in 2011 for single family homes, and 20% higher for condominiums. Most significantly, the number of housing permits in the last 12 months ending in March were 24% higher than in the prior 12 months (16% higher for single family permits, and 33% higher for multi-family permits). This is responsible for an improvement in construction employment, which rose 4% between May of last year and March of this.

The Outlook: Robust Expansion Will Follow a Soft Patch in 2013.

Growth in the Massachusetts economy is expected to slow somewhat from its surprisingly strong first quarter, and then to accelerate steadily next year. Growth in both the state and the nation is being restrained by fiscal policy, due to the social security tax increase and sequestration spending cuts. The former effectively lowered most workers' take-home pay by 2%, while the latter is withdrawing $85 billion in federal government spending from the economy. If it were not for a resurging private demand, these fiscal brakes might have sent the economy back into a recession. As it is, they are instead delaying, by a few quarters, the acceleration in growth usually associated with this phase of the business cycle.

On a fourth-quarter to fourth-quarter basis, Massachusetts payroll employment is expected to grow 1.0% in 2013. This is slower than the 1.4% annual average growth of the current expansion, and slower than last year, which also experienced 1.4% growth. In 2014, job growth will accelerate to 1.6%, and will average 2.2% in 2015, in response to the satisfaction of pent-up consumer demand. As this demand gets satisfied, the pace of growth will return to "normal" levels in 2016, and then slow further as baby-boomers retire and slow labor force growth. For the last two years of the forecast period, in 2016 and 2017, job growth will average 1.3% per year.

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

[4] All the figures reported here are 12-month moving averages from the Current Population Survey for Massachusetts.

2017. Over the forecast period, from the fourth quarter of 2012 to the fourth quarter of 2017, real gross state product is expected to grow at a 3.3% annual average rate, while real personal income is expected to grow at a 4.0% annual average rate. Massachusetts will continue to have higher productivity than the nation as a whole, with wage and salary income per worker remaining about 20% higher than in the nation as a whole.

The state's unemployment rate is expected to slowly improve, falling from its 6.5% average for the first quarter of this year to 5.2% by the last quarter of 2017. The unemployment rate was 4.6% in the quarter prior to recession.

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 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 19.8% 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 12.1% lower. Total nonagricultural employment is projected to be 7.3% higher, with the number of jobs having reached its pre-recession peak in the first quarter of this year, and surpassing its all-time high in the first quarter of 2015.

Leisure and hospitality; and professional and business services will also comprise higher shares of the economy in 2017, with employment 19.6% and 14.1% higher than before the recession respectively.

Information, construction, other services, and government will comprise roughly the same share of jobs as before the recession. Trade, transportation, and utilities; financial activities; and manufacturing will comprise a lower share of jobs than before the recession. Furthermore, the number of jobs in these sectors will still be lower than before the recession began. The number of jobs in trade, transportation, and utilities; and financial activities will be 1.7% and 2.0% lower, respectively; while the number of jobs in manufacturing will be 12.1% lower.

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 five year forecast period, overall payroll employment is projected to expand at an annual average rate of 1.5%, 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 4.6%, 2.5%, 2.3%, 1.9%, 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 no larger a 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 are expected to grow moderately slower than overall employment, at a 1.1% annual average pace. The remaining sectors: other services; government; trade, transportation, and utilities; and manufacturing, are expected to grow substantially slower, at annual average rates of 0.7%, 0.5%, 0.4%, and 0.4% respectively.

Housing

The residential housing market finally appears to be past the bottom and on its way back, assuming that the temporarily weak economy will not set it back once again. 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.[5]

This time, prices fell 25% between the third quarter of 2005 and the first quarter of 2009.[6] 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 a year 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, but then appreciation is expected to accelerate to between 3 and 4% per year for 2014-2017. Sales are expected to be 30% higher in 2014 than they were in 2012. Permits are expected to reach pre-recession levels by the end of 2014.

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 5.6, and is expected to continue to fall throughout the forecast to 5.1 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.

Manufacturing

Massachusetts was once the China of textiles, and was also a major producer of shoes and paper. According to Bureau of Labor Statistics data going back to 1939, Massachusetts manufacturing employment peaked at 800,900 in 1943. Today, with 250,100 workers (as of March), the industry is much smaller, but it is still a large sector that employs 8% of the state's workforce. It is also much different, concentrated in the production of computers and electronic products, fabricated metal products, food processing, and machinery. Most importantly, it is an export sector that generates income

[5] 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.
[6] For the Boston metro area, the Case-Shiller home price index fell 17.5% between November 2005 and April 2009.

disproportionate to it size of its workforce, accounting for 12.2% of private industry gross domestic product in 2011[7].

The sector provides good jobs at good wages. Average annual wage and salary income per worker in 2010 was $75,202 in manufacturing versus $54,740 for all Massachusetts payroll workers[8], despite the fact that it has a smaller proportion of college educated workers than the workforce as a whole[9].

Despite the lower educational attainment relative to the rest of the state economy, the Massachusetts manufacturing workforce is more highly educated than the country's manufacturing sector as a whole. Almost 39% of the state's manufacturing workforce had a Bachelor's degree or higher in 2010, versus 26% for the U.S. as a whole.[10]

The long sectoral decline in the number of manufacturing workers – which has been taking place since the end of World War II – may be over. The existing manufacturing sector is highly productive and well-connected to local, national, and world-wide markets. A large proportion of manufacturers specialize in the production of precision and prototype products for the state's information technology and medical science high-technology sectors. Much of the balance has achieved competitiveness by use of technology to compete with lower-wage manufacturers around the globe.

We are projecting employment in the sector to expand modestly over the next five years, at an average annual rate of 0.4% (see above). According to a recent survey of manufacturers conducted by the Dukakis Center at Northeastern University[11], over the next five years (2012-2017), 65.4% of manufacturers plan to increase production, while only 10.2% plan to decrease production; and 71% plan to expand employment, while only 7% plan to reduce employment.

If these projections and expectations are to come to fruition in the next five years and beyond, the industry needs to solve a looming workforce shortage. The manufacturing workforce is older than the state's workforce as a whole, with 54% of its workers age 45 or older.[12] The main reason for having an older workforce appears to be the difficulty in attracting youth. For whatever reason – fears about layoffs, geographic distance from the center of the Boston metro area, or just plain perceived "sexiness" of the factory floor, relatively few youth want to enter the profession. This lack of supply of workers has made it difficult for employers to find skilled labor. According to the Dukakis survey, 43% of manufacturers reported difficulty in recruiting skilled craftsmen, despite high unemployment rates. (In an earlier survey in 2007, 67% reported difficulty in recruiting for such positions, which suggests that the problem may soon get worse as the economy improves.)

The reason for worry is that, according to the Dukakis Center report, there will be as many as 95,000 to 100,000 job vacancies in the state's manufacturing sector over the next ten years, due mainly to retirements of existing workers. Even if youth were persuaded to enter the profession, will the state's education system have the capacity and the quality programs needed to supply the future workforce?

Alan Clayton-Matthews

[7] U.S. Bureau of Economic Analysis, State Gross State Product.
[8] U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages.
[9] Massachusetts American Community Survey, 2010.
[10] Ibid.
[11] Bluestone, Barry, et al. 2012. *Staying Power II: A Report Card on Manufacturing in Massachusetts 2012*. The Kitty and Michael Dukakis Center for Urban and Regional Policy, Northeastern University.
[12] Massachusetts American Community Survey, 2010.

Associate Professor, School of Public Policy and Urban Affairs, and Economics Department
Northeastern University
a.clayton-mattehws@neu.edu
617-373-2909