Worcester Economic Indicators

First Quarter 2017
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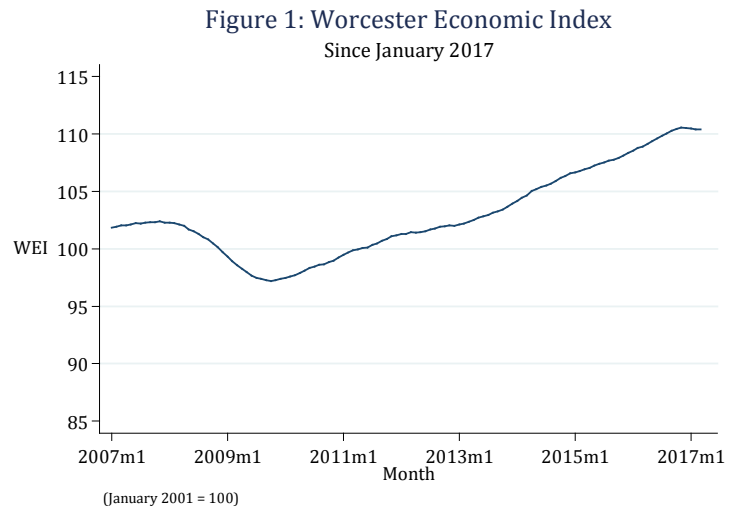http://www1.assumption.edu/worcester-economic-indicators-project/

First Quarter Slowdown
WEI off 0.4% to start 2017

Worcester Economic Index

Economic activity in the greater Worcester area slowed during the first quarter of 2017. Since December, the Worcester Economic Index (WEI) declined 0.4% on an annualized basis. This result is similar to the estimated 0.5% drop in the Massachusetts economy recently released by *Mass*Benchmarks.[i] At the national level first quarter GDP grew at a 0.7% annualized rate, which while stronger than the local economic performance still represented a

Figure 1: Worcester Economic Index
Since January 2017

(January 2001 = 100)

slowdown from the final months of 2016.[ii] The Worcester Economic Index is estimated using Bureau of Labor Statistics (BLS) data on employment and unemployment in the Worcester metropolitan area (NECTA). Figure 1 shows the WEI over the past 10 years.

Table 1 presents the Worcester Economic Index over the past 13 months, its month-to-month change, and annualized quarterly growth rate. As the table shows, the WEI grew consistently through much of 2016 before slowing in the final quarter. Since March 2016 the WEI is up 1.4% and during that time all three of the variables used to compute the WEI have moved in a positive direction. BLS estimates of payroll employment in the Worcester area increased in the Worcester area by about 3500 jobs over the past year, while the household employment figures increased by over 8000. The unemployment rate fell from 5.0% in March 2016 to 4.2% in March 2017.[iii]

However, more recent data on Worcester area employment and unemployment has been less encouraging. Table 2 shows how employment statistics have changed since December of last year.

As discussed in past reports, there is a seasonal component to employment data. Typically there is a decrease in employment during the first few months of the year as seasonal hiring for the holiday season unwinds. As table 2 shows, payroll employment fell from December to March while household employment increased.[v] But month-to-month comparisons of not seasonally-adjusted data are problematic and therefore the employment and unemployment data is adjusted for seasonal variation before being used to estimate the WEI. The seasonally-adjusted employment estimates shown in table 2 indicate that both payroll and household employment were actually up in the first quarter of 2017. Therefore, the rise in the local unemployment rate over the last few months is the reason the WEI fell to start the year. On a seasonally-adjusted basis the Worcester unemployment rate increased to 4.0% in March, which is slightly above the Massachusetts unemployment rate of 3.6%, but still below the national rate of 4.5%. Furthermore, the rise in the unemployment rate is due to the increase in the size of the labor force which is also shown in table 2. Since December, on a seasonally-adjusted basis the number of people entering the labor force exceeded the number that found jobs which pushed up the unemployment rate even as the number of people working increased. The increase in the labor force may actually be an indication of labor market strength as people may be entering the labor force because they believe they will be successful at landing a job.

Table 1
Worcester Economic Index (WEI)
March 2016 - March 2017

Month	Worcester Economic Index	Change from previous month	Quarterly Growth Rate, Annualized
March 2016	108.9	0.1	2.2%
April 2016	109.2	0.3	
May 2016	109.4	0.2	
June 2016	109.6	0.2	2.6%
July 2016	109.8	0.2	
August 2016	110.1	0.3	
September 2016	110.3	0.2	2.5%
October 2016	110.4	0.1	
November 2016	110.5	0.1	
December 2016	110.5	0.0	0.9%
January 2017	110.5	0.0	
February 2017	110.4	-0.1	
March 2017	110.4	0.0	-0.4%

Table 2
BLS Employment Estimates
Worcester NECTA, December 2016-March 2017

	Not Seasonally Adjusted[iv]			Seasonally Adjusted[iv]		
	December 2016	March 2017	Change Mar -Dec	December 2016	March 2017	Change Mar -Dec
Unemployment Rate	3.0%	4.2%	1.2	3.3%	4.0%	0.7
Payroll Employment	286,900	282,100	-4800	282,416	284,556	2140
Household Employment	333,471	338,847	5376	332,612	339,091	6479
Labor Force	343,909	353,790	9881	344,479	353,440	8961

Worcester Economic Outlook

Looking forward, the Worcester Economic Index is expected to return to positive growth over the coming months. According to the forecast model which utilizes recent trends in the WEI as well as four leading indicators of the national economy, the WEI is expected to grow modestly over the next six months. Table 3 shows the March forecast is 0.6%, while the average of the January, February, and March forecasts is 0.4%.

Table 3 also shows the growth forecast broken down into its 6 components. The first component is the long-run trend growth of the WEI which is estimated to be about 1.3% on an annualized basis. Each of the other components in the forecast are shown in table 3 as the amount that they push the WEI above or below trend. The recent weakness in the

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

Component	March 2017	Quarter 1 Average
Trend	1.3%	1.3%
Consumer Expectations	0.3%	0.2%
S&P 500	0.1%	0.1%
Interest Rate Spread	0.0%	0.0%
Leading Credit Index™	0.0%	0.1%
WEI	-1.1%	-1.3%
Total	0.6%	0.4%

Components may not add to total due to rounding.

WEI is the only factor that is depressing the overall forecasts. Recent values of the WEI are included in the forecast model in order to capture short-term trends in the local economy which help improve economic projections.

Currently, the estimate of consumer expectations derived from the University of Michigan Survey of Consumer Sentiments is providing a small boost to the WEI forecast. As figure 2 shows the Index of Consumer Expectations has been near its five-year high in recent months.

Figure 2: Index of Consumer Expectations
March 2012 to March 2017

Data from: University of Michigan Survey of Consumer Sentiments
http://www.sca.isr.umich.edu/

Other components of the WEI forecast are making relatively small contributions to the growth forecasts. The S&P 500 which as of April 28th was up almost 6.5% since the start of the year is adding 0.1% to the March forecast. While the Leading Credit Index™ and the interest rate spread are currently neutral with regard to the March forecast. These two indicators were making consistently positive contributions to the growth forecasts during the 2013-2015 period when the Federal Reserve was maintaining an aggressive expansionary monetary policy stance but have become less of a factor after the Fed began to raise interest rates in December 2015.

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. The three local leading indicators which have been discussed in past reports are: state-wide initial unemployment claims, new business incorporations for the Worcester NECTA, and online help-wanted advertisements also for the Worcester NECTA. Local leading indicators are shown in table 4.

Following the pattern exhibited throughout the past year, the number of new business incorporations in the Worcester area rose in the first quarter of 2017 compared to

Table 4
Local Leading Indicators
Percentage Change
Quarter 1 2016 to Quarter 1 2017

Indicator	Percent Change	Signal
New Business Incorporations[vii]	4.0%	Positive
Massachusetts Initial Claims[viii]	-0.9%	Positive

the first quarter of 2016. Compared to a year ago the number of incorporations is up about 4.0%.[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 first quarter in the Commonwealth of Massachusetts fell 0.9% from the first quarter of 2016. 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. The modest fall in initial claims from 21,080 in March 2016 to 20,072 in March 2017, while a positive signal cannot be interpreted as particularly strong[viii].

The third local leading indicator, online help-wanted advertisements again fell sharply during the first quarter of 2017[ix]. However, recent changes in the structure and pricing of online help-wanted ads has caused this series to become less reliable as an indicator of labor market conditions. The Conference Board, which releases the Help Wanted Online® (HWOL) Data Series, recently announced that it is currently reviewing its methodology for compiling the data series and will be making adjustments to improve the quality of the data.[x] Until the revision is complete, online help-wanted advertisements won't be considered in *Worcester Economic Indicator* reports.

To sum up, the Worcester Economic Index (WEI) decreased 0.4% in the first quarter of 2017. The WEI is expected to grow at 0.4-0.6% over the coming six months. The slow growth forecast is due to the underperforming first quarter results as all of the national and local leading indicators followed for this report are providing neutral or positive signals at this time.

The next Worcester Economic Indicators report will be issued in early August 2017. Additional information about this project is available at: http://www1.assumption.edu/worcester-economic-indicators-project/.

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[i] MassBenchmarks, The Current and Leading Indices – March 2017, http://www.massbenchmarks.org/indices/indices.htm, accessed 4/29/17.

[ii] US Department of Commerce, Bureau of Economic Analysis, https://www.bea.gov/newsreleases/national/gdp/2017/gdp1q17_adv.htm, accessed 4/28/17.

[iii] 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.

[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] Data obtained from the Bureau of Labor Statistics SAE and LAU databases.

[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. Initial claims for the Worcester area were originally part of the index, but that data has not been available since June 2013. Since it is desirable to utilize information that is as local as possible, if initial claims for Worcester becomes available in the future the index will be revised to include that data.

[ix] The Conference Board Help Wanted Online® (HWOL).

[x] The Conference Board Help Wanted Online® (HWOL). https://www.conference-board.org/data/helpwantedonline.cfm