

ECONOMIC UPDATE

Issue 39

Spring 2019

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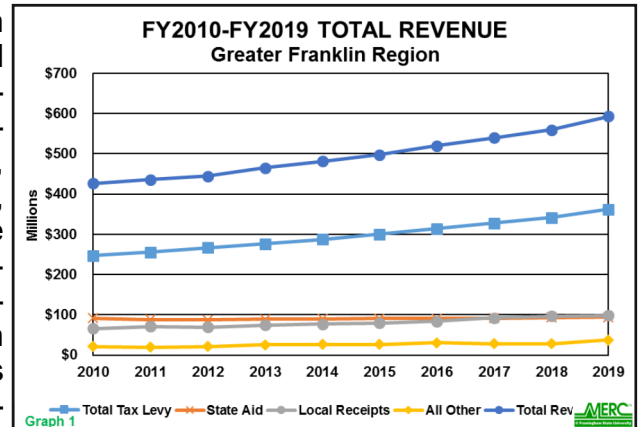
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Revenue in GFR Communities Continues To Rise

By: Kenneth Stahovich

The Greater Franklin Region (GFR) is comprised of the following nine communities: Bellingham, Blackstone, Foxborough, Franklin, Medfield, Medway, Millis, Norfolk, and Wrentham. The MetroWest Economic Research Center (MERC) continues to gather data each year from the Massachusetts Department of Revenue, Division of Local Services that is provided by municipal budgets. The data collected from these reports are used to update municipal revenue and expenditures within the Greater Franklin Region as well as many other regions/communities. Municipal revenue is composed of four different components with those being: total tax levy, state aid, local receipts, and "all other." To get the total municipal revenue for any community or region these four categories must be added up. Together, residential, commercial, industrial, and personal property tax categories make up the total tax levy section of municipal revenue. State aid is given to municipalities in two forms, one being aid for education while the other is used for general government operation use. Local receipts include fees for things such as trash collection as well as water and sewer. Note that not all municipalities use this general fund for its water and sewer fees, some classify it under an "enterprise fund." "All Other"



Continued on page 5

Using Location Quotients to Compare Greater MetroWest and South Shore

By: Steven DeMeo

For the MetroWest Economic Research Center (MERC), Location Quotients (LQ) are particularly helpful when comparing a sub-state region's job concentration relative to that of the state of Massachusetts. They allow us to see the concentration of jobs within a specific industry, which is useful in identifying what industries may be fueling a region's economy, or where a specific industry's jobs are located. LQs compare the regional industry share of total employment to the state share for the same industry in the same year. For example, if a LQ in a specific region and in a specific industry exceeds 1.0, the region has a higher

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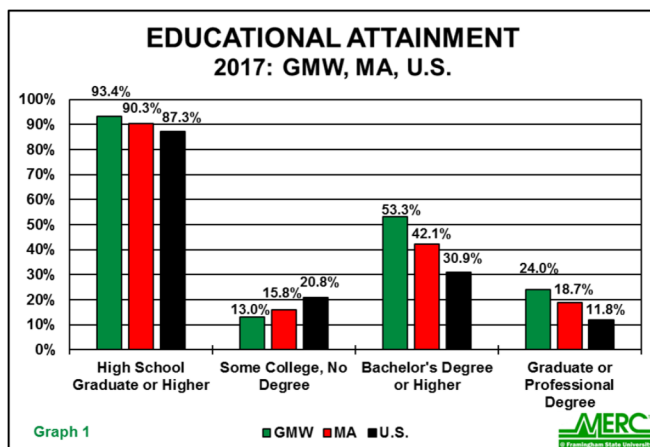


Christopher Goodwin
Intern III
Focus
Housing
Major
Economics
YOG 2019

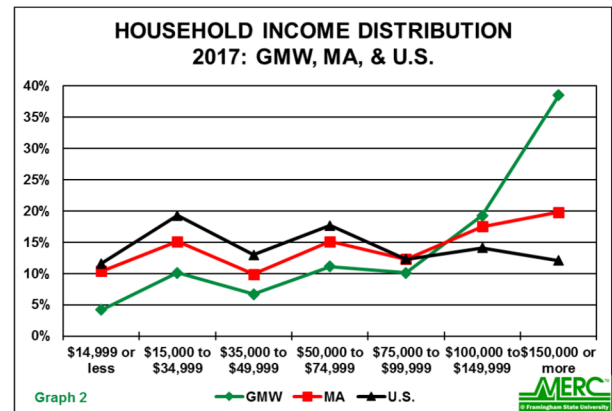
By: Christopher Goodwin

This article will focus on education and income in Greater MetroWest. The information for this article comes from the 5-year estimates of the 2013-2017 American Community Survey (ACS). Estimates for the ACS are gathered through surveys by the US Census Bureau. Greater MetroWest or GMW consists of thirteen communities including Ashland, Framingham, Holliston, Hopkinton, Hudson, Marlborough, Natick, Northborough, Sherborn, Southborough, Sudbury, Wayland, and Westborough.

Graph 1 below shows educational attainment in Greater MetroWest, Massachusetts, and the United States. This graph represents the entire population in each region of individuals 25 years of age and older. According to the 2017 ACS, 93.4% of individuals 25 years or older in Greater MetroWest have at least a high school diploma. Additionally, 90.3% of Massachusetts residents and 87.3% of residents in the United States have a high school diploma. Individuals who are in the remaining three categories are already included in the high school graduate or higher group since people who have gone on to have some



Education & Income in Greater MetroWest



college or received a degree have also graduated high school, except in extremely rare circumstances, such as non-traditional students or attending a college with no high school diploma or GED requirements. Approximately 53.3% of individuals in Greater MetroWest have attained a bachelor's degree or higher, and the percentage was lower in the state and the nation at 42.1% and 30.9%, respectively. Comparatively, 11.8% of people in the U.S. received a graduate or professional degree. In Massachusetts, this number was 18.7% and the highest percentage in this category was Greater MetroWest at 24.0%, meaning nearly 1 out of every 4 people in Greater MetroWest received a graduate or professional degree. Overall, residents over the age of 25 in Greater MetroWest are more highly educated in comparison to individuals in the state and the nation with larger percentages of individuals going to college and ultimately obtaining a degree.

Graph 2 above shows the distribution of household income for Greater MetroWest, Massachusetts, and the United States. Greater MetroWest presents the lowest percentage of all 3 regions being

Continued on page 8

“Overall, residents over the age of 25 in Greater MetroWest are more highly educated in comparison to individuals in the state and the nation”



**Tess
Marchioni**

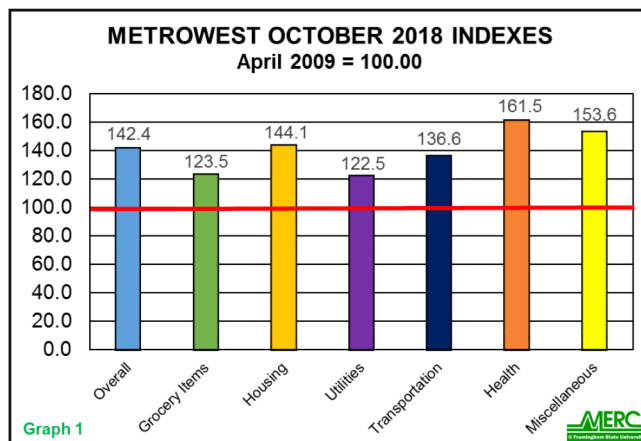
Intern II
Focus
Cost of Living
Major
Finance
YOG 2020

By: Tess Marchioni

The Council for Community and Economic Research (C2ER) publishes a Cost of Living (COL) Index quarterly to compare city-to-city costs across the country. The MetroWest Economic Research Center (MERC) participates by collecting price data for the 57 market basket items used in the survey. These market basket items are determined by C2ER as goods and services typically consumed by professional and executive households. The

items are divided into 6 sub-categories: Housing, Health Care, Grocery Items, Utilities, Transportation, and Miscellaneous Goods and Services. These 6 sub-categories are each assigned a different weight that is reflective of each category's contribution to a household's living expenses. The data examined in this article focuses on the most recent survey in October 2018. For comparison purposes, April 2009 is used as the base year and is normalized at a value of 100.0.

Graph 1 below depicts the Overall Cost of Living Index and each sub-index for the MetroWest Region in October 2018. In

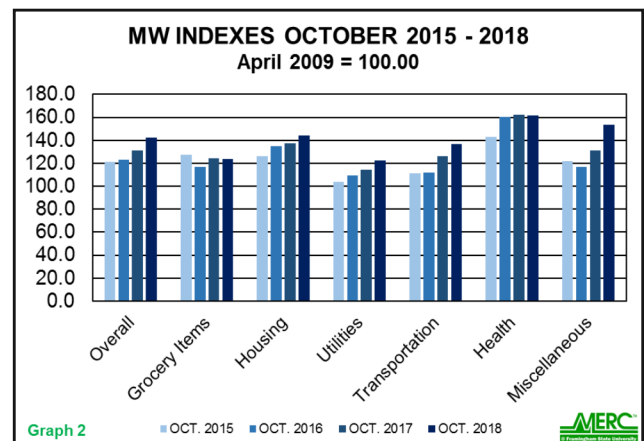


An Increasing Cost of Living in MetroWest

October 2018, the Overall Cost of Living Index was recorded at 142.4. This means that it was about 42.4% more expensive to live in the MetroWest region in 2018 than it was in 2009. The highest index recorded was the Health Care Index, at 161.5. The Health Care index has had the highest growth since 2009, at almost 62%. The second highest Index recorded was Miscellaneous Goods & Services, at 153.6. This is an increase of about 54% since 2009. Conversely, Utilities had the lowest recorded index value at 122.5. This is a 22.5% increase in the Utilities Index since 2009. The Housing Index recorded a 44% increase since 2009. Housing also holds the second highest weight in the contribution to the Overall Cost of Living Index. This implies that Housing was one of the main cost drivers in the increase of the Overall Cost of Living in MetroWest. The Grocery Items Index recorded an Index of 123.5, which is an increase of almost 24%. Lastly, the Transportation Index recorded a value of 136.6, which makes almost a 37% increase since 2009.

Graph 2 below compares data from October 2015 to October 2018. All Indexes have increased in the past 4 years, with the exception of a minor decrease in the Grocery Items Index. In 2015, the Grocery Items Index recorded a high of 127.6. Over the next 4 years, the Grocery Items Index fluctuated up and down, then in 2018 it

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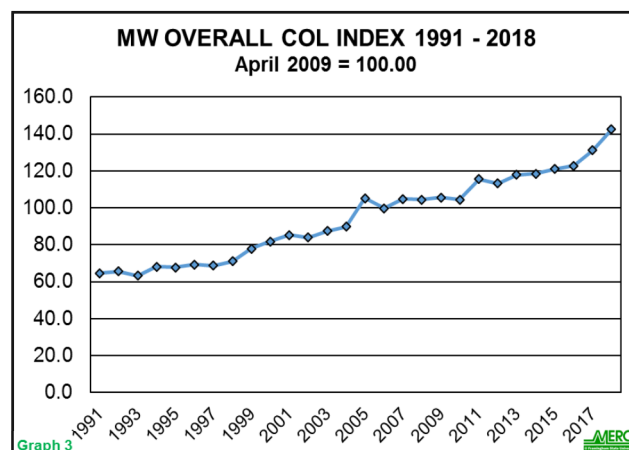


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recorded a value of 123.5. This represents a decrease of about 3% in the Index since 2015. This graph also illustrates how the Housing Index has grown. The Housing Index has increased from 126.2 in 2015 to 144.1 in 2018 for a 14% increase. The Utilities Index has recorded a relatively consistent increase, rising from 103.8 in 2015 to 122.5 in 2018. This is an average annual increase of 4.2%. Transportation has proven to be the most volatile of the indexes. After remaining fairly consistent in 2015 and 2016, it then jumped to 136.6 in 2018. This is an 8.3% increase just between 2016 and 2018. The Miscellaneous Goods and Services Index had the largest increase during these 4 years, jumping from 121.9 in 2015 to 153.6 in 2018. This makes for a 26% increase. Lastly, the Health Care Index has had a 13% increase since 2015.

Graph 3 above shows how the Overall Cost of Living in MetroWest has changed in the last 27 years, from 1991 to 2018. In

“...it was about 42.4% more expensive to live in the MetroWest region in 2018 than it was in 2009.”

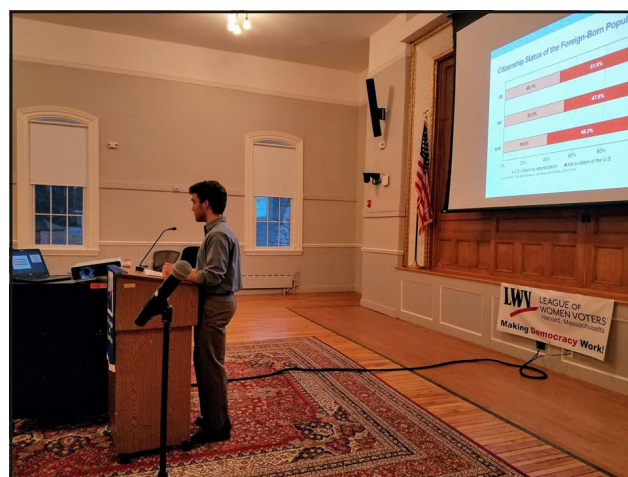


1991, the Overall COL Index recorded a value of 64.6. By 2018, the Index rose to 142.4. This accounts for a 120% increase, indicating it was more than twice as expensive to live in the MetroWest region in 2018 than it was 27 years ago. One of the largest and most noticeable jumps on this graph occurred in 2005. Between 2004 and 2005, the Index jumped from 89.8 to 105.1. This makes for a 17% increase in just one year, the largest increase in the last 27 years. More recently, the Overall Cost of Living Index recorded a significant jump between 2017 and 2018. In 2017, the Overall Cost of Living Index had a value of 131.1, and by

Continued on page 7

Migration Presentation in Harvard, MA

On April 9, 2019, MERC faculty member Dr. Luis Rosero and MERC senior intern Jonathan Vos presented “Economics and Immigration: The Dollars and Sense of It” to the League of Women Voters in Harvard, Massachusetts. This presentation detailed the socioeconomic characteristics of the foreign-born population at the national, state, and local level. It is part of an ongoing research project that aims to learn more about this significant portion of our population in the MetroWest, and which will culminate in a MERC report to be published this summer. ■



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**Kenneth
Stahovich**

Intern III

Focus

Municipal Revenue

Major

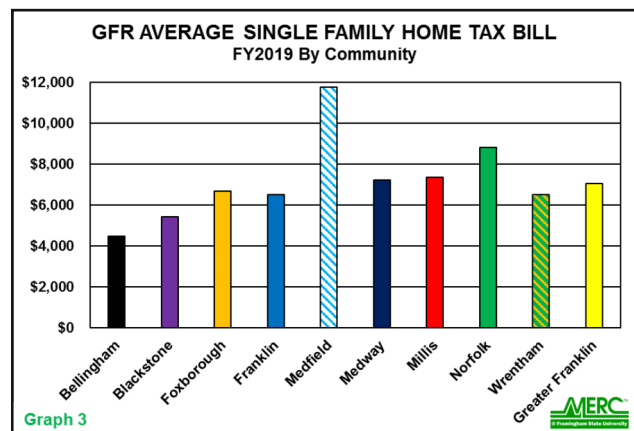
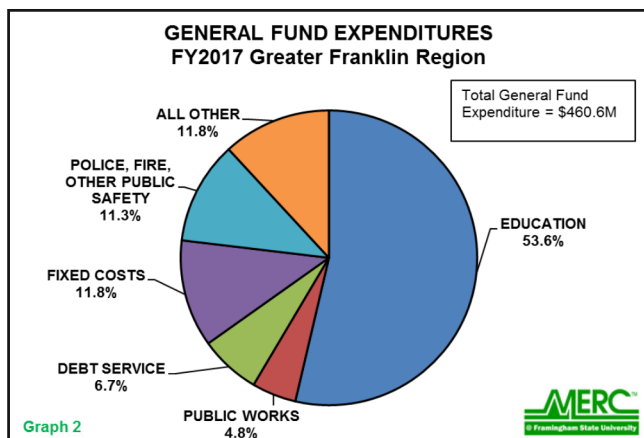
Economics

YOG 2019

includes all available free cash.

As shown in Graph 1 on page 1, total municipal revenue for the Greater Franklin Region remains on the rise in 2019. From FY2010 to FY2019, total municipal revenue for the Greater Franklin Region increased from \$426.3 million to about \$592.5 million, thus showing a 38.9% total increase. During the same time span, Total Tax Levy increased from \$246.7 million in FY2010 to \$362.3 million in FY2019, which is a 46.9% total in-

crease. State aid had the lowest total increase of all the categories being measured at 2.2%, going from \$92.1 million in FY2010 to \$94.1 million in FY2019. Local Receipts showed a 49.3% increase from FY2010 to FY2019, which was the second highest percentage increase of all the categories. Although "All Other" held the smallest totals, the rise from \$21.5 million in FY2010 to \$37.8 million in FY2019, showed an increase of 75.8% which happens to be the largest percentage increase of all the components. Total Tax Levy and Local Receipts both showed steady increases through the given time



span, meanwhile State Aid and "All Other" both had periods of decreasing totals.

Graph 2 below displays FY2017, which is the last year of full data. Total general fund expenditures totaled \$460.6 million in the Greater Franklin Region. Municipalities use various types of funds with some being specific to the community. For most communities, water and sewer fall under the general fund section while a few employ a specific expenditure such as the enterprise fund to account for it. With this being said, careful interpretation must be employed when comparing the distribution of general funds. As for the Greater Franklin Region, Education held the largest share in FY2017 at 53.6% which is just over half of the total expenditure. Of the remaining five categories being measured, "All Other" (11.8%), Police, Fire, Other Public Safety (11.3%), and Fixed Costs (11.8%) reached over 10%. Debt Service and Public Works were the only two categories to not reach above 10% coming in at 6.7% and 4.8%, respectively. Note that communities are assumed to work with balanced budgets, therefore, total revenue and total expenditures are assumed to be equal.

The Greater Franklin Region (GFR) single family home tax bill for FY2019 is represented by Graph 3 above. The average tax bill for FY2019 in the GFR came out to be \$7,036. Of all the communities that make up the GFR, Medfield not only held the highest single family tax bill at \$11,766,

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**Steven DeMeo**

Intern IV

Focus

Employment

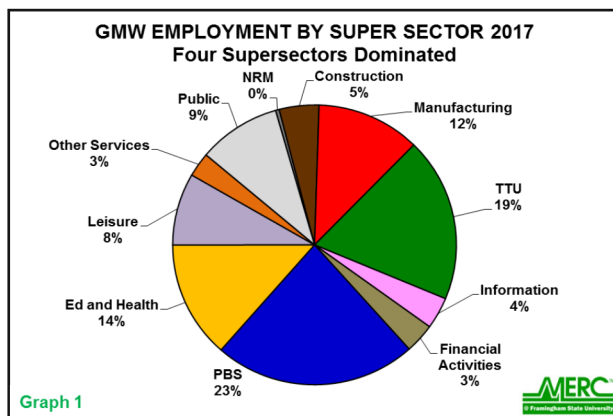
MajorBusiness & IT
YOG 2019

concentration of that industry's jobs in comparison to the state. If an industry's LQ is less than 1.0, the region has a lower concentration of jobs than exists statewide. If equal to 1.0, then the state and the region being analyzed have similar concentrations of an industry's jobs. This article compares Greater MetroWest (GMW) and the South Shore (SS), to identify their similarities and differences in industrial structure.

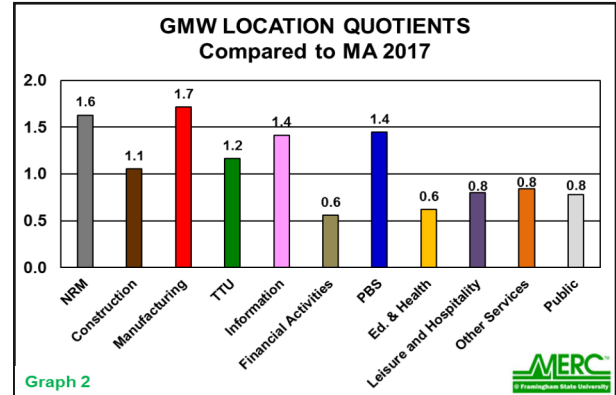
GMW includes 13 communities* between Boston and Worcester. In 2017, GMW produced

191,350 jobs, \$14.7B in payroll, an average annual wage of \$76,800, and 11,450 establishments. GMW employment in the 11 NAICS supersectors was not evenly distributed, see Graph 1 below. Combined, four NAICS supersectors generated over two-thirds of GMW employment: Professional & Business Services (PBS) (23%), Trade, Transportation & Utilities (TTU) (19%), Education & Health Care (Ed. + Health) (14%), and Manufacturing (12%). The remaining seven supersectors produced less than one-third of all jobs. It is possible to now compare the concentration of industries in GMW to that which exists statewide, using LQs, see Graph 2 above.

On the horizontal axis are the NAICS



Graph 1



Graph 2

supersectors and on the vertical axis are the GMW LQs compared to the state. Two of the LQs exceeded 1.5: Manufacturing (1.7) and Natural Resources & Mining (1.6). In 2017, GMW had a 71% higher concentration of Manufacturing jobs than the state overall. Four supersectors had LQs between 1.0 and 1.5: Professional & Business Services (1.4), Information (1.4), Trade, Transportation & Utilities (1.2) and Construction (1.1). LQs in the remaining GMW super sectors were all below 1.0, showing that the concentration of those jobs in GMW is less than the concentration in MA as a whole. The supersectors below 1.0 include: Other Services (0.8), Leisure & Hospitality (0.8), Public (0.8), Education & Health Services (0.6), and Financial Activities (0.6).

Another MERC sub-state region, South Shore (SS), includes 11 communities** south of Boston. In 2017, SS produced 163,000 jobs, \$9.7B in payroll, an average wage of \$59,300, and 11,990 establishments. South Shore employment differs from GMW strikingly in its distribution of jobs by NAICS supersector, see Graph 3 on page 9. Combined, four supersectors create almost two-thirds of all SS jobs: Education & Health Care, (20%), Trade, Transportation & Utilities (18%), Professional & Business Services (12%), and Financial Activities (12%).

Similarly, the LQs of SS supersectors also differ from GMW supersectors, see Graph 4 on page 9. One SS supersector stands out above all of them: Financial Activities. This supersector had a LQ exceeding 2.0, showing that there is twice the concentration of Financial Activity jobs located in the

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but also was the only community to have a tax bill surpassing the \$10,000 mark. As well as being the only community to reach over \$10,000, Medfield also had a higher average tax bill total than that of the entire region. Norfolk had the second highest tax bill at \$8,819. Of all nine communities, Bellingham had the lowest total average single family home tax bill at \$4,488. The remaining municipalities single family home tax bills ranged from \$5,400-\$7,400.

In conclusion, the Greater Franklin Region's total revenue continues its steady increase through FY2019. The total tax levy source remains the largest portion of revenue for each individual town. Total general fund expenditures in FY2019 totaled \$460.6 million. Finally, the average single family tax bill in the GFR region was about \$7,036. ■

Continued from page 4

2018 it rose to 142.2. This means it was about 8% more expensive to live in MetroWest in 2018 than it was the year before.

To conclude, the Health Care Index has had the largest increase since 2009. Housing had the second largest increase, and also the second highest weight contribution to the Overall Index. This implies that housing was one of the main drivers of the increase in the Overall Cost of Living in MetroWest. All indexes have risen since 2015, with the exception of Grocery Items which has had a minimal decrease of about 3%. The Overall Cost of Living in MetroWest has had a 120% increase in the last 27 years, meaning it was more than twice as expensive to live in MetroWest last year than it was in 1991. Finally, the Cost of Living in MetroWest Region has increased by more than 8% in the last year. ■

Regional Comparison Update

By: **Bryanah Johnson**

Five of the six regions analyzed by the MetroWest Economic Research Center (MERC) experienced growth, ranging from 0.4% in Greater MetroWest (GMW) to 1.9% in South Shore (SS). MetroWest (MW) experienced a slight decline in employment of -0.2%. Following last semester's Economic Update, the data for two regions has since been updated: 495/MW and Blackstone Valley (BV). These two regions both experienced similar growth of nearly 1% from 2016 to 2017. BV had an increase of nearly 300 jobs, from 28,700 jobs in 2016 to 29,000 jobs in 2017. While BV and 495/MW both had an increase of 1%, the number of jobs in 495/MW grew from 332,800 jobs in 2016 to 336,000 in 2017, a gain of 3,200 jobs. In 2017, 5 regions set historical records in employment: 495/MW, BV, Greater Marlborough Region (GMR), Greater MetroWest (GMW), and SS. ■



**Bryanah
Johnson**

Intern III

Focus

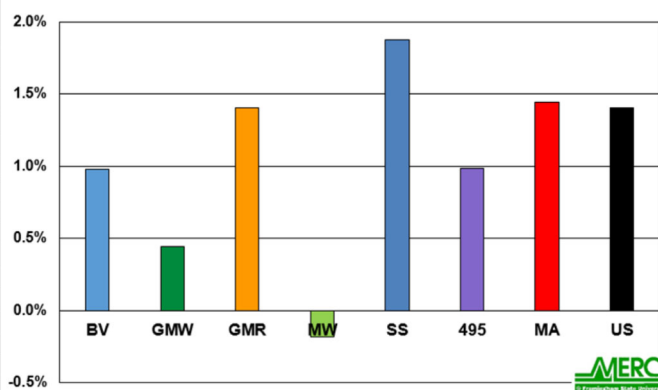
Employment

Major

Accounting

YOG 2019

REGIONAL % NET CHANGE IN JOBS 2016-2017

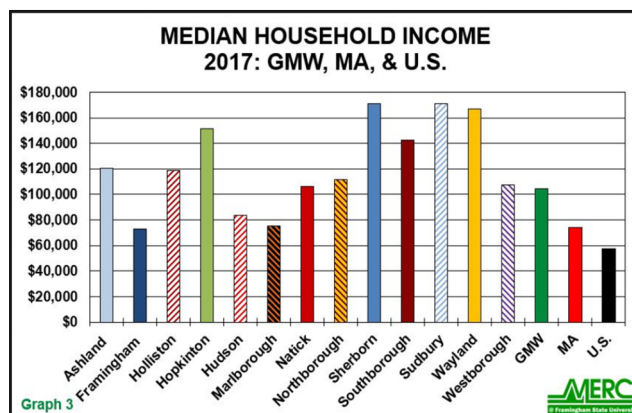


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compared in all income groups up to the \$75,000 to \$99,999 group. This flips in the \$100,000 to \$149,999 income group, and then Greater MetroWest has a significantly higher percentage in the \$150,000 or more group. Among households in Greater MetroWest, 4.2% earn \$14,999 or less, yet 58.7% of households in this same region earn at least \$100,000. Massachusetts and the United States have a much more even spread throughout the distribution where as Greater MetroWest has a large discrepancy of low income versus high earning households. The most similar income group among all three regions is the \$75,000 to \$99,999 group with each region representing a percentage between 10 and 12.3%.

Graph 3 shows median household income for each community of Greater MetroWest, Massachusetts, and the United States. Sherborn, Sudbury, and Wayland had the three highest median household incomes, which were all above \$160,000. Framingham, Hudson, and Marlborough were the only three communities of Greater MetroWest that had median household incomes below \$100,000; and these three were all around or below \$80,000. As a whole, Greater MetroWest had an estimated median household income of \$104,470, the state and the nation recorded \$74,167 and \$57,652 respectively.

Overall, Greater Metrowest is highly educated compared to the state and the nation with nearly 94% of the people 25



years and older graduating high school, more than half receiving a bachelor's degree, and close to one fourth of the people earning a graduate or professional degree. Greater MetroWest also has a disproportionate representation of households earning at least \$100,000 at almost 60. Massachusetts and the United States had under 40% and 26.2% of households earning at least \$100,000 respectively. Lastly, the communities of Greater MetroWest all have a median household income of over \$100,000 with the exception of Framingham, Hudson, and Marlborough. Sherborn, Sudbury, and Wayland were the highest income communities in a high income region. All three had a median household income of over \$160,000. Greater MetroWest as a whole, the state, and the nation had median household incomes around \$105,000, \$75,000, and \$58,000 respectively. ■

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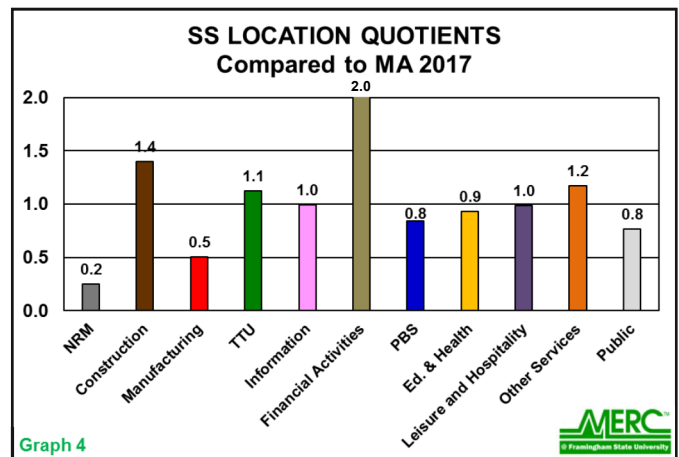
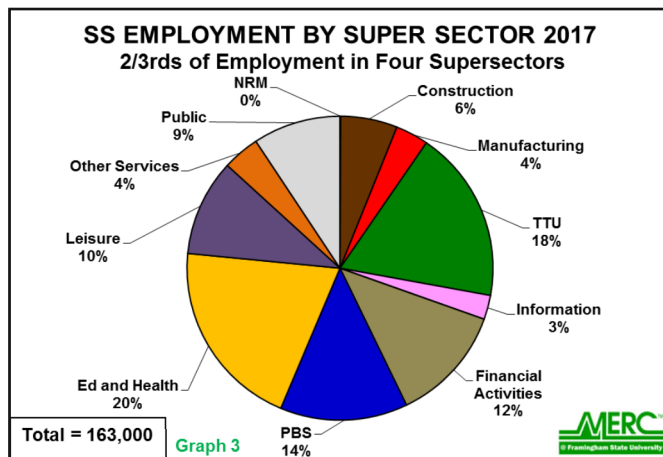


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SS than exists statewide in Massachusetts. Three other supersectors had LQs above 1.0: Construction (1.4), Other Services (1.2), and Trade, Transportation & Utilities (1.1). Two supersectors came at 1.0: Information (1.0) and Leisure & Hospitality (1.0). The rest of the supersectors fell below 1.0: Education and Health Care (0.9), Professional & Business Services (0.8), Public (0.8), Manufacturing (0.5), and Natural Resources & Mining (0.2).

Now that the data regarding these regions has been analyzed, it is possible to compare how they differ. Looking at the LQ data, it is clear that each region has very different industries driving their respective economies. In GMW, Financial Activities produces just 3.0% of the region's jobs, and has a 0.56 LQ. Another notable industry is Manufacturing, which makes up 12% of GMW jobs at a 1.71 LQ. PBS in GMW had a LQ of 1.45, while PBS in SS had a LQ of just 0.84. SS has 12% of its jobs in Financial Activities, and a 2.03 LQ, showing that the regions are starkly different. In SS, Manufacturing has just 4% of jobs at a 0.51 LQ. SS is much closer to the state when it comes to Education & Health Services, showing a LQ of 0.93 compared to GMW's 0.62. From this data, we can conclude that GMW is much more of a high-tech fueled region, while SS is a financial activities fueled region. ■



*Ashland, Framingham, Holliston, Hopkinton, Hudson, Marlborough, Natick, Northborough, Sherborn, Southborough, Sudbury, Westborough, and Wayland.

**Abington, Braintree, Cohasset, Hanover, Hingham, Milton, Norwell, Randolph, Rockland, Weymouth, and Quincy.

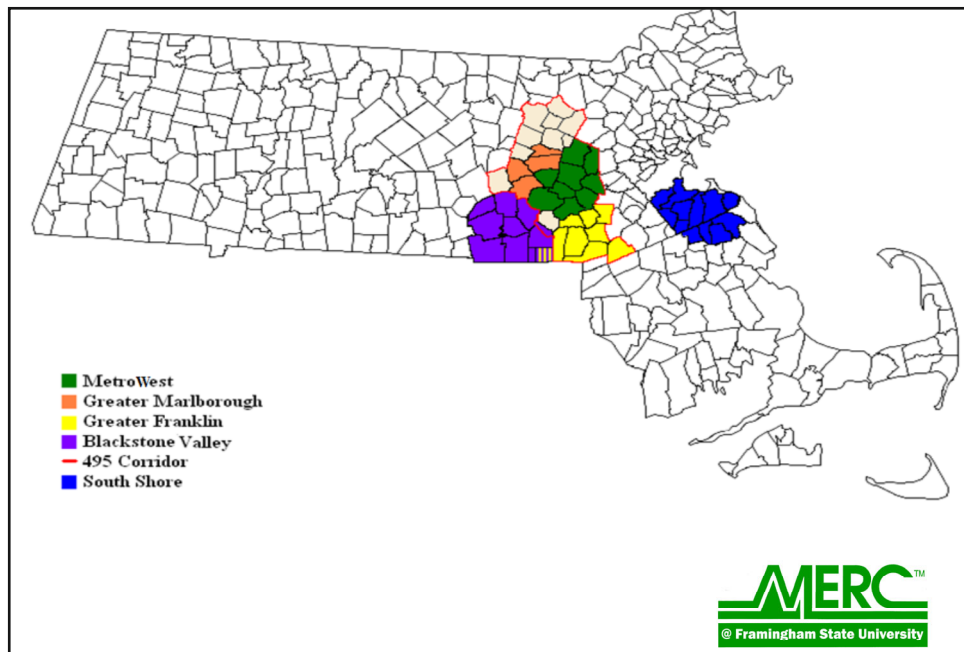
Cost of Living Survey



In 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 eye exams and yoga sessions. The information obtained is used to help compare and contrast MetroWest to other regions across the country. ■

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 Corridor, 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 2019. MERC uses the U-3 rate, which is the official unemployment rate.

Measures: U.S. February 2019

U-1	Persons unemployed 15 weeks or longer, as a percentage of the civilian labor force	1.5%
U-2	Job losers and persons who completed temporary jobs, as a percentage of the civilian labor force	2.0%
U-3	Total unemployed persons, as a percentage of the civilian labor force (the official unemployment rate)	4.1%
U-4	Total unemployed persons plus discouraged workers, as a percentage of the civilian labor force plus discourage workers	4.3%
U-5	(U-4) plus all other "marginal attached" workers, as a percentage of the civilian labor force plus all "marginally attached" workers	4.9%
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	7.7%

February 2019 UNEMPLOYMENT RATES Not Seasonally Adjusted (Preliminary Data)

495/MW	2.6%
Blackstone Valley	3.2%
Blackstone	4.3%
Douglas	2.8%
Grafton	2.8%
Hopedale	3.1%
Mendon	2.9%
Millbury	3.1%
Millville	4.6%
Northbridge	3.5%
Sutton	2.7%
Upton	3.2%
Uxbridge	3.2%
Greater Franklin	2.9%
Bellingham	3.3%
Blackstone	4.3%
Foxborough	2.6%
Franklin	2.7%
Medfield	2.3%
Medway	2.8%
Millis	3.3%
Norfolk	2.8%
Wrentham	3.0%
Greater Marlborough	3.0%
Hudson	3.7%
Marlborough	3.2%
Northborough	2.8%
Westborough	2.2%
MetroWest	2.3%
Ashland	2.5%
Framingham	2.4%
Holliston	2.5%
Hopkinton	2.3%
Natick	1.9%
Sherborn	1.5%
Southborough	1.9%
Sudbury	2.1%
Wayland	2.4%
South Shore	2.9%
Abington	3.7%
Braintree	2.5%
Cohasset	2.3%
Hanover	2.6%
Hingham	2.6%
Milton	2.4%
Norwell	2.6%
Quincy	2.7%
Randolph	3.2%
Rockland	3.7%
Weymouth	3.2%
Massachusetts	3.2%
United States	4.1%

A Peek Inside MERC



MERC Interns: Spring 2019



Back Row: Kenneth Stahovish, Abraham Gomez, Jonathan Vos, Valeria Arauz, Paul Bows, Jonathan Garcia, Hakeem McKoy
Front Row: Kelsi Gunarathne, Steven DeMeo, Tess Marchioni, Christopher Goodwin, Mary Elizabeth Gallagher, (Evan Robertson not pictured)

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100 State Street
Framingham, MA 01701-9101

27th MERC Annual Conference

**Wednesday, May 22, 2019
8:00 a.m.**

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Keynote Speaker:
Rosalin Acosta
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