

Worcester Economic Indicators

Second Quarter 2019

Second Quarter Slump

Worcester Economic Index down 0.9%

Worcester Economic Index

The Worcester area economy decreased at a 0.9% annualized rate during the second quarter of 2019 according to the latest estimates of the Worcester Economic Index (WEI). The drop follows a weak first quarter during which revised estimates of the WEI show economic activity down 0.3%. In contrast, both the Massachusetts and United States economies grew during the second quarter, albeit at slower rates than during the first quarter.

According to the latest estimates from MassBenchmarks, the state economy grew at a 1.4% rate in the second quarter, down from 2.7% in the first.ⁱ Nationally, U.S. real GDP grew by 2.1%, which fell short of the 3.1% rate of the first quarter according to U.S. Bureau of Economic Analysis estimates released on July 26th.ⁱⁱ

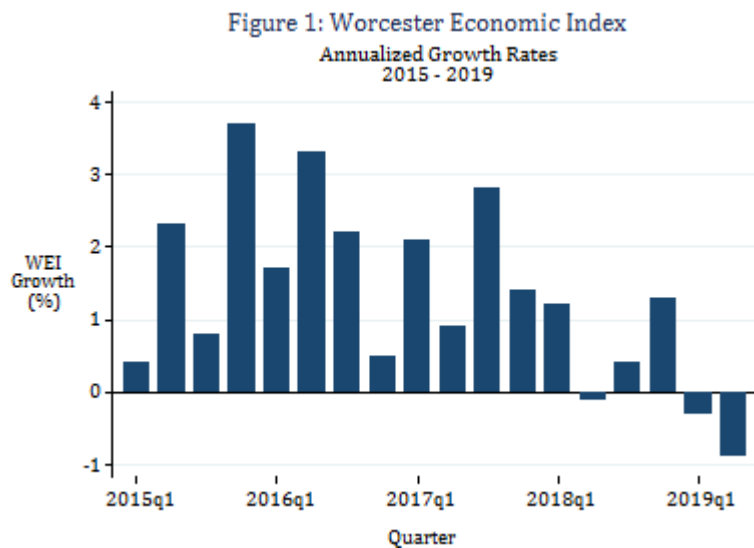


Figure 1 shows the annualized growth rates of the Worcester Economic Index for each quarter going back to 2015, while table 1 presents WEI values over the past 13 months, the month-to-month change, and annualized quarterly growth rate. While the WEI is calculated on a monthly basis it is best not to read too much into changes in any single month, but rather examine how the index has changed over longer periods of time. As table 1 shows, the WEI has been either flat or falling since the start of 2019, declining by 0.1 in each of the past four months.

An examination of the U.S. Bureau of Labor Statistics (BLS) data used in the estimation of the Worcester Economic Index reveal weakness in the local labor market that is captured by the index. As table 2 shows, according to the BLS Current Population Survey of households, employment dropped by 1,567 from March to June.ⁱⁱⁱ The decrease is unusual because typically there is an increase in employment during the early summer as seasonal

hiring picks up and students enter the labor force. After adjusting the BLS data to account for seasonal effects there was an even larger decline in household employment (-2,656). A similar story can be told when looking at payroll employment estimates derived from the BLS Current Employment Statistics survey. The

Table 1: Worcester Economic Index (WEI)
June 2018 – June 2019

Month	Worcester Economic Index	Change from previous month	Quarterly Growth Rate, Annualized
June 2018	117.7	0.0	-0.1%
July 2018	117.6	-0.1	
August 2018	117.7	0.1	
September 2018	117.8	0.1	0.4%
October 2018	117.9	0.1	
November 2018	118.1	0.2	
December 2018	118.2	0.1	1.3%
January 2019	118.2	0.0	
February 2019	118.2	0.0	
March 2019	118.1	-0.1	-0.3%
April 2019	118.0	-0.1	
May 2019	117.9	-0.1	
June 2019	117.8	-0.1	-0.9%

seasonally unadjusted data shows an increase of 5,100 jobs during the second quarter, but the seasonally adjusted data indicates the number of jobs actually fell by 1,300 since March 2019.^{iv} The Worcester Economic Index is estimated utilizing the seasonally-adjusted employment estimates from both the household survey and the payroll survey, as well as the seasonally-adjusted unemployment rate. So even though the unemployment rate fell slightly over the time period, the decline in household and payroll employment were substantial enough to move the Worcester Economic Index down during the second quarter.

While not incorporated into the estimation of the Worcester Economic Index, labor force data is also presented in table 2. As with employment, there is typically a seasonal upswing in the number of people in the labor force during the second quarter, however that was not the case this year. As table 2 shows, since March the labor force appears to have fallen by roughly the decrease in household employment. From a statistical standpoint this explains how employment can decrease without a corresponding increase in the unemployment rate, since the unemployment rate is the percentage of the labor force without a job. It is difficult to determine the reason for the decline in the labor force. During a recession the labor force often decreases as individuals drop out due to frustration with the lack of employment opportunities, but that would not seem to be the case with the local unemployment rate currently well below 4%.

Table 2: BLS Employment Estimates
Worcester NECTA, March 2019 to June 2019

	Not Seasonally Adjusted ^v			Seasonally Adjusted ^v		
	March 2019	June 2019	Change Jun - Mar	March 2019	June 2019	Change Jun - Mar
Unemployment Rate	3.5%	3.5%	0.0	3.3%	3.2%	-0.1
Payroll Employment	283,600	288,700	+5,100	286,800	285,500	-1,300
Household Employment	351,771	350,240	-1,567	350,740	348,084	-2,656
Labor Force	364,406	362,933	-1,473	361,873	359,340	-2,533

Worcester Economic Outlook

Each quarter, following the estimation of the Worcester Economic Index, a forecast is put forth regarding the future path of the WEI. The forecast is based on an econometric model

that uses past estimates of the Worcester Economic Index in combination with four leading indicators of the national economy. In spite of the recent decline in the Worcester Economic Index the forecast model predicts the economy will grow over the coming months. The June 2019 forecast projects an increase of 1.5% over the next six months, while the average of the April, May, and June forecasts is a slightly lower 1.3%.

Table 3 shows the growth forecast broken down into its six components. The first component is the long-run trend growth of the WEI which is approximately 1.0% on an annualized basis. The values shown for each of the other components listed in table 3 represent the amount that those components contribute to the forecast rising above or falling below the trend.

Credit market conditions, as measured by the Leading Credit Index™, continue to provide a substantial positive boost to the WEI forecast. The Leading Credit Index™ (LCI) is compiled by The Conference Board each month and is a composite of six financial sector variables that aims to capture credit market conditions in the United States. Currently, the LCI is indicating that credit conditions are favorable, and therefore is providing a positive 0.6% bump to the June forecast.^{vi}

Table 3: Breakdown of Projected Growth of WEI^{vi}
6-month growth forecast, annualized basis

Component	June 2019	Second Quarter Average
Trend	1.0%	1.0%
Consumer Expectations	-0.1%	-0.1%
S&P 500	0.2%	0.2%
Interest Rate Spread	-0.2%	-0.2%
Leading Credit Index™	0.6%	0.5%
WEI	-0.1%	0.0%
Total	1.5%	1.3%

Components may not add to total due to rounding.

The S&P 500 Index is the only other component that is providing a positive contribution to the growth forecast. In theory, stock market valuations reflect investor attitudes toward future economic conditions, so an increase in the S&P 500 may precede an improving economy. As of July 26th the S&P 500 has increased over 20% since the start of 2019. As a result, the S&P 500 is making a positive 0.2% contribution to the June forecast.^{vi}

The interest rate spread is currently having a negative impact on the Worcester Economic Index forecast. The spread, which is the difference between the yield on a 10-year treasury bond and the federal funds rate, is an indicator of monetary policy. Recently, the spread has turned negative which is consistent with an inverted yield curve, an often discussed signal of a coming recession. A negative interest rate spread suggests that investors in long-term bonds are expecting lower interest rates in the future as a weaker economy leads to reductions in the federal funds rate by the Federal Reserve, and also puts downward pressure on inflation. In order to preempt an economic slowdown the Federal Reserve announced a decrease in its federal funds rate target following its July 30-31 meeting. The decrease should cause the interest rate spread to increase because it will lower the likelihood of a recession in the future and therefore raise 10-year bond rates, while also lowering the federal funds rate itself. However, at the time of the analysis the interest rate spread provided a -0.2% contribution to the forecast.

The University of Michigan Index of Consumer Expectations was 89.3 in June, down slightly from the May.^{vi} The index is still relatively high, but it does make a small negative contribution to the June forecast.

The remaining component of the Worcester Economic Index forecast is the WEI itself. Past values of the WEI are included in the forecast model because economies tend to exhibit momentum over the short-run, suggesting recent economic trends can help explain the future direction of the economy. The sluggish performance of the local economy in recent months is having a small negative impact (-0.1%) on the June forecast.

Local Leading Indicators

The forecast of the Worcester Economic Index presented above is based on four national leading indicators, recent WEI estimates, as well as the long-run trend. To supplement this forecast each quarterly issue of *Worcester Economic Indicators* includes a discussion of several leading indicators that are more closely tied to the local economy. Local data can be more volatile than national data and therefore quarterly averages are compared on a year-over-year basis to avoid problems arising from month-to-month variation. Recent performance of two local leading indicators, new business incorporations for the Worcester area and initial unemployment claims for Massachusetts, are shown in table 4.

Table 4: Local Leading Indicators
Percentage Change, Quarter 2 2018 to Quarter 2 2019

Indicator	Percent Change	Signal
New Business Incorporations ^{vii}	4.9%	Positive
Massachusetts Initial Claims ^{viii}	3.1%	Negative

Continuing the pattern of the past several years, new business incorporations in the greater Worcester area increased again between the second quarters of 2018 and 2019.^{vii} An increase in incorporations is considered a positive signal because new businesses may look to hire workers in the near future.

The number of initial unemployment claims filed during the second quarter in the Commonwealth of Massachusetts increased 3.1% from the second quarter of 2018.^{viii} This is considered a negative signal because it suggests that more people were let go from their jobs and forced to apply for unemployment compensation. However, the level of initial unemployment claims is still near historic lows, so it should be considered a weak signal at best.

To sum up, the Worcester Economic Index (WEI) decreased at a 0.9% annualized rate in the second quarter of 2019. The WEI is expected to grow at about 1.3 – 1.5% over the coming six months. Leading indicators are mixed at both the national and local levels.

The next issue of *Worcester Economic Indicators* be released in early November 2019.

Additional information about this project is available at:

<https://www.assumption.edu/people-and-departments/organization-listing/economics-and-global-studies/worcester-economic-index>

Prepared by:

Thomas White, Ph.D.

Department of Economics & Global Studies

Assumption College

508-767-7556

twhite@assumption.edu

July 31, 2019

ⁱ MassBenchmarks, Current and Leading Indexes July 2019. <http://www.donahue.umassp.edu/business-groups/economic-public-policy-research/massbenchmarks/benchmarks-bulletin-july-2019>, accessed 7/30/19.

ⁱⁱ U.S. Department of Commerce, Bureau of Economic Analysis, https://www.bea.gov/system/files/2019-07/gdp2q19_adv_1.pdf, accessed 7/30/19.

ⁱⁱⁱ Author's calculations based on data from the Bureau of Labor Statistics. Household employment and the unemployment rate is obtained from the Local Area Unemployment Database (LAU) of the BLS, <https://www.bls.gov/lau/data.htm>. All employment data is for the Worcester NECTA which consists of the city of Worcester as well as 48 surrounding towns located in south central Massachusetts and northeastern Connecticut.

^{iv} Payroll employment is obtained from the State and Area Employment Database (SAE) of the BLS, <https://www.bls.gov/sae/data/home.htm>.

^v The not seasonally adjusted BLS data is adjusted for seasonal variation by the author using the X-12 ARIMA program developed by the U.S. Census Bureau.

^{vi} The leading indicators used to forecast the WEI are:

Consumer expectations: From the University of Michigan Survey of Consumer Sentiments.

S&P 500: Monthly closing value of the index.

Leading Credit Index™: The Conference Board's index of credit market conditions.

Interest rate spread: The yield on a 10-year Treasury bond less the federal funds rate.

The above leading indicators are obtained from The Conference Board's Business Cycles Indicators database.

^{vii} Secretary of the Commonwealth of Massachusetts

^{viii} Massachusetts Department of Employment and Training.