

ECONOMIC UPDATE

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Issue 37

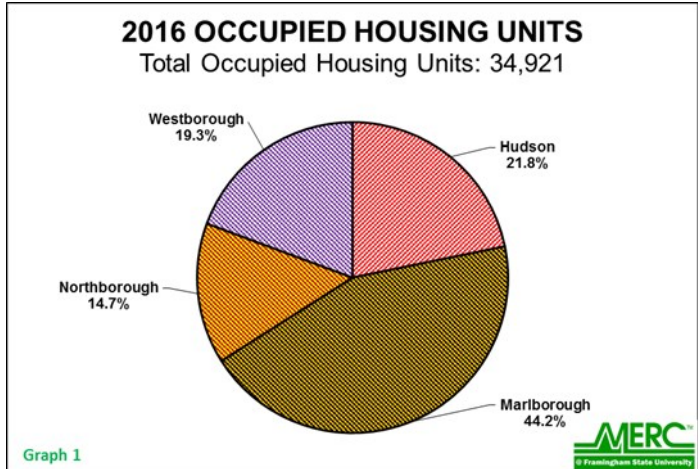
Spring 2018

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Occupied Housing Units in the Greater Marlborough Region

By: Sarah Horwitz

The MetroWest Economic Research Center (MERC) at Framingham State University uses estimates from the 2000 Census, the 2010 Census, and the 2012 through 2016 American Community Survey (ACS) for the Greater Marlborough Region to gather data on occupied housing units. The data was collected from the



2016 ACS conducted by the U.S. Census Bureau which provides estimates of population, household demographics and more. Data was also gathered from the 2000 Census and the 2010 Census. The Greater Marlborough Region (GMR) is made up of the following communities: Hudson, Marlborough, Northborough, and Westborough. Graph 1 above represents

Continued on page 4

Record Highs in 2016 for Employment and Payroll

By: Mark Dexter

The economic expansion continued in 2016 with new historic highs in total annual employment and total annual payroll for several substate regions: Greater MetroWest (GMW), South Shore (SS), Blackstone Valley (BV) and 495/MetroWest (495/MW). The 495/MW region includes thirty-five communities, seventeen of which are located in other regions as well. This article compares the 2016 high with the previous economic peak of 2008 and discusses the 2009 Great Recession, re-

2016 REGIONAL COMPARISON
Total Communities & Jobs

Region	# of Communities	2016 Jobs
Greater MetroWest	13	190,500
South Shore	11	160,000
Blackstone Valley	10	28,700
495/MW	35	332,800

Table 1

covery and expansion. Employment refers to jobs at establishments or places of work located within regions, not necessarily residents of said regions. MERC employment databases rely on ES-202 reports from the Massachusetts Executive Office of Labor and Workforce Development.

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GFR and State Unemployment Rates Rise, While Nation's Drops



Jack Murphy

Intern IV

Focus

Unemployment

Major

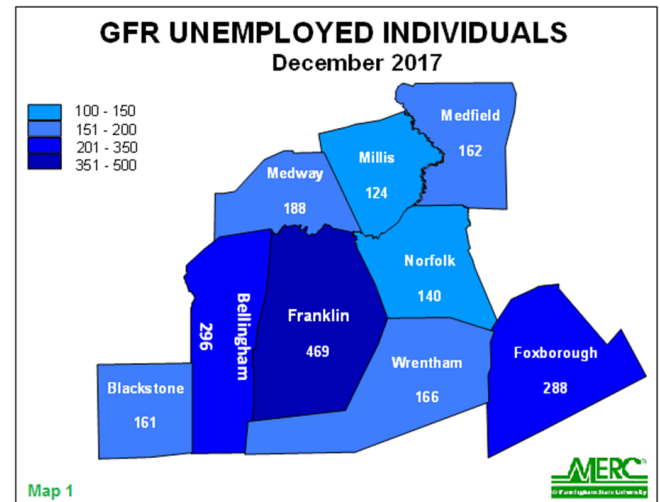
Finance & Financial
Planning
YOG 2018

By: Jack Murphy

Each month the MetroWest Economic Research Center (MERC) at Framingham State University calculates a composite unemployment rate for the Greater Franklin Region (GFR). This region is comprised of nine communities: Bellingham, Blackstone, Foxborough, Franklin, Medfield, Medway, Millis, Norfolk, and Wrentham. In December 2017, with the exception of Blackstone, each community in the region posted lower unemployment

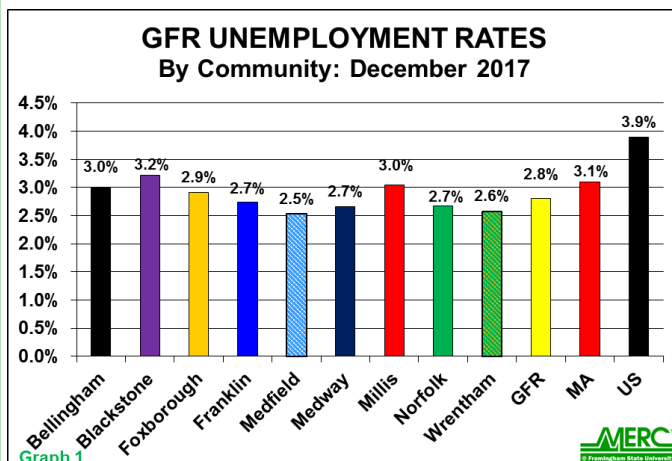
rates than those of the state at 3.1% and the nation at 3.9%. Among the communities in the region, Blackstone posted the highest unemployment rate of 3.1% followed by Bellingham with a rate of 3.0% and Foxborough and Millis, both at 2.9%. In contrast, Medfield posted the lowest unemployment rate in the region with 2.4%, followed by Franklin and Medway with rates of 2.6% each. See Graph 1 below.

In December 2017, the total number of unemployed in GFR was 1,994 individuals. Of the nine communities in the region, Frank-



lin had the largest number of unemployed with 469 individuals, followed by Bellingham with 296 and Foxborough with 288. Combined together, these three communities accounted for more than half of the total unemployed individuals in GFR. Millis, on the other hand, posted the smallest number of unemployed with only 124 individuals, followed by Norfolk and Blackstone with 140 and 161, respectively. See Map 1 above.

Since the unemployment rate is the ratio of the number of unemployed to the number of individuals in the labor force, then it is important to investigate the labor force in GFR. In December 2017, the labor force in GFR, which includes both those who are employed and unemployed, totaled 73,227 individuals. Franklin contributed the most to this labor force with 18,009 individuals or 24.6% of total labor force in the region. This implies that about one out of four persons in the labor force in GFR lived in Franklin. The next largest contributors to the labor force were Foxborough and Bellingham with 9,925 and 9,913 individuals, respectively. These three communities together made up about 52% of the total labor force in the region. The three smallest contributors to the labor force in the region were Millis, Blackstone, and Norfolk which posted 5.9%, 7.0%, and 7.1% of the total labor force, respectively. See Graph 2 be-



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Municipal Revenue and Expenditures for 495/MetroWest Region

By: Steven DeMeo



Steven DeMeo

Intern II

Focus

Municipal Revenue

Major

Business & IT
YOG 2019

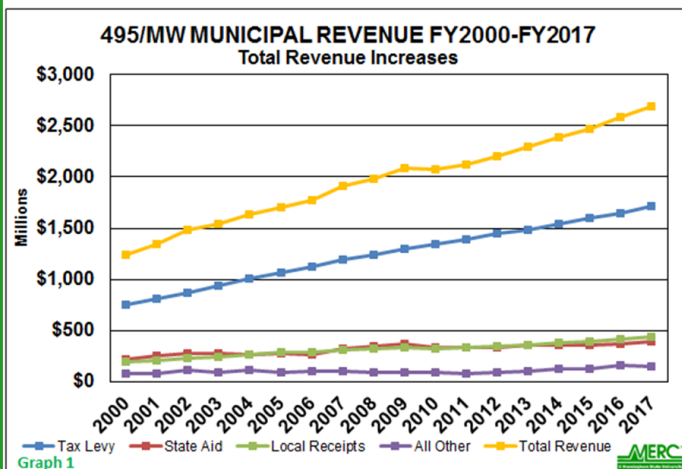
Each year, the MetroWest Economic Research Center collects data on Municipal Revenue and Expenditures for the 495/MetroWest Region (495/MW). In years past, the region was formed by 33 communities. However, Grafton and Westford were recently added, making this large geographical area now 35 communities. The region is within the bounds of Westford to the north, Natick to the east, Wrentham to the south, and Shrewsbury to the

west.

Four categories contribute to Municipal Revenue. These categories are Total Tax Levy, State Aid, Local Receipts, and "All Other." The Total Tax Levy is made up of taxes from residential, industrial and commercial real estate, and personal property. State Aid is money given by the state to fund education and general government. Local Receipts include motor vehicle excise taxes, licenses, and charges for services. Lastly, "All Other" includes all available free cash.

From Graph 1 below, we can see the nominal change over time in total revenue generated within the 35 municipalities from FY2000 to FY2017. To communicate this change, the graph is divided into the four components that form total revenue, which are the same as Municipal Revenue as previously mentioned. As of FY2000, Total Revenue was just over \$1.2 billion. By FY2017, this number climbed to over \$2.7 billion, marking an increase of 116.9%. During this period, the Total Tax Levy increased from \$751.4 million to \$1.7 billion, an increase of over \$965.7 million, or 128.5%. Also worth noting, the Total Tax Levy is the only category on Graph 1 that has never experienced a decrease since FY2000. State Aid increased over the same time period from \$220 million to \$386 million, a gain 75.7%. Furthermore, State Aid is the only category that has not registered an increase of over 100% since FY2000, showing that proportionately the tax levy has grown as state aid has fallen in the 495/MW region. Local Receipts revenue increased from \$192.2 million in FY2000 to \$432.4 million in FY2017, or 125.0%. The "All Other" category contributed the lowest portion of Total Revenue over the past 17 years. Most recently in FY2017, "All Other" contributed just 5.4% of Total Revenue. However, this category still increased from \$75.2 million in FY2000 to \$150.8 million in FY2017, which is slightly more than double.

Graph 2 on page 6 shows the Residential and Commercial & Industrial (C & I) total tax levy amounts by 495/MW community for FY2017 with the three smallest and three largest tax levy amounts. When comparing these six communities, (Framingham, Natick, Marlborough, Boxborough, Hopedale, and Berlin) one can see that the total tax levy amounts vary substantially. The largest Residential and C & I tax levies came from Framingham, Natick, and Marlborough.



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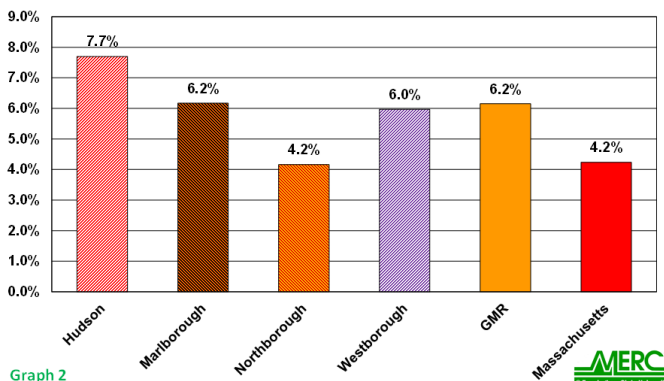
**Sarah Horwitz**

Intern II
Focus
 Census
Major
 Mathematics
 YOG 2018

the total occupied housing units in the Greater Marlborough Region. The total number of occupied housing units in GMR, according to the 2016 ACS is 34,921 units. Marlborough made up approximately 44.2% of GMR's total occupied housing at 15,442 units. The amount is significantly larger than the other communities in GMR, as Hudson had the next highest percentage of occupied housing units, at approximately 21.8% of GMR's total, which is

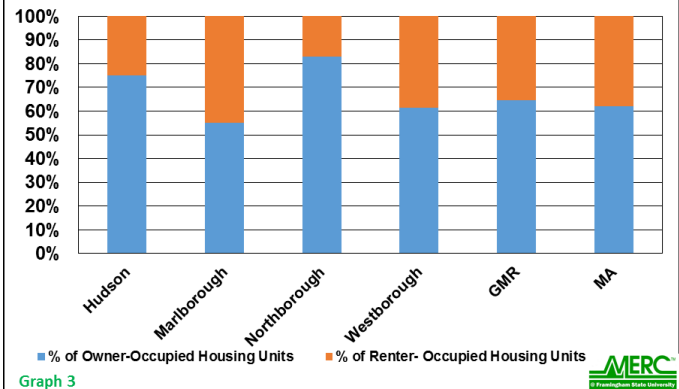
equivalent to 7,605 occupied housing units, representing less than half of Marlborough's occupied housing units. Westborough had the next highest percentage of GMR's total, falling at 19.3%, or 6,757 occupied housing units. Northborough had the lowest percentage of occupied housing units in GMR with a value of 14.7%, which comprises only 5,117 units. Graph 2 below represents the total percent change of occupied housing units in GMR from the years 2000 to 2010. By looking at the percent change from 2000 to 2010, Northborough presented the smallest percentage change with an approximate 4.2%

% CHANGE OF OCCUPIED HOUSING UNITS
 Census Data: 2000-2010



Graph 2

2016 ACS % OWNER VS. RENTER OCCUPIED



Graph 3

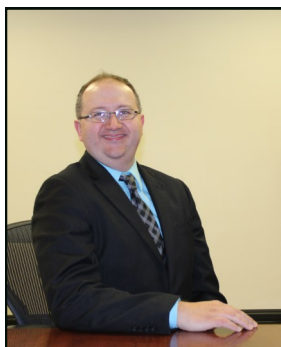


increase in occupied housing units. Westborough had the next lowest percent increase at 6.0%. Marlborough followed with a 6.2% increase in units, and Hudson had the highest percent increase of the four communities with 7.7%. As a whole, GMR had a 6.2% increase between 2000 and 2010, showing that all the communities either had the same or a smaller percent increase as GMR, except Hudson. However, the state of Massachusetts had a 4.2% increase in occupied housing units between the years of 2000 and 2010, exhibiting a lower percent increase than all the GMR communities.

Graph 3 above represents owner-occupied housing units versus renter occupied housing units reported from the 2016 ACS. Hudson reported 74.9% of occupied housing units to be owner-occupied, while 25.1% of occupied housing units are renter-occupied. It implies that almost 3 out of 4 occupied housing units are owner-occupied in Hudson, while 1 out of 4 are renter-occupied. Marlborough reported the closest margin among owner versus renter occupied. The 2016 ACS revealed that 55.0% of Marlborough's occupied housing units were owner-occupied, while 45.0% were reported as renter-occupied. Northborough presented the largest gap between owners and renters, where 83.0% of occupied housing units were owner occupied, and only 17.0% were renter

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Mark Dexter

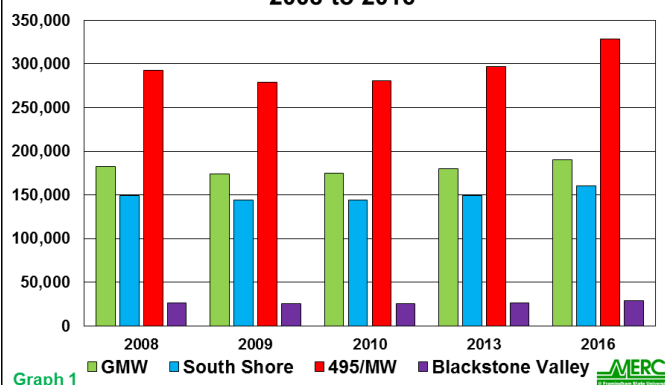
Intern III
Focus
Employment
Major
Economics
YOG 2018

In 2016 all four regions posted new record highs in employment. Leading the way was 495/MW with 332,800 jobs, including 3,900 new jobs, an increase of 1.2% from 2015: See Table 1 on page 1. GMW, comprised of the Greater Marlborough and MetroWest regions, posted a new high of 190,500 jobs, up 1,500 jobs, or 0.8%. The SS, posted 160,000 jobs, up 3,000 jobs, or 1.9% from 2015. BV, the smallest region in total employment, rose to a record 28,700, up 400 jobs, or 1.4%.

The previous economic peak occurred in 2008: GMW and 495/MW set record highs at that time. The abrupt onset of the 2009 Great Recession caused all four regions to suffer major job losses. 495/MW lost 13,800 jobs in one year, or -4.5%, this was the largest absolute loss among the four regions. GMW lost 8,200 jobs, or -4.5% of employment, followed by BV losing -3.7%. In 2009 the SS, still not fully recovered from the dot com recession of 2001-03, lost -3.6% from 2008. See Graph 1 below.

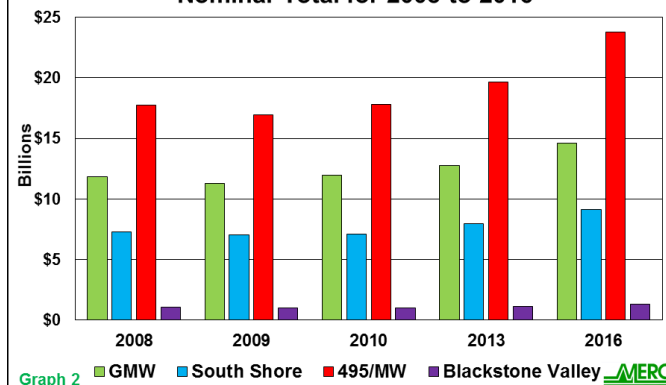
Recovery from the Great Recession

REGIONAL EMPLOYMENT 2008 to 2016



TOTAL PAYROLL BY REGION

Nominal Total for 2008 to 2016



began very quickly with all regions showing modest improvement in employment in 2010, ranging from Blackstone Valley's increase of 1.1% in total employment, to South Shore's gain of 0.1%. By 2013, SS, BV and 495/MW had fully recovered, posting numbers exceeding 2008 total employment. The following year GMW joined the expansion. From the trough of the Great Recession in 2009 through 2016, 495/MW experienced the largest absolute gain in employment, surging by 37,200 jobs, a 12.6% gain in seven years. GMW ranked second in absolute gain, adding 16,500 jobs, a 9.5% increase. BV ranked first in percentage gains, growing by 12.7% or 3,200 jobs. The SS, ranked second in percentage terms, increased by 11.3%, or 16,200 jobs.

Similar to employment, total payroll peaked in all regions in 2008 with, at the time, record highs. See Graph 2 above. Total Payroll includes employee salary, bonus, annual leave, sick time, stock options, tips, etc. The Great Recession however, caused losses across all regions in 2009. The hardest hit was 495/MW, down 4.4% in total payroll, followed by GMW, -4.3%, SS, -4%, and BV, -3.8% in total payroll. Again, as with employment, recovery and expansion in payroll started quickly. In 2010, GMW and 495/MW posted total payroll numbers greater than those of 2008. SS and BV followed in 2011 posting payroll totals greater than 2008 showing the recovery was over and expansion

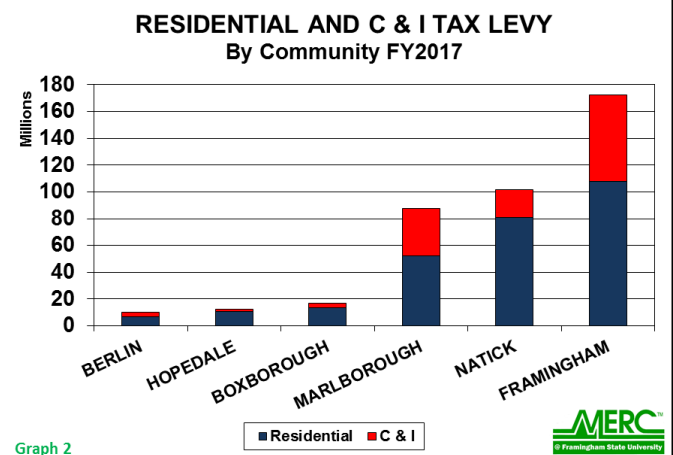
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Federal Reserve Challenge 2017

In the fall of 2017, MERC interns participated in the College Federal Reserve Challenge hosted at the Boston Federal Reserve. The Fed Challenge is a competition between other universities designed to connect economics to the real world by role playing as monetary policymakers. Participating in this role involved analyzing and presenting economic conditions to a panel of economists and recommending implications for monetary policies to better the future of the current conditions. MERC senior intern Mark Dexter led the Federal Reserve Challenge team of three which included three other MERC interns: Kelsi Gunarathne, Jennifer Pinto, and Jonathon Vos. This was the first time in five years that Framingham State University participated in this prestigious challenge.



Continued from page 3



Framingham received \$107.7 million in Residential taxes and \$64.9 million in C & I tax levies. The lowest Residential and C & I tax levies came from Berlin, Hopedale, and Boxborough. Berlin produced just \$3.3 million from C & I tax levies and \$6.9 million in Residential tax levies for a total of \$10.2 million, a \$162.4 million difference in comparison to the largest contributor, Framingham, with a total of \$172.6 million.

On Graph 3 on page 7, one can see municipal revenue per capita for the three highest spending municipalities and the three lowest spending municipalities within the 495/MW region. Municipal revenue per capita can be viewed as spending per capita as well, since municipalities are required to work with a balanced budget, or in other words, spending equals revenue. Through this graph, it can be seen that municipal revenue per capita varies

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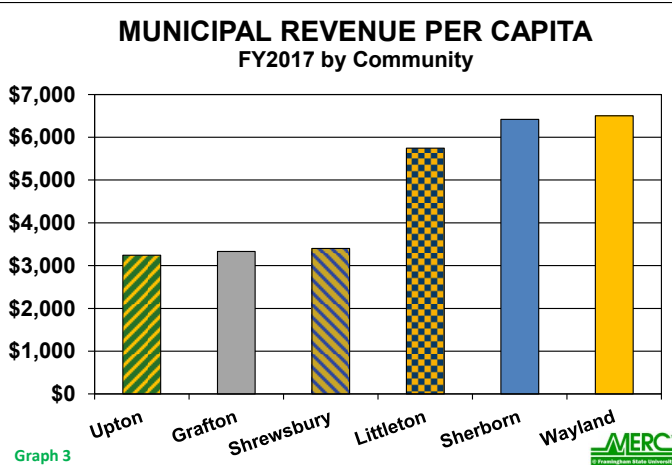
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significantly within the communities. Upton recorded the lowest amount of municipal revenue per capita at \$3,233, followed by Grafton and Shrewsbury at \$3,331 and \$3,402, respectively. Conversely, Wayland had the highest amount of municipal revenue per capita at \$6,502. This number is slightly over double the amount of Upton's municipal revenue per capita. Sherborn had the second highest amount of municipal revenue per capita at \$6,417. The third highest municipal revenue per capita amount came from Littleton at \$5,744.

In summary, the 35 communities in the 495/MW region varied significantly from one another with respect to municipal revenue

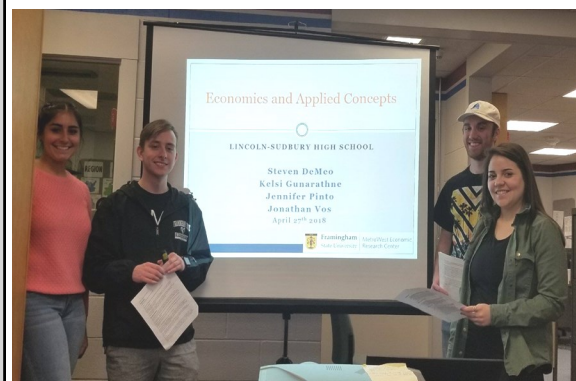
figures. All the categories within Municipal Revenue (Total Tax Levy, State Aid, Local Receipts, and "All Other") have increased at least 75.7% between FY2000 and FY2017. Out of all of these categories, Total Tax Levy is the only one that has never decreased at any point in time. State Aid, which shows how much money the state government allocates to the local communities, has yet to increase over 100% since FY2000. Berlin, the lowest contributor to Residential and C & I tax levies, collected nearly seventeen times less than Framingham, the largest contributor. Lastly, Wayland, the highest spending municipality, collects and spends twice as much in municipal revenue per capita than Upton, the lowest spending municipality. ■

"Municipal revenue per capita can be viewed as spending per capita as well, since municipalities are required to work with a balanced budget, or in other words, spending equals revenue."

High School Visit Program

MERC senior intern Steven DeMeo continued the tradition in Spring 2018 by coordinating a high school visit to Lincoln-Sudbury High School. Steven along with Intern I's: Jennifer Pinto, Kelsey Gunarathne, and Jonathon Vos shared their research and their MERC experiences with high school classes.

The program is intended to stimulate thought and discussion pertaining to economics while also trying to spark interest for collegiate studies. The presentation allows high school students to be more aware of the broad impact economics plays in everyday life, and how they can apply economics to their future endeavors.



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low.

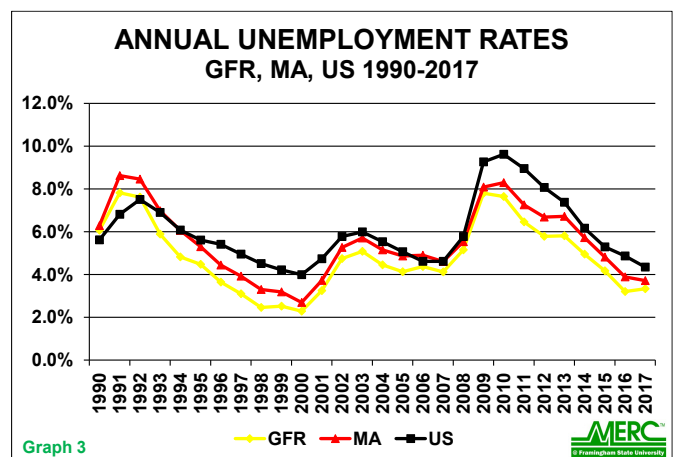
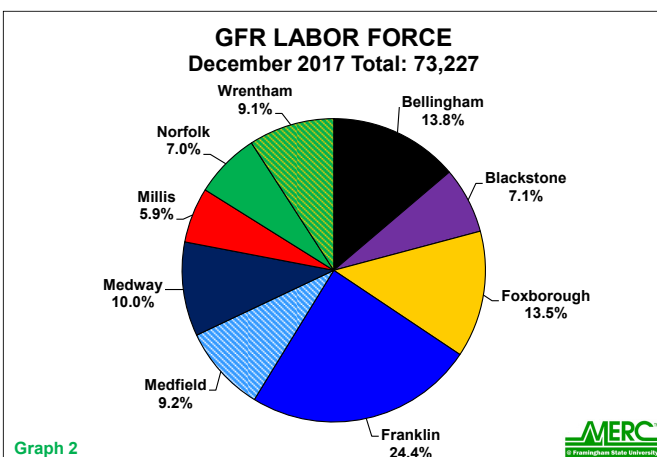
Looking into the annual unemployment rates between 1990 and 2017, GFR has consistently posted lower unemployment rates for all 28 years than that of the state and the nation, except in the period of 1990 to 1992. During this period, GFR unemployment rates were higher than the nation's rates. The highest unemployment rates in GFR were posted in 1991 and 2009 at 7.8%, while the state's rate peaked in 1991 at 8.6% and the nation's rate peaked in 2010 at 9.6%. On the contrary, the lowest unemployment rates for all the regions were posted in 2000. During this year, GFR posted a rate of 2.3%, while the state and the nation posted rates of 2.7% and 4.0%, respectively. When observing the most recent year of 2017, both GFR and the state's unemployment rates have increased by 0.2 and 0.1 percentage points from the prior year while the nation's rate has dropped by 0.5 percentage point. See Graph 3 below ■

Continued from page 4

-occupied. Westborough reported 61.4% of occupied housing units to be owner-occupied, while 38.6% of occupied housing units are renter-occupied.

GMR as a whole reported 64.7% of occupied housing units to be owner-occupied, which is about 22,590 housing units, as opposed to 35.3% of occupied housing units are renter-occupied, approximately the same as 12,331 housing units. It implies that almost 2 out of 3 of GMR's occupied housing units belong to homeowners and one third of the occupied housing units are rented. Massachusetts reported 62.1% of occupied housing units to be owner-occupied, while 37.9% of occupied housing units are renter-occupied. ■

"As a whole, GMR had a 6.2% increase between 2000 and 2010, showing that all the communities either had the same or a smaller percent increase as GMR, except Hudson."



Continued from page 5

was starting.

From 2009 until 2016, 495/MW total payroll grew at an average annual rate of 3.5% per year, the largest percent increase among the four regions. 495/MW total annual payroll increased to the current amount of \$23.8 billion. The three remaining regions: SS, BV, GMW grew at similar average annual rates as well: 3.4%, 3.3% and 3.2%, respectively. By 2016 all four regions established new records in the nominal value of payroll. 495/MW total payroll climbed to a new historical high of \$23.8 billion, followed by GMW, with a record \$14.6 billion, the SS, a record \$9.1 billion and BV, with a new high of \$1.3 billion.

In conclusion, despite the Great Recession of 2009, all four regions not only recovered, but expanded, reaching new highs in 2016 for employment and payroll. ■

“From the trough of the Great Recession in 2009 through 2016, 495/MW experienced the largest absolute gain in employment, surging by 37,200 jobs, a 12.6% gain in seven years.”

Cost of Living Survey

This April, MERC Interns participated in the MERC Cost of Living Survey. The Council for Community and Economic Research (C2ER) manages the national survey and publishes an annual report in October. The survey is conducted by collecting price data on goods and services from many local establishments in the MetroWest region. MERC Interns gathered prices of normal everyday goods such as gasoline, ibuprofen, groceries and professional services such as a haircut or eye exam. The information obtained is used to help compare and contrast MetroWest to other regions across the country.



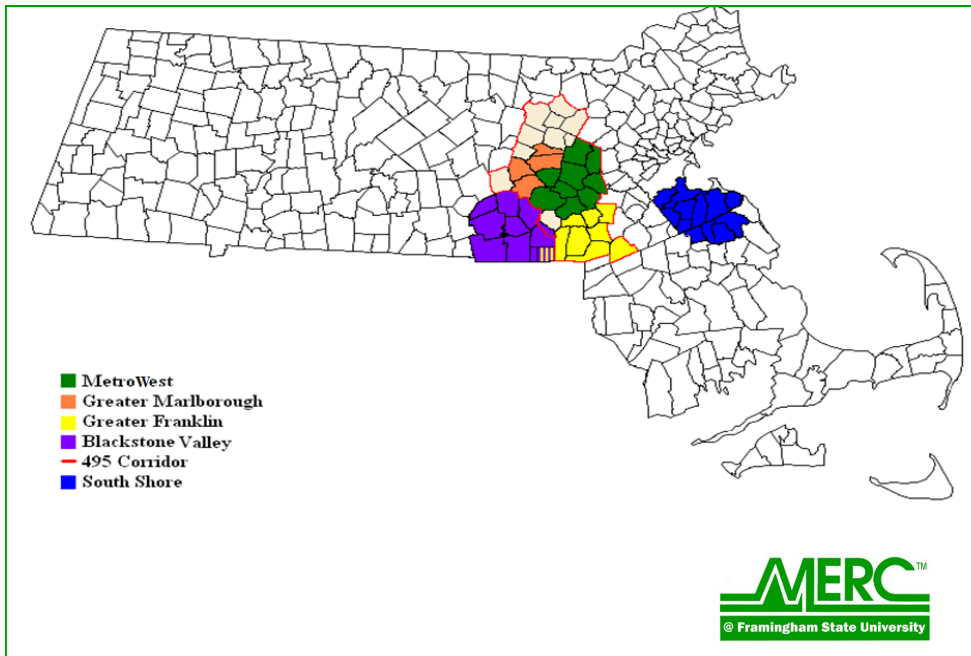
Eastern Economic Association Conference

In March 2018, four MERC faculty members and two MERC senior interns presented at the 44th Eastern Economic Association Conference in Boston. Intern II Steven DeMeo (far left) presented on Municipal Revenue, and Intern II Sarah Horwitz (back left) presented on the 2010 Census. MERC faculty members (from left to right): Dr. Luis Rosero, Dr. Lori Lavigne, Dr. Laura Lamontagne, and Dr. Fahline Sjuib presented “Employing an Economic Research Center for Education and Community Outreach: A Panel Discussion of an Undergraduate Teaching and Research Model”



MERC SUBSTATE REGIONS MAP

MERC provides economic data and analysis for the 6 sub-state regions shown on the map: MetroWest CCSA™, Greater Marlborough Region, Greater Franklin Region, Blackstone Valley, 495/MetroWest, and the South Shore CCSA™.



There are several categories of unemployment rates. U-1 through U-6, not seasonally adjusted, are reported below for the U.S. period rates in February 2018. MERC uses the U-3 rate, which is the official unemployment rate.

Measures: U.S. February 2018

U-1	Persons unemployed 15 weeks or longer, as a percentage of the civilian labor force	1.6%
U-2	Job losers and persons who completed temporary jobs, as a percentage of the civilian labor force	2.3%
U-3	Total unemployed persons, as a percentage of the civilian labor force (the official unemployment rate)	4.4%
U-4	Total unemployed persons plus discouraged workers, as a percentage of the civilian labor force plus discourage workers	4.6%
U-5	(U-4) plus all other "marginally attached" workers, as a percentage of the civilian labor force plus all "marginally attached" workers	5.3%
U-6	Total unemployed persons, plus all "marginally attached" workers, plus all persons employed part time for economic reasons, as a percentage of the civilian labor force plus all "marginally attached" workers	8.6%

February 2018 UNEMPLOYMENT RATES Not Seasonally Adjusted (Preliminary Data)

495/MW	3.4%
Blackstone Valley	4.0%
Blackstone	4.7%
Douglas	3.7%
Grafton	3.5%
Hopedale	3.8%
Mendon	3.9%
Millbury	3.8%
Millville	4.6%
Northbridge	4.7%
Sutton	3.7%
Upton	3.4%
Uxbridge	4.2%
Greater Franklin	3.8%
Bellingham	4.0%
Blackstone	4.7%
Foxborough	3.9%
Franklin	3.7%
Medfield	2.9%
Medway	3.4%
Millis	4.4%
Norfolk	3.9%
Wrentham	3.6%
Greater Marlborough	3.8%
Hudson	4.7%
Marlborough	3.6%
Northborough	3.6%
Westborough	3.3%
MetroWest	3.0%
Ashland	2.9%
Framingham	3.2%
Holliston	3.4%
Hopkinton	3.1%
Natick	2.8%
Sherborn	2.5%
Southborough	2.7%
Sudbury	2.7%
Wayland	2.9%
Milford	4.1%
South Shore	3.7%
Abington	4.7%
Braintree	3.5%
Cohasset	3.1%
Hanover	3.1%
Hingham	3.1%
Milton	3.2%
Norwell	3.5%
Quincy	3.4%
Randolph	4.2%
Rockland	4.5%
Weymouth	4.2%
Massachusetts	4.0%
United States	4.4%

A Peek Inside MERC



MERC Interns: Spring 2018



Back Row: Jonathan Vos, John Murphy, Kenneth Stahovich, Mark Dexter, Stephen Fahey, Sebastian Montes

Front Row: Kelsi Gunarathne, Sarah Horwitz, Jennifer Pinto, Steven DeMeo, Bryanah Johnson, Christopher Goodwin

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26th MERC Annual Conference Friday, May 11, 2018

Friday, May 11, 2018
7:30 – 10:00 AM

The VERVE
Crowne Plaza, Natick

Keynote Speaker:
Jay Ash, Secretary of Housing and
Economic Development,
Commonwealth of MA

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