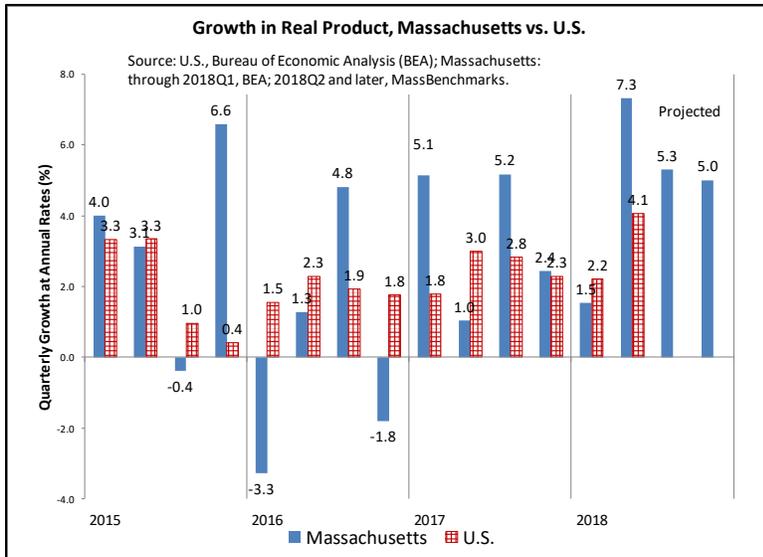


# Massachusetts Current and Leading Economic Indices

The Massachusetts Current Economic Index for June was 212.8, up 7.1 percent from May (at annual rates), and up 4.8 percent from June 2017. The current index is normalized to 100 in July 1987 and is calibrated to grow at the same rate as Massachusetts real gross domestic product over the 1978–2017 period. Unless otherwise specified, all growth rates below are expressed at annual rates.



The Massachusetts Leading Economic Index for June was 5.0 percent, and the three-month average for April through June was 4.9 percent. The leading index is a forecast of the growth in the current index over the next six months, expressed at an annual rate. Thus, it indicates that the economy is expected to grow at an annualized rate of 5.0 percent over the next six months (through December 2018) if productivity were at recent average rates.

In the second quarter of 2018, Massachusetts real gross domestic product grew 7.3 percent according to *MassBenchmarks*, while U.S. real gross domestic product grew 4.1 percent according to the U.S. Bureau of Economic Analysis (BEA). For the first quarter of this year, the BEA estimates that Massachusetts real gross domestic product grew 1.5 percent while the U.S. GDP grew 2.2 percent.

The Massachusetts economy accelerated sharply in the second quarter, bucking the trend towards slower growth anticipated due to low unemployment and demographic constraints of an aging population. Based on data from the U.S. Bureau of Labor Statistics (BLS) survey of employers and state tax revenues, the surge reflects strong gains in employment, earnings, and spending.

Payroll employment in Massachusetts in the second quarter expanded at a 2.9 percent pace, versus 1.7 percent for the U.S. In the first quarter, employment grew 0.9 percent in Massachusetts versus 1.7 percent for the U.S. From the second quarter of last year, the number of jobs in Massachusetts grew 1.6 percent, as did the U.S.

### Employment and Earnings Growth at Annual Rates, Massachusetts and the U.S.

|               | Payroll Employment |      | Wage and Salary Income /1 |      |
|---------------|--------------------|------|---------------------------|------|
|               | MA                 | US   | MA                        | US   |
| 2018Q2        | 2.9%               | 1.7% | 19.2%                     | 3.7% |
| 2018Q1        | 0.9%               | 1.7% | 6.2%                      | 5.8% |
| 17Q2 to '18Q2 | 1.6%               | 1.6% | 6.8%                      | 4.8% |

Sources: U.S. Bureau of Labor Statistics; U.S. Bureau of Economic Analysis; Mass. Department of Revenue/MassBenchmarks.

1. Massachusetts is derived from state withholding revenues for 2018Q2.

Income and spending as measured by tax collections were very strong. Wage and salary income in Massachusetts, as estimated from withholding tax collections, grew at a 19.2 percent annualized rate in the second quarter, while U.S. wage and salary income growth in the second quarter is expected to be 3.7 percent according to *MassBenchmarks*. (The BEA's estimate will be released July 31.) In the first quarter, BEA estimated that wage and salary income grew 6.2 percent in Massachusetts and 5.8 percent in the U.S. From the second quarter of last year, wage and salary income is up 6.8 percent in Massachusetts and 4.8 percent in the U.S.

Spending in Massachusetts, as measured by regular sales tax receipts and motor vehicle sales taxes, rose 6.7 percent in the second quarter, following a modest rise of 3.4 percent in the first quarter. Relative to the second quarter of last year, this spending measure is up 4.8 percent. The uptick in spending in the second quarter was led by a sharp increase in motor vehicle purchases.

### Unemployment Rates, Massachusetts and the U.S.

|        | U-3 Rate |     | U-6 Rate |     |
|--------|----------|-----|----------|-----|
|        | MA       | US  | MA       | US  |
| Jun-18 | 3.5      | 4.0 | 7.5      | 7.8 |
| Mar-18 | 3.5      | 4.1 | 7.4      | 8.0 |
| Jun-17 | 3.8      | 4.3 | 7.4      | 8.5 |

Sources: U.S. Bureau of Labor Statistics/ MassBenchmarks.

The unemployment rate of Massachusetts residents remained at a near historical low of 3.5 percent in June, with no change from March. In June of last year, the unemployment rate was 3.8 percent. For the U.S., the unemployment rate was 4.0 percent in June of this year, 4.1 percent in March, and 4.3 percent in June of last year. The state's lower unemployment rate reflects its higher

level of educational attainment. These unemployment rates are well below pre-recession levels.

The broader U-6 measure of unemployment in Massachusetts has changed little over the past year. The U-6 measure includes a count of the number of persons who are part-time for "economic reasons", meaning that they would like full-time work. In June, the U-6 was 7.5 percent, about the same as June 2017, when it was 7.4 percent. The number of workers who are working part-time but want a full-time job is still stuck at about 100,000, which is about 30,000 above the pre-recession level of 70,000 in 2007. The U.S. U-6 rate of unemployment in June was 7.8 percent. In June of 2017, it was 8.5 percent.

Low unemployment rates and strong demand for labor and housing may finally be lifting wage rates. They are also leading to increases in the cost of living, particularly for housing. While the overall consumer price index for the Boston area (All Urban Consumers CPI, BLS) was up 3.2 percent in May from the prior year (the index is bi-monthly), the housing component was up 4.5 percent and the rent component was up 5.6 percent for the same period of time.

The state’s economy is projected to grow 5.3 percent in the third quarter and 5.0 percent in the fourth quarter of this year. These expectations are from a statistical model that estimates the relationship between current and leading indicators and future growth 6 months in the future. Since these indicators do not include demographic projections of population and labor force growth, it seems unlikely that growth at these magnitudes can persist, even for the remainder of this year. This is because retiring baby boomers should pull down labor force growth later this year and through the next decade, unless the state is able to draw young workers from across the country and the world.

That said, there is some evidence that this is possible. While total Massachusetts job growth in the last 12 months (from June 2017 to June 2018) was 1.7 percent, employers in technology and knowledge-based sectors were able to expand their payrolls at a faster pace. During this same time, for example, employment in the professional, scientific, and technical services sector – which includes scientific research and development, engineering, computer systems, and consulting – grew 5.8 percent; and in software, it grew 3.2 percent. Construction also continued to boom, adding 7.3 percent to its job count. It is likely that many of these new jobs were filled by people who either migrated to the state or stayed in the state after moving here to go to college. The incomes in these well-paid jobs will generate demand for jobs in all sectors, many of them in moderately-paid or lower-paid service jobs. The challenge is to ensure that the housing, transportation, and other amenities will be here to attract these workers too.

| Contributions of Indicators to the Leading Index          |      |            |
|---|------|------------|
|   | June | April-June |
| Trend   | 1.9  | 1.9        |
| Total Nonagricultural Employment                          | 1.8  | 2.5        |
| Withholding Taxes   | 0.5  | 0.5        |
| Sales Taxes   | 0.0  | 0.0        |
| Unemployment rate   | 0.0  | -0.1       |
| Consumer Confidence                                       | -0.4 | -0.3       |
| Interest rate spread (10-year less 3-month)               | -0.1 | -0.1       |
| Bloomberg MA stock index                                  | 0.4  | 0.3        |
| Initial Unemployment Claims                               | 0.1  | 0.1        |
| Construction Employment                                   | 0.2  | 0.1        |
| Motor Vehicle Sales Taxes                                 | 0.6  | -0.1       |
| Total   | 5.0  | 4.9        |
| <i>Note: Numbers may not add exactly due to rounding.</i> |      |            |

The 10 indicators that comprise the leading index usually do not all move in tandem. Typically, some may indicate an expectation of faster than average growth, while at the same time others may indicate an expectation of slower than average growth. The accompanying table accounts for the contributions of each towards faster or slower growth than the recent underlying trend of 1.9 percent. The index value is their sum.

In June, six indicators contributed to a forecast of above-trend growth: total nonagricultural employment, withholding taxes, the Bloomberg stock index for Massachusetts, initial unemployment claims, construction employment, and motor vehicle sales taxes. Two indicators

contributed to average-trend growth: sales taxes, and the unemployment rate. Two indicators contributed to below-trend growth: consumer confidence, and the interest rate spread between 10-year and 3-month U.S. Treasury securities.

For the three-month period April through June, five indicators contributed to a forecast of above-trend growth: total nonagricultural employment, withholding taxes, the Bloomberg stock index for Massachusetts, initial unemployment claims, and construction employment. One indicator, sales taxes, contributed to average-trend growth. Four indicators contributed to below-trend growth: the unemployment rate, consumer confidence, the interest rate spread between 10-year and 3-month U.S. Treasury securities, and motor vehicle sales taxes.

The current and historical quarterly estimates for state domestic product growth include adjustments for changes in productivity growth. These adjustments are estimates of the quarterly deviations from the 1978-2017 trend in the growth of the ratio of output to employment. In the second quarter, these adjustments added 0.6 percentage points to growth. In the first quarter, these adjustments subtracted 1.2 percentage points from growth. For the forecast of state domestic product growth in the third and fourth quarters of this year, these adjustments are expected to subtract 1.3 percentage points from growth, the average of the last five years.

The current and historical quarterly estimates also include “cyclical” adjustments, as the relationship between the growth in the current indicators and that of gross domestic product changes over the course of the business cycle. In the second quarter, these adjustments added 0.1 percentage points to growth. In the first quarter, these adjustments added 0.2 percentage points to growth. For the forecast of the third and fourth quarters of this year, these adjustments are expected to add 0.0 percentage points to growth, the average amount of the last two years.

Several recent months of the indices are revised each release. These revisions are a result of the statistical method used to create the index, as well as revisions in the underlying indicators.

All the indicators except interest rates refer to Massachusetts. The current index is composed of four indicators: nonagricultural employment, withholding taxes, sales taxes, and the unemployment rate. The leading index includes these four current indicators plus the other six (leading) indicators in the contributions table. All the indicators are as of June, except for interest rates and the Bloomberg stock index for Massachusetts, which are through July 23, 2018. The MassInsight Consumer Confidence Index is released every third month. Intervening months are interpolated, and changes in the Conference Board’s Consumer Confidence Index for the U.S. are used to extrapolate to the current month of the index, as needed. Series measured in current dollars or values, i.e., withholding taxes, sales taxes, the Bloomberg stock index, and motor vehicle sales taxes, are deflated by the U.S. consumer price index for all urban consumers, excluding food and energy.

For a description of the methodology used to construct these indices, see: Alan Clayton-Matthews and James H. Stock, “An application of the Stock/Watson index methodology to the Massachusetts economy”, *Journal of Economic and Social Measurement*, vol. 25 (1998/1999), pp. 183-233.

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