

# Worcester Economic Indicators

First Quarter 2015

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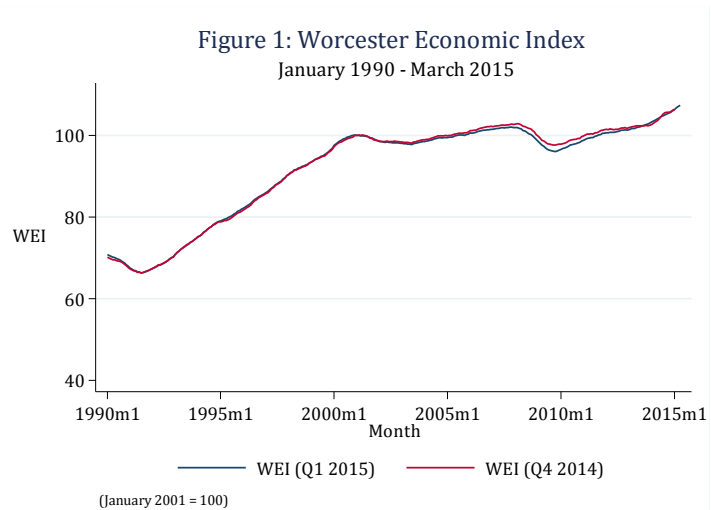
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*WEI grows 3.9% in First Quarter  
Leading Indicators Offering Positive Outlook*

## Worcester Economic Index

During the first quarter of 2015, the Worcester Economic Index (WEI) increased at a 3.9% annualized rate. This is an increase from the final quarter of 2014, when the WEI grew at a revised 3.1%. Continued strength in local employment figures lead to the increase. The Worcester Economic Index is based on Bureau of Labor Statistics (BLS) data on employment and unemployment. Recently, each of the three variables used to derive the WEI have been consistently improving. According to BLS payroll survey estimates, over the past year total nonfarm employment in the Worcester area increased by about 2.4% while the household survey showed a 4.4% increase in employment. In addition, since March 2014 the local unemployment rate has fallen by 1.4 percentage points.<sup>i</sup>

The employment and unemployment data used to calculate the WEI recently underwent a substantial revision by the Bureau of Labor Statistics as they implemented a new set of models to estimate local employment. As a result, the WEI was recalculated using the revised most up-to-date data. As figure 1 illustrates, while the monthly estimates of the WEI did change as a result of the BLS revisions the overall path of the WEI was nearly identical to those discussed in the fourth quarter 2014 report.<sup>ii</sup> Table 1 shows the values of the Worcester Economic Index over the past year, its month-to-month change and quarterly growth rates (annualized).



## Worcester Economic Outlook

Looking forward, the WEI is expected to continue above trend growth in the coming months. Based on recent performance of the WEI as well as four leading indicators of the national economy the WEI is projected to grow at about a 3.3% annualized rate

during the second and third quarters of 2015. Table 2 shows the March six-month forecast to be 3.3%, while the average of the January, February, and March forecasts is 3.2%.

Table 2 shows the growth forecasts broken down into its 6 components. The first component is the long-run trend growth of the WEI which has been about 1.2% on an annual basis. The values associated with the other components listed in table 2 represent the amount that each component contributes to the WEI forecast being above or below trend. As the table shows, the most recent forecast (March) is almost identical to the average of the January, February, and March forecasts.

Currently, the consumer expectations indicator adds 0.3% to the forecast for the Worcester Economic Index. This indicator which is based on the University of Michigan Survey of Consumer Sentiments has been trending upward recently. During the first quarter of 2015 the index averaged 88.1 compared to an average of 71.3 in the first quarter of 2014.<sup>iv</sup>

Improvement in consumer expectations often precede increases in household spending and therefore contribute to the above trend forecast of the WEI.

Conditions in credit markets also provide a positive contribution to the WEI forecast. The Leading Credit Index™ which is compiled by The

Conference Board each month is a composite of several financial sector variables that attempt to capture credit market conditions in the United States. Over the past several years as credit markets have recovered from the Great Recession this index has been providing a strong positive signal for the economy. So while the Leading Credit Index is contributing +0.3% to the latest WEI forecast, that amount is actually down from the 0.5%-0.6% contribution it made to WEI forecasts during 2014.

The interest rate spread, which is the difference between the yield on a 10-year Treasury bond and the federal funds rate, is included as a measure of monetary policy. Currently,

**Table 1**  
Worcester Economic Index (WEI)  
March 2014 – March 2015

Month	Worcester Economic Index	Change from previous month	Quarterly Growth Rate, Annualized
March 2014	103.8	0.3	3.0%
April 2014	104.0	0.2	
May 2014	104.3	0.3	
June 2014	104.6	0.3	3.1%
July 2014	104.8	0.2	
August 2014	105.0	0.2	
September 2014	105.2	0.2	2.4%
October 2014	105.4	0.2	
November 2014	105.7	0.3	
December 2014	106.0	0.3	3.1%
January 2015	106.3	0.3	
February 2015	106.7	0.4	
March 2015	107.0	0.3	3.9%

**Table 2**  
Breakdown of Projected Growth of WEI<sup>iii</sup>  
6-month growth forecast, annualized basis

Component	March 2015	Quarter 1 Average
Trend	1.2%	1.2%
Consumer Expectations	0.3%	0.3%
S&P 500	0.0%	0.0%
Interest Rate Spread	0.2%	0.2%
Leading Credit Index™	0.3%	0.3%
WEI	1.3%	1.2%
<b>Total</b>	<b>3.3%</b>	<b>3.2%</b>

Components may not add to total due to rounding.

this indicator adds +0.2% to the WEI forecast. So while the Federal Reserve may begin raising interest rates before the end of 2015, at this point the interest rate spread is still showing monetary policy to have a stimulative impact.

The fourth national leading indicator used to forecast the Worcester Economic Index, the S&P 500, is sending a neutral signal at this time. Following a strong 2014, the S&P 500 index is up only 1.3%<sup>v</sup> during the first four months of the year and therefore is not currently pushing the WEI forecast away from trend.

The recent growth of the WEI is the largest single contributor to the above trend forecast for the coming months. Past values of the WEI are included in the forecast because economies tend to exhibit momentum and therefore recent economic performance is a strong indicator of future performance.

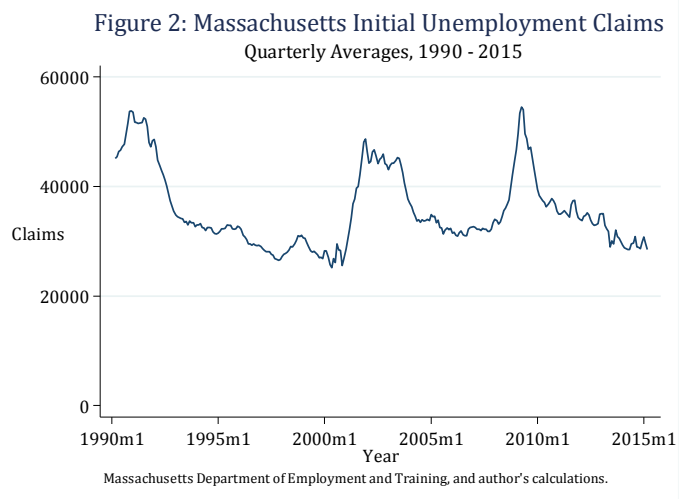
### Local Leading Indicators

Since the start, *Worcester Economic Indicators* reports have included a diffusion index of four local leading indicators, online help-wanted advertisements, new business incorporations, state-wide initial unemployment claims, and new residential building permits. Beginning with this report the local leading indicators will be examined on an indicator-by-indicator basis.

The number of online help-wanted advertisements, which is a measure of the demand for labor by employers, is considered a leading indicator of employment because before firms hire workers they typically advertise job openings. The Conference Board's Help Wanted Online Data Series® totals the number of unique advertised job opening from thousands of online job-boards. The data shows that in recent months there has been an upswing in this indicator for the Worcester area. On a seasonally-adjusted basis the number of online job openings has been higher during the first quarter of 2015 than at any point during 2014.<sup>vi</sup> This is a positive signal for the local economy.

The number of initial unemployment claims is also providing a positive signal at this time.

Over the past 6 months the number of initial claims in Massachusetts has fallen by about 3%<sup>vii</sup>. A reduction in the number of initial claims is an encouraging sign for the state economy as it suggests fewer employers are finding it necessary to lay-off workers due to weak product demand. However, as Figure 2 shows the level of initial claims is now lower than it has been since before the 2001 recession and therefore this particular indicator will probably not provide much of a



signal if the economy continues to improve. On the other hand, should initial unemployment claims begin to show a sustained increase that would certainly be a sign of a weakening economy.

The third local leading indicator is the number of new business incorporations in the Worcester NECTA.<sup>viii</sup> During the first quarter the average monthly number of incorporations was down slightly from December 2014, and also down compared to a year ago. This data series is quite volatile even after taking into account seasonal variation. New business incorporations are currently providing a modest negative signal. A fall in new business

**Table 3**  
**Local Leading Indicators**  
**Percentage Change from 1<sup>st</sup> Quarter 2014**

Indicator	Percentage Change	Signal
Online Help Wanted Ads <sup>vi</sup>	+9.4%	Positive
New Business Incorporations <sup>vii</sup>	-6.5%	Negative
Massachusetts Initial Claims <sup>viii</sup>	-0.5%	Positive

Author's calculations based on seasonally adjusted data.

incorporations is considered a negative signal because fewer new businesses mean less new business hiring. Table 3 summarizes the changes in the local leading indicators over the past year.

The number of new residential building permits issued is considered a leading indicator of activity in the construction sector because a permit is required before new construction can begin. Unfortunately, recent changes in the way the Bureau of Labor Statistics is gathering and releasing this data has made building permits less reliable as a precursor to local economic activity. Starting in January 2015, the fraction of Worcester area permit-issuing places reporting monthly to the BLS basis decreased to only 21% following a sample redesign undertaken by the BLS. Many of the places that had been reporting the data on a monthly basis are now reporting only annually. As a result building permits data from early 2015 is not comparable to 2014, when 73% of permit issuing places were part of the sample.<sup>ix</sup> Moving forward building permits will only be examined once per year.

To sum up, the Worcester Economic Index (WEI) grew at an annual rate of 3.9% during the first quarter of 2015. The six-month forecast for the WEI indicates growth will continue at above a 3% rate over the next two quarters. In addition, two of the three local leading indicators are providing positive signals for future economic performance at this time.

The next Worcester Economic Indicators report will be issued in early August 2015. Additional information about this project is available at: <http://www1.assumption.edu/worcester-economic-indicators-project/>.

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<sup>i</sup> Bureau of Labor Statistics (BLS). Payroll employment figures are obtained from the BLS State and Area Employment Database (SAE). Household employment and the unemployment rate is obtained from the BLS Local Area Unemployment Database (LAU). All employment data is for the Worcester NECTA which consists of the city of Worcester as well as 39 surrounding town located in south central Massachusetts and northeastern Connecticut. Since the local employment and unemployment BLS data is not seasonally-adjusted each of these data series are adjusted for seasonal variation using the X-12 ARIMA program developed by the U.S. Census Bureau.

<sup>ii</sup> The correlation coefficient between the two most recent estimates of the WEI was 0.99.

<sup>iii</sup> 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<sup>TM</sup>: 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.

<sup>iv</sup> University of Michigan Survey of Consumer Sentiments, retrieved from The Conference Board's Business Cycles Indicators database.

<sup>v</sup> Based on end of month closing values for S&P 500 retrieved from The Conference Board's Business Cycles Indicators database. Percentage change is the author's calculation.

<sup>vi</sup> The Conference Board Help Wanted Online<sup>®</sup> (HWOL).

<sup>vii</sup> Massachusetts Department of Employment and Training. Initial claims are adjusted for seasonal variation by the author using the X-12 ARIMA program of the U.S. Census Bureau.

<sup>viii</sup> Secretary of the Commonwealth of Massachusetts

<sup>ix</sup> U.S. Census Bureau, Building Permits Survey