

Worcester Economic Indicators

First Quarter 2019

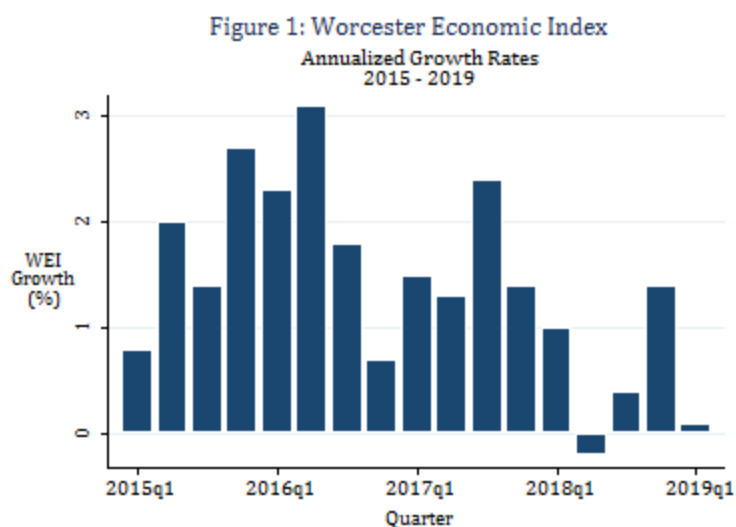
*Worcester Economic Index Flat in First Quarter
2018 estimates revised downward*

Worcester Economic Index

Economic activity in the greater Worcester area slowed during the first quarter of 2019 according to the Worcester Economic Index (WEI). Since December, the WEI has increased at a 0.1% annualized rate which falls short of the revised 1.4% rate of the fourth quarter of 2018. The Worcester Economic Index is estimated using Bureau of Labor Statistics (BLS) employment and unemployment data for the greater Worcester area (NECTA). According to the BLS Current

Population Survey of households, almost 3000 more people had jobs in March 2019 compared to March 2018, and the unemployment rate fell from 4.0% to 3.5% over the same period. However, the BLS payroll survey estimates the number of jobs in the region actually declined by 4,600 since March 2018.ⁱ The seeming contradiction in the employment estimates between the two surveys is the result of different sampling populations and employment definitions. The BLS household survey focuses on estimating the number of people working, while the BLS payroll survey provides an estimate of the number of jobs. Someone who holds two part-time jobs would be counted once in the household survey, while the payroll survey would count each job separately.ⁱⁱ The Worcester Economic Index utilizes both household survey and payroll survey estimates since each provide information on the local labor market. Figure 1 shows the annualized growth rate of the Worcester Economic Index for each quarter going back to 2015.

As stated above, the Worcester Economic Index is derived using Bureau of Labor Statistics estimates of employment and unemployment. Periodically, the data reported by the Bureau of Labor Statistics is revised and updated. In March 2019, the BLS released revised estimates of payroll employment as part of an annual benchmarking process that makes use of unemployment insurance data to estimate employment, replacing sample-based



estimates.ⁱⁱⁱ When used to recalculate the Worcester Economic Index, the revised data caused a substantial change in the WEI estimates from those reported at the end of 2018. The impact that the revisions had on the index are presented in figure 2, while table 1 shows the Worcester Economic Index, its monthly change and annualized quarterly growth rates over the past year. 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 observe changes in the index over longer periods of time. As table 1 shows, the Worcester Economic Index was almost flat during the first quarter of 2019.

Figure 2: Worcester Economic Index since 2014
Impact of BLS revisions of March 2019

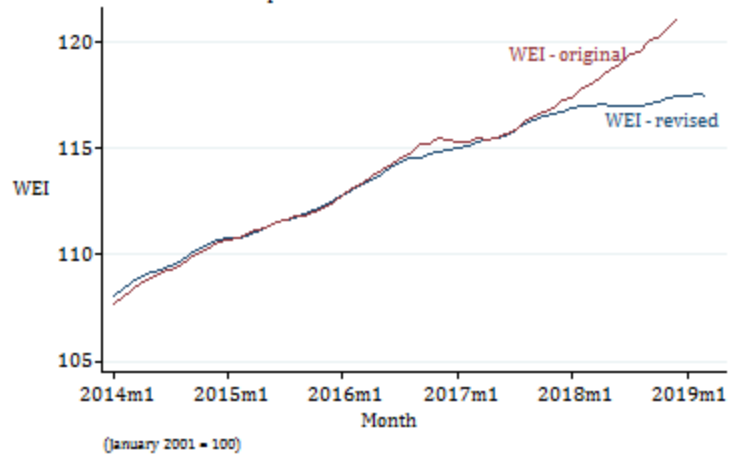


Table 2 provides data that explains why the Worcester Economic Index has changed so little since the start of the year. While the local unemployment rate increased from 2.9% in December to 3.5% in March, such an increase is consistent with normal seasonal effects. After seasonal variation is taken into account the unemployment rate for the Worcester area was unchanged since the end of

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

Month	Worcester Economic Index	Change from previous month	Quarterly Growth Rate, Annualized
March 2018	117.2	0.0	1.2%
April 2018	117.2	0.0	
May 2018	117.2	0.0	
June 2018	117.2	0.0	-0.2%
July 2018	117.1	-0.1	
August 2018	117.2	0.1	
September 2018	117.3	0.1	0.4%
October 2018	117.4	0.1	
November 2018	117.6	0.2	
December 2018	117.7	0.1	1.4%
January 2019	117.7	0.0	
February 2019	117.8	0.1	
March 2019	117.7	-0.1	0.1%

2018. However, even after seasonal adjustments were made to the employment data there was a decrease in both the payroll and household estimates of employment. Seasonally-adjusted payroll fell by 800 jobs, while the household survey showed an employment decline of over 2900 workers.^{iv} A decrease in the labor force, while not explicitly included in the estimation of the Worcester Economic Index, explains why the seasonally adjusted unemployment rate was steady. Fewer people were working, but fewer were looking for work as well.

Table 2: BLS Employment Estimates
Worcester NECTA, December 2018 – March 2019

	Not Seasonally Adjusted ^{iv}			Seasonally Adjusted ^{iv}		
	December 2018	March 2019	Change Mar - Dec	December 2018	March 2019	Change Mar - Dec
Unemployment Rate	2.9%	3.5%	0.6	3.3%	3.3%	0.0
Payroll Employment	289,500	283,100	-6,400	287,100	286,300	-800
Household Employment	353,858	351,495	-2,363	353,396	350,465	-2,931
Labor Force	364,469	364,121	-348	365,556	361,590	-3,966

Worcester Economic Outlook

Over the coming six months the Worcester economy is expected to grow at a rate slightly above the long-term trend. According to the forecast model, which utilizes recent estimates of the Worcester Economic Index along with four leading indicators of the national economy, the WEI is projected to grow at about 1.6% over the next two quarters according to the March 2019 forecast. The average of the forecasts from January, February, and March provide a similar estimate of 1.4%.

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

Component	March 2019	First Quarter Average
Trend	1.0%	1.0%
Consumer Expectations	0.0%	0.0%
S&P 500	0.1%	-0.1%
Interest Rate Spread	0.0%	0.0%
Leading Credit Index™	0.5%	0.5%
WEI	0.0%	0.0%
Total	1.6%	1.4%

Components may not add to total due to rounding.

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 component contribute to the forecast rising above or falling below the trend.

Conditions in credit markets, as measured by the Leading Credit Index™, is the only forecast component that is providing a positive contribution to the above trend 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 0.5% bump to both the March forecast and the monthly average forecast.^v

Recent volatility in the S&P 500 is shown in its contribution to the growth forecast. As of April 26th the S&P 500 is up about 17% since the start of the year which allows it to make a small positive contribution to the March forecast.^{vi} However, the poor performance of the stock market at the end of 2018 lead the S&P 500 index to have a negative effect on the January and February forecasts which when combined with the March forecast leads to a slight negative impact (-0.1%) on the average of monthly forecasts.

The weak growth in the Worcester Economic Index in recent months means the WEI is not providing any contribution to the forecast. Past values of the WEI are used in the forecast model because economies tend to maintain momentum over the short run, therefore recent economic trends can help explain future performance.

The other components of the forecast for the Worcester Economic Index, the interest rate spread and the University of Michigan Index of Consumer Expectations are not currently impacting the forecast estimates.

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 a 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.

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

Table 4: Local Leading Indicators
Percentage Change, Quarter 1 2018 to Quarter 1 2019

Indicator	Percent Change	Signal
New Business Incorporations ^{vii}	8.5%	Positive
Massachusetts Initial Claims ^{viii}	-5.7%	Positive

The number of initial unemployment claims filed during the first quarter in the Commonwealth of Massachusetts fell 5.7% from the first quarter of 2018.^{viii} This is considered a positive signal because it suggests that fewer people were let go from their jobs and forced to apply for unemployment compensation.

To sum up, the Worcester Economic Index (WEI) increased at only a 0.1% annualized rate in the first quarter of 2019. The WEI is expected to grow at about 1.4 – 1.6% over the coming six months. New business incorporations and Massachusetts initial unemployment claims continue to provide a positive signals for the local economy.

The next issue of *Worcester Economic Indicators* be released in early August 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>

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ⁱ Author's calculations based on data from the Bureau of Labor Statistics. Payroll employment is obtained from the State and Area Employment Database (SAE) of the BLS. Household employment and the unemployment rate is obtained from the Local Area Unemployment Database (LAU) of the BLS. 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.

ⁱⁱ Comparing Employment from the BLS Household and Payroll Surveys,

https://www.bls.gov/web/empsit/ces_cps_trends.htm.

ⁱⁱⁱ Revisions in State Establishment-based Employment Estimates Effective January 2019,

https://www.bls.gov/sae/bmrk_article.htm.

^{iv} 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.

^v 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.

^{vi} S&P Dow Jones Indices LLC, S&P 500 [SP500], retrieved from FRED, Federal Reserve Bank of St. Louis;

<https://fred.stlouisfed.org/series/SP500>, April 28, 2019.

^{vii} Secretary of the Commonwealth of Massachusetts

^{viii} Massachusetts Department of Employment and Training.