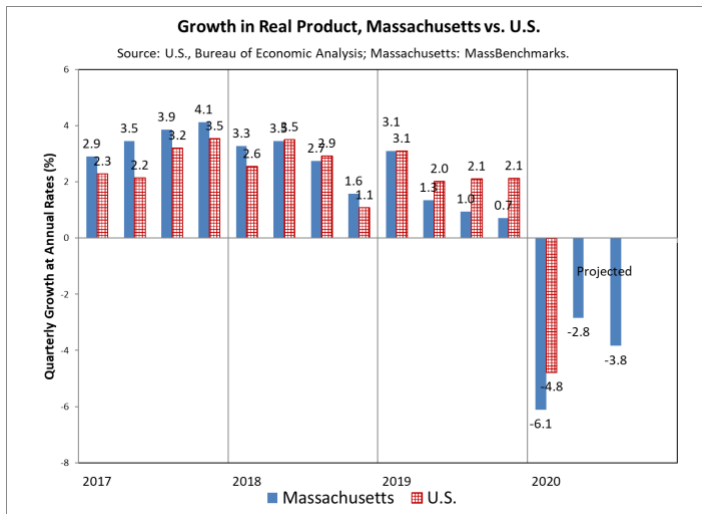


Massachusetts Current and Leading Economic Indices

Data do not reflect the full impact of COVID-19; Q2 expected to be the worst quarter on record

The Massachusetts Current Economic Index for March was 226.4, up 1.2 percent from February (at annual rates), and up 2.4 percent from March 2019. 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 1978–2019 period. All growth rates below are expressed at seasonally adjusted annual rates.



The Massachusetts Leading Economic Index for March was -3.8 percent, and the three-month average for January through March was -2.6 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 decline at an annualized rate of 3.8 percent over the next six months (through September 2020) if productivity were at recent average rates.

In the first quarter of 2020, Massachusetts real gross domestic product (GDP) declined 6.1 percent according to MassBenchmarks, while U.S. real gross domestic product declined by 4.8 percent according to the U.S. Bureau of Economic Analysis (BEA). In the fourth quarter of 2019, both Massachusetts GDP and U.S. GDP grew by 2.1 percent.

The Massachusetts and U.S. economies plunged into a recession in the second half of March. The negative growth rate estimates for the first quarter of this year do not reflect the severity of the COVID-19-induced downturn. This is because the economic indicators used to estimate growth primarily reflect economic activity that preceded the sharp downturn. Two key labor market indicators for March – payroll employment and the unemployment rate – reflect the week of March 8 through 14, before the shutdown of non-essential businesses began in Massachusetts on March 24 and before the sharp rise in unemployment claims began on March 15. Regular state sales tax revenues in March reflect purchases made in February, and first quarter wage and salary income include apparently strong “bonus season” income realized in January and February.

After growing by a combined 14,200 jobs in January and February, Massachusetts payroll employment declined 18,000 in March. In the first quarter, the number of jobs in Massachusetts grew 0.9 percent on an annualized basis relative to the fourth quarter of last year. In the fourth quarter of 2019, jobs grew 0.2 percent. For the U.S., the first quarter growth in jobs was 1.0

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

	Payroll Employment		Wage and Salary Income /1	
	MA	US	MA	US
2020Q1	0.9%	1.0%	15.5%	2.8%
2019Q4	0.2%	1.7%	3.6%	3.8%
19Q1 to '20Q1	0.6%	1.3%	4.3%	2.7%

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 2020Q1. U.S. is estimated by MassBenchmarks for 2020Q1.

percent, and the fourth quarter 2019 growth was 1.7 percent. Jobs grew 0.6 percent from the first quarter of last year to the first quarter of this year in Massachusetts. The corresponding growth for the U.S. was 1.3 percent.

The unemployment rate in Massachusetts rose from 2.8 percent in December 2019 to 2.9 percent in March. In the U.S., the unemployment rate rose from 3.5 percent in December to 4.4 percent in March. The broader U-6 unemployment rate rose from 5.9 percent in December to 7.9 percent in March, largely because the number of persons working part time for economic reasons rose 56,000

between December and March. The U.S. U-6 unemployment rate rose from 6.7 percent in December to 8.7 percent in March.

Wage and salary income in Massachusetts as estimated from withholding tax revenue grew at a

Unemployment Rates, Massachusetts and the U.S.

	U-3 Rate		U-6 Rate	
	MA	US	MA	US
Mar-20	2.9%	4.4%	7.9%	8.7%
Dec-19	2.8%	3.5%	5.9%	6.7%
Mar-19	3.0%	3.8%	6.3%	7.4%

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

seasonally adjusted annual rate of 15.5 percent in the first quarter. Withholding taxes were particularly strong in January and February, probably reflecting a strong bonus season – the S&P 500 stock index grew 24 percent in 2019. In the fourth quarter of 2019, Massachusetts wage and salary income grew 3.6 percent according to the BEA. U.S. wage and salary

income grew 2.8 percent in the first quarter of 2020 as estimated by MassBenchmarks and 3.8 percent in the fourth quarter of 2019 as estimated by the BEA.

Spending on items subject to the Massachusetts regular sales tax and the motor vehicle sales tax rose 4.4 percent in the first quarter, following 9.0 percent growth in the fourth quarter of last year. Such spending rose 6.3 percent from the first quarter of 2019 to the first quarter of 2020.

The leading index is projecting that the state's economy will contract at a 3.8 percent annual rate between March and September. This vastly understates the magnitude of the decline in the economy that has already occurred between mid-March and today. Between March 15 and April 18, 650,000 people filed for unemployment in Massachusetts. This implies that the number of

persons unemployed, on layoff or furlough, or who lost their job because of the pandemic accounted for roughly 20 percent of the labor force as of mid-April. Therefore, the fall in Massachusetts gross domestic product in the second quarter is expected to be on the order of 25 percent to 50 percent on an annual basis.

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 1.0 percent. The index value is their sum.

Contributions of Indicators to the Leading Index		
	March	January to March
Trend	1.0	1.0
Total Nonagricultural Employment	-0.8	-1.5
Withholding Taxes	0.3	0.3
Sales Taxes	0.0	0.0
Unemployment rate	-0.4	-0.5
Consumer Confidence	-0.2	-0.2
Interest rate spread (10-year less 3-month)	-0.2	-0.1
Bloomberg MA stock index	-0.2	-0.4
Initial Unemployment Claims	-3.6	-1.2
Construction Employment	-0.1	-0.1
Motor Vehicle Sales Taxes	0.2	0.0
Total	-3.8	-2.6

Note: Numbers may not add exactly due to rounding.

In March, two indicators contributed to a forecast of above-trend growth: withholding taxes, and motor vehicle sales taxes. One indicator, sales taxes, contributed to average-trend growth. Seven indicators contributed to below-trend growth: total nonagricultural employment, the unemployment rate, consumer confidence, the interest rate spread between 10-year and 3-month U.S. Treasury securities, the

Bloomberg stock index for Massachusetts, initial unemployment claims, and construction employment.

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

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 1978-2019 trend in the growth of the ratio of output to employment. In the first quarter of 2020 these adjustments subtracted 7.5 percentage points from growth. In the fourth quarter of 2019 these adjustments subtracted 1.2 percentage points from growth. For the forecast of state domestic product growth in the second and third quarters of this year, these adjustments are expected to subtract 1.5 percent 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 first quarter of 2020, these adjustments subtracted 0.4 percentage points from growth. In the fourth quarter of 2019, these adjustments subtracted 0.7 percentage points from growth. For the forecast of state domestic product growth in the second and third quarters of this year, these adjustments are expected to subtract 0.5 percentage points from growth, the average 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 March, except for interest rates and the Bloomberg stock index for Massachusetts, which are through April 22, 2020. The MassInsight Consumer Confidence Index is usually 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.

Coronavirus (COVID-19) Impact on MassBenchmarks 2020 First Quarter Estimates

The MassBenchmarks current and leading indexes and gross state product growth estimates are based on a statistical model that uses publicly available economic indicators for Massachusetts and the U.S. No subjective or “expert opinion” adjustments are made to the model by MassBenchmarks. Because data at the state level are based on smaller sample sizes and have substantially more noise than national-level data, the model smooths the indicators to extract the signal and separate it from the noise. (The Bureau of Labor Statistics uses a similar methodology to produce the state unemployment rate estimates.) This means that an indicator value used by the model is a weighted average of current, past and future (if available) values of the raw indicator. Usually this results in a more reliable measure for the indicator. But in the case of COVID-19, smoothing is understating the impact on the economy. The extreme changes in indicators observed as a result of the economic shutdown are discounted by this smoothing. Essentially, the extreme changes are treated largely as noise rather than signal. This is why some of the estimates in this report are accompanied by MassBenchmarks guidance.

As more months of data become available, the model’s estimates will become more reliable. Over time, these large COVID-19 changes are recognized as signal rather than treated as noise.

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