ASSUMPTION COLLEGE
Department of Economics
& Global Studies

# Worcester Economic Indicators

Third Quarter 2018
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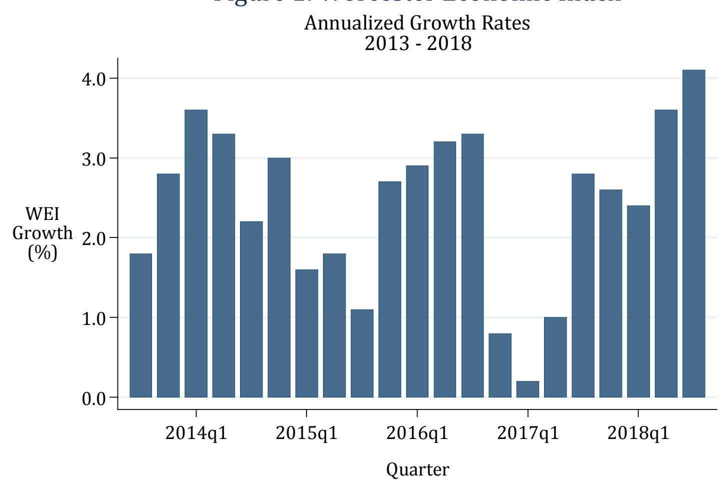
## *Local Economy Posts Strong Third Quarter*

*Worcester Economic Index up 4.1%*

### Worcester Economic Index

Economic growth in the Worcester area accelerated in the third quarter of 2018 according to the Worcester Economic Index (WEI) which grew at a 4.1% annualized rate. 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 payroll survey, local employment was up about 3% since September 2017, while the BLS survey of households showed an increase of just over 5%. The household survey also reported a fall in the unemployment rate over the past year.[i] These three measures are used in the estimation of the WEI, and the fact that each points to a strengthening economy is the reason the WEI has risen over the past year.

Figure 1: Worcester Economic Index




As figure 1 shows, the third quarter of this year was the strongest in the past five years, and followed a strong second quarter. In order for the WEI to be comparable with other measures of local economic performance, its scale is set to be consistent with the long-run growth rate of real GDP in the Worcester metro area (MSA). The process of scaling the index, along with periodic adjustments in the underlying employment and unemployment data caused the latest estimates of the WEI to be adjusted upward. This is noticeable for the second quarter 2018 estimate of WEI growth, which was revised to 3.6% from the 2.5% value reported last quarter. Table 1 shows the revised Worcester Economic Index over the past 13 months, its month-to-month change, and annualized quarterly growth rate.

Table 2 shows how the employment data on which the WEI is based changed during the third quarter. The seasonally unadjusted data reported by the BLS shows modest increases in both payroll and household employment over the June to September period.[ii] However, after adjusting for seasonal variation the employment data indicate a substantially stronger labor market. Seasonally-adjusted payroll employment (+2,800) and seasonally-adjusted household employment (+6,620) are both up significantly from the start of the quarter. Typically, employment and the labor force decrease at the end of the summer as some seasonal jobs end and many students return to school, however this year employment and the labor force both increased in September, overriding the usual seasonal decline. The strong labor market is also reflected in the local unemployment rate of 3.4% which falls between the seasonally-adjusted estimates for the United States (3.7%) and Massachusetts (3.2%).[iii]

**Table 1**
**Worcester Economic Index (WEI)**
**September 2017 - September 2018**

| Month | Worcester Economic Index | Change from previous month | Quarterly Growth Rate, Annualized |
|---|---|---|---|
| September 2017 | 116.8 | 0.3 | 2.8% |
| October 2017 | 117.0 | 0.2 | |
| November 2017 | 117.2 | 0.2 | |
| December 2017 | 117.6 | 0.4 | 2.6% |
| January 2018 | 117.6 | 0.0 | |
| February 2018 | 118.1 | 0.5 | |
| March 2018 | 118.3 | 0.2 | 2.4% |
| April 2018 | 118.7 | 0.4 | |
| May 2018 | 119.0 | 0.3 | |
| June 2018 | 119.3 | 0.3 | 3.6% |
| July 2018 | 119.6 | 0.3 | |
| August 2018 | 119.9 | 0.2 | |
| September 2018 | 120.5 | 0.6 | 4.1% |

**Table 2**
**BLS Employment Estimates**
**Worcester NECTA, June 2018 – September 2018**

| | Not Seasonally Adjusted[ii] | | | Seasonally Adjusted[ii] | | |
|---|---|---|---|---|---|---|
| | June 2018 | September 2018 | Change Sept – June | June 2018 | September 2018 | Change Sept – June |
| Unemployment Rate | 4.1% | 3.4% | -0.7% | 3.6% | 3.4% | -0.2 |
| Payroll Employment | 295,700 | 295,900 | 200 | 291,700 | 294,500 | 2,800 |
| Household Employment | 353,117 | 354,537 | 1,420 | 350,614 | 357,234 | 6,620 |
| Labor Force | 368,358 | 366,957 | -1,401 | 365,072 | 369,916 | 4,844 |

## Worcester Economic Outlook

The Worcester Economic Index is based on employment and unemployment data for the local economy. In order to provide some insight into the future direction of the economy each issue of *Worcester Economic Indicators* includes a six-month forecast of the WEI derived from the current trajectory of the index as well as several leading economic indicators for the national economy. In addition a discussion of some local leading indicators is provided.

Looking forward, the Worcester Economic Index is expected to grow at an above trend pace during the coming six months. According to the September forecast, the WEI is expected to grow at a 3.1% annualized rate over the next two quarters, while the average of the July, August, and September forecasts is 2.7%. The September forecast and the third quarter average are both reported in table 3.

Table 3 also shows the growth forecasts broken down into the six components on which they are based. The first component is the long-run trend growth of the WEI which is estimated to be about 1.5% on an annualized basis.[iv] 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.

**Table 3**
**Breakdown of Projected Growth of WEI[v]**
**6-month growth forecast, annualized basis**

| Component | September 2018 | Third Quarter Average |
|---|---|---|
| Trend | 1.5% | 1.5% |
| Consumer Expectations | 0.0% | 0.0% |
| S&P 500 | -0.2% | 0.1% |
| Interest Rate Spread | -0.1% | -0.1% |
| Leading Credit Index™ | 0.3% | 0.3% |
| WEI | 1.6% | 1.0% |
| Total | 3.1% | 2.7% |

Components may not add to total due to rounding.

The strong September forecast is driven primarily by the recent performance of the WEI itself. Past values of the WEI are used in the forecast model because economies tend to exhibit momentum and therefore recent economic activity can serve as an indicator of the future path of the economy. The substantial increase in the WEI in September (see table 1) is the reason the WEI is providing a larger contribution to the September forecast (+1.6%) than it does when averaging the forecasts from each of the months in the quarter (+1.0%).

The recent performance of the S&P 500 has also had a differential impact on the two forecasts. As of October 26th the S&P 500 was down over 8%[vi] since the start of the month, which contributed to the -0.2% contribution to the September forecast. On the other hand, the average of the July, August, and September forecasts show the S&P providing a positive 0.1% contribution because the July and August forecasts were estimated prior to the market declines of the past month.[vii]

The interest rate spread, which is the difference between the yield on a 10-year Treasury bond and the federal funds rate, is a commonly used indicator of the direction of monetary policy. In 2018, the Federal Open Market Committee of the Federal Reserve has raised its target federal funds rate three times, including at its most recent meeting in September. The increase in the target has brought on a decrease in the interest rate spread, which represents a tightening of monetary policy. As a result, the interest rate spread is having a small negative impact on both the September and quarterly average forecasts.

Conditions in the credit markets, as measured by the Leading Credit Index™, continue to provide 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 is relatively easy to obtain, and therefore is contributing a positive 0.3% bump to the forecasts.[v]

The University of Michigan Index of Consumer Expectations, while relatively high by historical standards, has not moved much in recent months and therefore does not have an impact on the latest WEI forecasts.[v]

## 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 its 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 3 2017 to Quarter 3 2018**

| Indicator | Percent Change | Signal |
|---|---|---|
| New Business Incorporations[viii] | 9.9% | Positive |
| Massachusetts Initial Claims[ix] | -4.8% | Positive |

Continuing the trend over the past year, new business incorporations continue to provide a positive signal for future economic activity. The number of new businesses incorporated during the third quarter of 2018 increased by almost 10% compared to the third quarter of 2017.[viii] 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 third quarter in the Commonwealth of Massachusetts decreased from the third quarter 2017 level. This is also considered a positive signal because it indicates that few people were laid off from their jobs and forced to apply for unemployment compensation.[ix]

To sum up, the Worcester Economic Index (WEI) increased at a 4.1% annualized in the third quarter of 2018. The WEI is expected to grow at about 3.1% over the coming six months. Most leading indicators are positive, however recent declines in the stock market and continued tightening of monetary policy may potentially offset some of the positive momentum in the local economy. New business incorporations and Massachusetts initial claims are both offering positive signals at this time.

The next Worcester Economic Indicators report will be issued in early February 2019. Additional information about this project is available at: http://www1.assumption.edu/worcester-economic-indicators-project/.

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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] 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.
[iii] Data obtained from the Economy at a Glance of the BLS, https://www.bls.gov/eag/eag.us.htm, accessed 10/27/18.
[iv] The 1.5% trend value is higher than the 1.3% trend that has been part of the forecast model over the past few years. This is due to adjustments in the WEI scale discussed on page 1.
[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, October 26, 2018.
[vii] Most of the data used in this report is available with about a 1 month lag and therefore both the WEI and the WEI forecasts are reported with a 1 month lag as well. The exception is the S&P 500 data which is available without a lag. This is why the September forecast takes into account the performance of the S&P from October. Using only September S&P data for the September forecast would ignore readily available information.
[viii] Secretary of the Commonwealth of Massachusetts
[ix] Massachusetts Department of Employment and Training.