

Worcester Economic Indicators

Second Quarter 2017

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WEI up 1.1% in Second Quarter

Health Care, Leisure & Hospitality Industries Lead Hiring

Worcester Economic Index

Following a slow start to the year, the greater Worcester economy grew at a modest clip during the second quarter of 2017. Since March, the Worcester Economic Index (WEI) is up 1.1% on an annualized basis. This result follows the revised 0.3% drop during the first quarter. The 1.1% growth rate of the WEI falls short of the 2.6% second quarter growth rate of real GDP turned in by the national economy.ⁱ Figure 1 shows the WEI over the past 10 years.

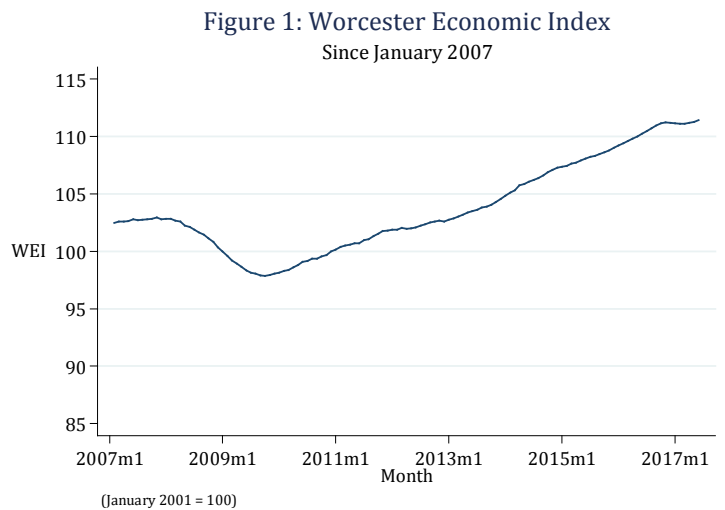


Table 1 presents the Worcester Economic Index over the past 13 months, its month-to-month change, and annualized quarterly growth rate. As the table shows, after growing at over 2% during the second and third quarters of 2016, the economy slowed down in late 2016 through early 2017. The 1.1% growth rate for the second quarter matches the 12-month growth rate of the WEI from June 2016 through June 2017. The Worcester Economic Index is estimated using Bureau of Labor Statistics (BLS) data on employment and unemployment in the Worcester metropolitan area (NECTA). According to the BLS survey of households, the unemployment rate has increased from 4.4% in June 2016 to 4.6% in June 2017, while household employment has gone up by 6400. The BLS payroll survey also showed an increase in the number of jobs, rising by about 4200 since last June.ⁱⁱ

See page 3 for a breakdown of job growth by industry sector using data from the BLS payroll survey.

A look at the second quarter 2017 employment data shows a labor market that is not exhibiting substantial job growth. As table 2 shows, both payroll employment and household employment rose during the March to June period.ⁱⁱⁱ However, month-to-month comparisons of not seasonally-adjusted data can provide misleading

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

Month	Worcester Economic Index	Change from previous month	Quarterly Growth Rate, Annualized
June 2016	110.2	0.2	2.3%
July 2016	110.5	0.3	
August 2016	110.7	0.2	
September 2016	111.0	0.3	2.7%
October 2016	111.1	0.1	
November 2016	111.2	0.1	
December 2016	111.2	0.0	0.9%
January 2017	111.1	-0.1	
February 2017	111.1	0.0	
March 2017	111.1	0.0	-0.3%
April 2017	111.2	0.1	
May 2017	111.3	0.1	
June 2017	111.4	0.1	1.1%

information. After correcting for seasonal variation, we see that the change in employment from both the payroll and household surveys were lower than the not seasonally-adjusted estimates, with household employment actually showing a decrease during the second quarter. The seasonally-adjusted unemployment rate for Worcester was up just slightly since the end of the first quarter but at 4.1% is slightly less than both the national rate (4.4%) and the Massachusetts rate (4.3%) for June.ⁱⁱⁱ Taken together, the data shows a labor market that is steady but without much growth which is the reason the WEI grew at a modest 1.1% rate during the second quarter.

Table 2
BLS Employment Estimates
Worcester NECTA, March 2017 - June 2017

	Not Seasonally Adjusted ^{iv}			Seasonally Adjusted ^{iv}		
	March 2017	June 2017	Change June - Mar	March 2017	June 2017	Change June - Mar
Unemployment Rate	4.2%	4.6%	0.4	4.0%	4.1%	0.1
Payroll Employment	282,100	289,200	7,100	284,900	286,000	1,100
Household Employment	338,939	340,158	1,219	339,183	337,924	-1,259
Labor Force	353,873	356,710	2,837	353,523	353,322	-201

Worcester Economic Outlook

Over the coming six months, the Worcester Economic Index is expected to continue the slow growth experienced during the past quarter. According to the forecast model which utilizes recent movements in the WEI as well as four leading indicators of the national economy, the WEI is expected to grow at just above 1.0% during the third quarter. Table 4 shows the June forecast is 1.3%, while the average of the April, May, and June forecasts is 1.0%.

A look at employment by sector.

Over the past year, the greater Worcester economy has added about 4,200 jobs according to the Bureau of Labor Statistics Current Employment Statistics Survey. This 1.5% increase is up slightly from the 1.2% increase for the 12-month period ending in June 2016. Table 3 breaks down employment growth by sector for both Worcester and Massachusetts. In Worcester, employment in the goods-producing sector grew by 2.0% due solely to strong growth in construction while the manufacturing sector was basically flat, which is noteworthy because it represents at least a temporary pause in the long-term decline. The leisure/hospitality sector had the strongest growth of the Worcester area service-providing industries, growing at 6.1% and outpacing both the long-term growth trend and the Massachusetts rate. Lagging local sectors were professional & business services (-2.6%) and information services (-2.5%).

Table 3
Employment Breakdown by Industry
Worcester and Massachusetts

Employment Category	Worcester			Massachusetts		
	Percent change since June 2016	Avg. annual percent chg. since 2000	Share of total nonfarm employment	Percent change since June 2016	Avg. annual percent chg. since 2000	Share of total nonfarm employment
Total Nonfarm	1.5%	0.4%	100.0%	1.9%	0.5%	100.0%
Private Sector	1.5%	0.3%	85.0%	2.0%	0.5%	87.5%
Goods Producing	2.0%	-1.9%	13.8%	0.3%	-1.7%	11.0%
Construction/Nat. Res.	7.3%	0.9%	4.0%	1.7%	1.2%	4.2%
Manufacturing	0.0%	-2.6%	9.8%	-0.7%	-2.9%	6.7%
Service Providing	1.4%	0.6%	86.2%	1.6%	0.8%	89.0%
Wholesale trade	0.0%	-0.5%	3.6%	-0.7%	-0.6%	3.4%
Retail trade	-0.7%	-0.3%	10.4%	1.6%	-0.1%	9.9%
Transp./utilities	3.1%	2.4%	4.6%	1.1%	0.1%	2.7%
Information	-2.5%	0.0%	1.3%	1.9%	-0.9%	2.5%
Financial	0.0%	0.0%	5.3%	2.9%	-0.1%	6.3%
Prof. & bus. services	-2.6%	-0.9%	9.2%	2.8%	0.8%	15.6%
Education	0.9%	2.1%	3.8%	1.3%	0.7%	4.2%
Health	2.9%	2.8%	19.3%	4.1%	2.6%	17.4%
Leisure & hospitality	6.1%	1.1%	9.6%	0.8%	1.7%	10.6%
Government	1.4%	0.8%	15.0%	1.3%	0.3%	12.5%
Other services	0.9%	1.2%	3.9%	1.4%	1.3%	3.9%

The health care sector is the largest employer in the greater Worcester area with 19.3% of the total employment, followed by the government (15.0%) and retail sectors (10.4%). Health care also has the largest employment share statewide (17.9%), followed professional & business services (15.6%) and government (12.5%).

Figure 2 shows the net number of jobs added in each sector in the greater Worcester area over the past 12 months. Health care and leisure & hospitality each added about 1600 jobs since June 2016. While construction, which grew at the highest rate, only added about 800 jobs since it is a smaller share of the economy.

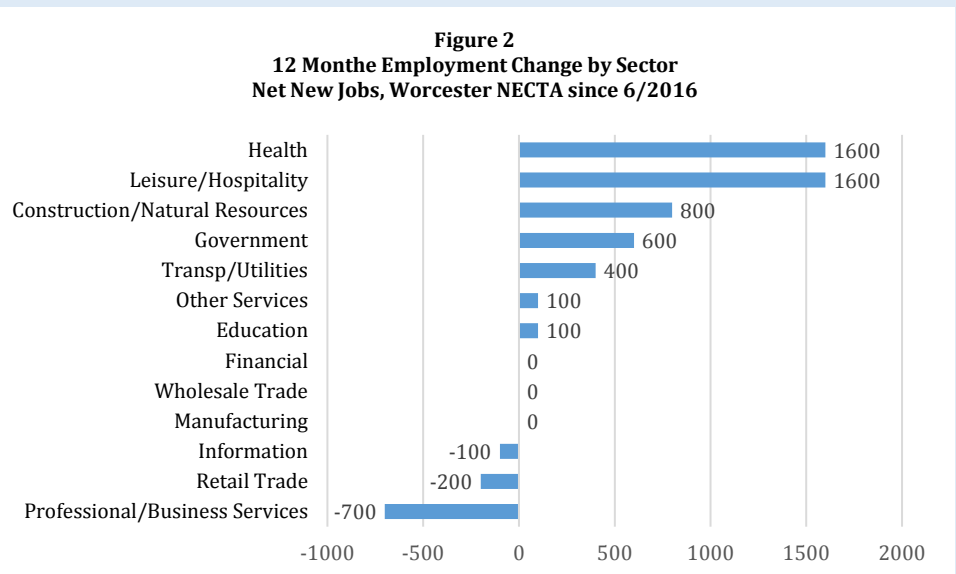


Table 4 also shows the growth forecast broken down into its 6 components. The first component is the long-run trend growth of the WEI which is estimated to be about 1.2% on an annualized basis. The values shown for each of the other components listed in table 4 represent the amount that each component contributes to the WEI forecast being above or below trend. The recent slow growth of the WEI is acting as a drag on the forecasts. Past 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.

Table 4
Breakdown of Projected Growth of WEI^v
6-month growth forecast, annualized basis

Component	June 2017	Quarter 2 Average
Trend	1.2%	1.2%
Consumer Expectations	-0.1%	-0.1%
S&P 500	0.1%	0.1%
Interest Rate Spread	0.0%	0.0%
Leading Credit Index TM	0.2%	0.1%
WEI	-0.1%	-0.4%
Total	1.3%	1.0%

Components may not add to total due to rounding.

Currently, the estimate of consumer expectations derived from the University of Michigan Survey of Consumer Sentiments is making a small negative contribution to the WEI forecast. This is due to the fact that the June Index of Consumer Expectations of 83.9 is down from 90.3 since the start of the year.^v

Changes in the S&P 500 stock index are included in the forecast model as a measure of investor attitudes toward expected future business conditions. As of July 28th the S&P 500 is up over 10% since the start of the year, which contributes a 0.1% boost to the WEI forecast.

Conditions in the credit markets, as measured by the Leading Credit IndexTM, are currently providing a positive bump to the WEI forecast. The Leading Credit IndexTM is compiled by The Conference Board each month and is a composite of several financial sector variables that aims to capture credit market conditions in the United States.

The final component, interest rate spread, is neutral with respect to the WEI forecast. The 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. During much of the post-recession period the interest rate spread was pushing up the WEI forecast. As the Federal Reserve has increased the federal funds rate four times since December 2015, the spread has become a neutral or slightly negative contributor to WEI forecasts, which is consistent with the Fed's goal of restraining economic growth in order to prevent an increase in inflation.

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 NECTA, and initial unemployment claims for Massachusetts are shown in table 5.

Table 5
Local Leading Indicators
Percentage Change
Quarter 2 2016 to Quarter 2 2017

Indicator	Percent Change	Signal
New Business Incorporations ^{viii}	15.9%	Positive
Massachusetts Initial Claims ^{ix}	-6.7%	Positive

Continuing the trend from throughout the past year, the number of new business incorporations in the Worcester area rose in the second quarter of 2017 compared to the second quarter of 2016. Compared to a year ago the number of incorporations has increased almost 16.0%.^{vi} 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 fell 6.7% from the second 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^{vii}.

To sum up, the Worcester Economic Index (WEI) increased 1.1% in the second quarter of 2017. The WEI is expected to grow at roughly that pace over the coming six months. Both new business incorporations and initial unemployment claims are providing positive signals at this time.

The next Worcester Economic Indicators report will be issued in early November 2017.

Additional information about this project is available at:

<http://www1.assumption.edu/worcester-economic-indicators-project/>.

Prepared by:

Thomas White, Ph.D.

Department of Economics & Global Studies

Assumption College

508-767-7556

twhite@assumption.edu

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ⁱ US Department of Commerce, Bureau of Economic Analysis,

https://www.bea.gov/newsreleases/national/gdp/2017/gdp2q17_adv.htm, accessed 7/28/17.

ⁱⁱ 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.

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

^{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} Secretary of the Commonwealth of Massachusetts

^{vii} 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.