

ECONOMIC UPDATE

INSIDE THIS ISSUE:

GMR Employment Up in 2013

1

MetroWest Cost of Living on the Rise

1

Municipal Spending and Education in the 495 Region

2

GMW: Age, Household Income, and Race

3

South Shore Unemployment Rates Remain High

4

Debating the MERC Economic Index

7

Unemployment Rates and MERC Coverage Map

10

A Peek Inside MERC

11

MERC Interns Fall 2014

11

Issue 30

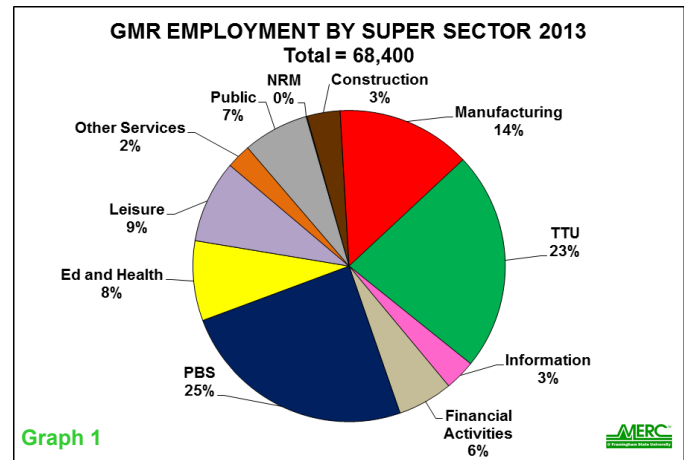
Fall 2014

Greater Marlborough Employment Up in 2013

By: Samantha Irvine

The Greater Marlborough Region or GMR, includes four communities: Hudson, Marlborough, Northborough and Westborough. The 2013 GMR figures for employment, payroll, the average wage and the number of establishments all slightly increased from 2012 according to the North American Industry Classification System (NAICS) data. Overall, in 2013 GMR employment totaled 68,400, with a payroll of \$4.8 billion, an average wage of \$69,800 and 3,650 establishments. Even though there was a slight increase overall from 2012, the 2013 levels of all four variables still remain below GMR's historical peaks reached in 2011.

Employment measures the number of jobs sited in the region whether the workers live in that region or not. In 2013, GMR employment totaled 68,400 jobs. Among the 11 NAICS supersectors shown above on Graph 1, Professional and Business Services (PBS) contributed the largest percentage of total regional em-



Continued on page 8

MetroWest Cost of Living on the Rise

By: Jay Nicholls

The MetroWest Economic Research Center (MERC) participates in a cost of living survey two times per year. Every April and October interns collect prices from around the MetroWest region according to specifications laid out by the Council for Community and Economic Research (C2ER). The region includes the following nine towns: Ashland, Framingham, Holliston, Hopkinton, Natick, Sherborn, Southborough, Sudbury, and Wayland. The prices collected make up a market basket of items that represent purchases typically

made by professional and executive households. The survey includes the prices of gasoline, clothing, food, and a visit to the doctor, among others. The items are grouped into six categories: housing, utilities, grocery items, transportation, health care and miscellaneous goods and services. The average prices of the items in each category are used to create sub-indexes. The Overall Cost of Living Index is a weighted average of these sub-indexes. The prices we collect are also included in a national survey of nearly 300 urban areas around the country.

The Overall Cost of Living Index depicted in Graph 1 on page 6, shows data

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Municipal Spending and Education Expenditures in the 495 Region



Romery Gonzalez

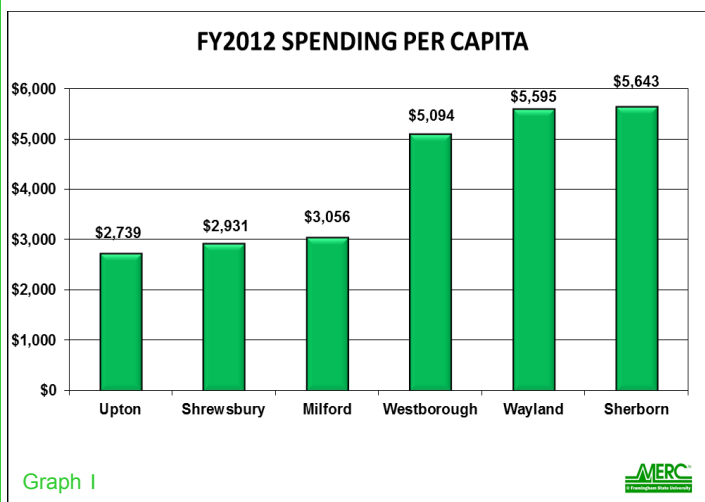
Intern II
Focus
 Municipal Revenue
Major
 Business Admin.
 YOG 2015

By: Romery Gonzalez

The 495 Region covers a large geographical area consisting of 33 communities situated between Worcester and Boston. Municipalities face difficult economic times in their ongoing effort to limit tax increases while at the same time continuing to provide essential services to the residents of the community. Public education is the principal municipal service provided by the communities and state aid is granted to each municipality to cover some of their costs. This reimbursement is based on complex formulas that consider both personal income and

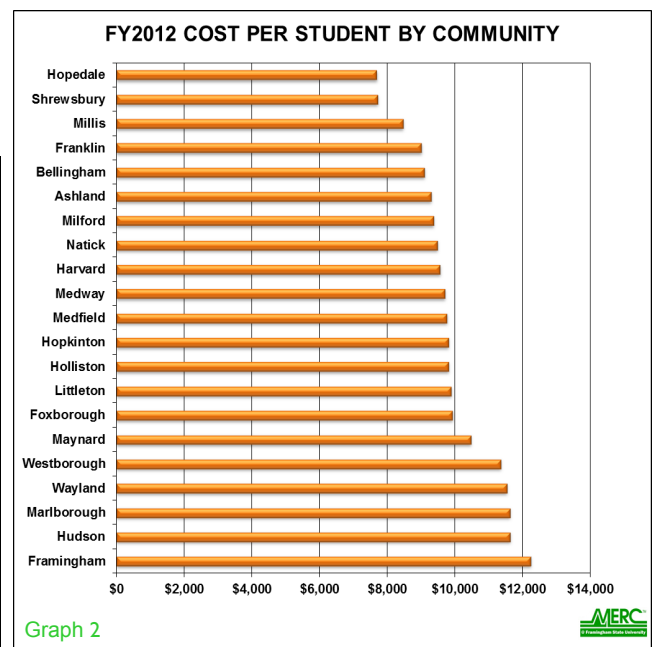
property values of the individual communities when calculating their respective share of state aid. The following graphs present municipal spending per capita, cost per student by community, and state aid for education received by selected communities.

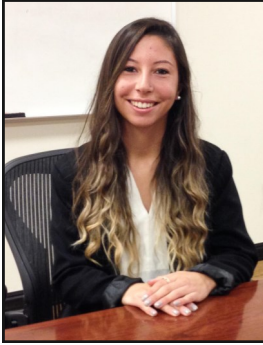
Graph 1 below illustrates total municipal spending per capita in Fiscal Year 2012 for the three smallest and three largest communities with respect to per capita spending. Upton registered the lowest per capita spending at \$2,739 similar to Shrewsbury with \$2,931 and Milford with \$3,056. Sherborn had the highest spending at \$5,643 followed by Wayland, the second highest at \$5,595, and Westborough, third highest at \$5,094.



Graph 2 below, to the right, displays the cost per student by community for Fiscal Year 2012 as reported by the Department of Revenue, Division of Local Services and the Department of Education. The graph lists 21 communities ranked from lowest to highest; these communities represent municipalities in the 495 region that do not have regional school districts. The calculation of total education expenditures does not include insurance, retirement programs and payments to out-of-districts schools. Student counts include pre-kindergarten and K-12 enrollments. Hopedale, Shrewsbury, and Millis reported the three lowest costs per student of \$7,694, \$7,718 and \$8,467, respectively. In contrast, Framingham reported the highest costs per student at \$12,239. Hudson and Marlborough registered similar costs of \$11,631 and \$11,622, respectively. The average of the remaining 15 communities was \$9,872. The average for all 21 communities was \$9,879.

Graph 3 on page 9 presents state aid for education as a percentage of education expenditure for Fiscal Year 2012 for the three communities that received the smallest shares, the median community, and the three communities that received the largest shares in the 495 region. State aid for education represents amounts received by the individual communi-





Marcella Bentes

Intern II

Focus

Census

Major

Business Admin.

YOG 2015

Greater MetroWest: Age, Household Income and Race

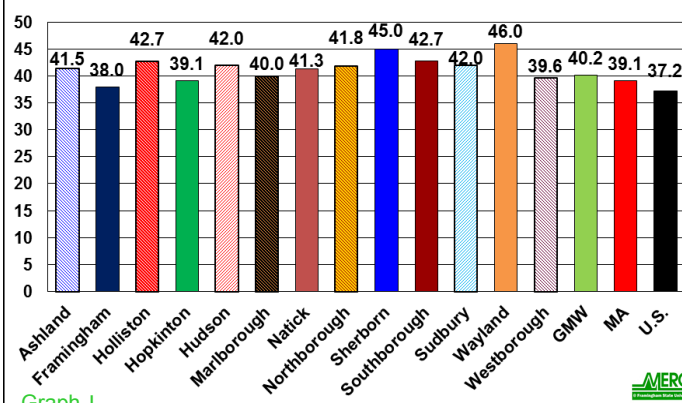
By: Marcella Bentes

MERC faculty and interns used data from the 2008-2012: American Community Survey (ACS) to research demographic characteristics in the Greater MetroWest (GMW) region. The communities that make up GMW include Ashland, Framingham, Holliston, Hopkinton, Hudson, Marlborough, Natick, Northborough, Sherborn, Southborough, Sudbury, Wayland, and Westborough. According to ACS, GMW had an average total population of 281,943 individuals over 2008 through 2012.

Graph 1, below, shows the median age for individual communities, the region, the state, and the nation.

The “youngest” community in GMW was Framingham with a median age of 38.0. Framingham was the only town to have a median age lower than that of the state. However, the U.S. had the lowest median age overall, at 37.2 years. Massachusetts recorded the third lowest median age with an age of 39.1 years. Among the GMW communities, the median ages varied from 38.0 in Framingham to 46.0 years in Wayland. Four of these communities recorded median ages below that of GMW, which had an estimated median age of 40.2 years. In addition to Framingham, these communities include Hopkinton, 39.1 years, Westborough, 39.6 years, and Marlborough, 40.0 years. All other communities in the region had higher median ages than that of GMW, with the highest median age of 46.0 years recorded in Wayland.

MEDIAN AGE IN GMW COMMUNITIES
ACS 2008-2012 Estimates



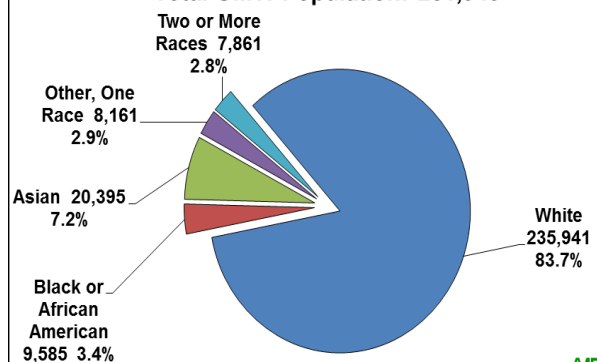
Graph 1

Graph 2, below, shows the race distribution in GMW. Among the total population of 281,943 individuals, the largest self-identified race in GMW was White, with 83.7% of individuals. The White percentage accounts for more than 4 out of 5 individuals in the region. The next largest racial category in the region was Asian at 7.2%. The Asian percentage was more than double the size of the third largest single racial category, which was Black or African American at 3.4%. More than 8,000 individuals, or 2.9%, of the GMW population identified themselves as fitting into one race other than White, Asian, or Black or African American. Other, One Race includes the 152 individuals who identified themselves as Native Hawaiian and Other Pacific Islander. This category also contains the 296 American Indian and Alaska Native individuals. The individuals, who self-identified as Two or More Races, made up 2.8% of the total population of GMW, or 7,861 people.

Graph 3 on the bottom of page 5 portrays median household income for GMW, its communities, Massachusetts, and the United States. All communities in GMW had higher median household incomes than that of the

SELF-IDENTIFIED RACE IN GMW

Total GMW Population: 281,943



Graph 2

state and nation. According to ACS, the U.S. recorded the lowest of all median incomes portrayed here at \$53,046. Massachusetts registered the second lowest median income at \$66,658. GMW registered an estimated median income of \$90,626, a value that is 26.4% higher than MA and 41.5% higher than the

Continued on page 5

**Kristen Hurley**

Intern II

Focus

Unemployment

Major

Business Admin.

YOG 2015

South Shore Unemployment Rates Remain High

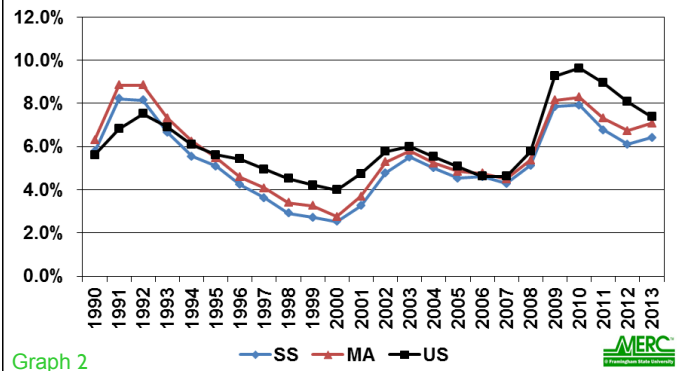
By: Kristen Hurley

MERC faculty and interns collect unemployment and labor force data for the South Shore every month. The South Shore region is composed of eleven different communities: Abington, Braintree, Cohasset, Hanover, Hingham, Milton, Norwell, Quincy, Randolph, Rockland, and Weymouth. Among the eleven communities on the South Shore, Randolph posted the highest unemployment rate in September 2014 at 6.7%, followed by

Weymouth and Rockland at 6.2% and 6.1%, respectively. Among these three communities, Randolph was the only community with an unemployment rate higher than that of MA at 6.2%. Hingham, on the other hand, recorded the lowest unemployment rate during this month at 4.3%, followed by Cohasset and Hanover at 4.7% and 4.9%, respectively. During this period, the nation's unemployment rate was 5.7%, lower than those of the region and the state. See Graph 1 below.

In the past 24 years, the unemployment rates on the South Shore have fluctuated greatly. This particular region reached its highest unemployment rate in 1991 at 8.2% and its lowest rate in 2000 at 2.5%. During this 24-year

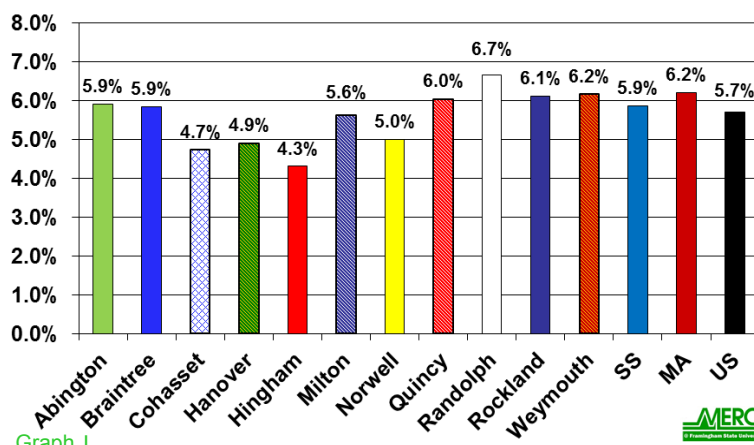
ANNUAL UNEMPLOYMENT RATES SS, MA, US 1990-2013



time span, the unemployment rates on the South Shore remained below those of the nation with the exception of the years 1990 through 1993, when the South Shore's rates were higher than the nation's rates. Massachusetts reached its peak unemployment rate in 1991 and 1992 at 8.8% and its lowest rate in 2000 at 2.8%. In 2010, the United States recorded its highest unemployment rate at 9.6%, the highest rate throughout the entire period. Similar to the region and the state, the nation's lowest unemployment rate also occurred in the year 2000 at 4.0%. See Graph 2 above.

In September 2014, the total labor force on the South Shore was recorded at 184,330 individuals. Among the communities in the region, Quincy had the largest number of individuals in the labor force with 53,632 individuals, representing 29.1% of the total labor force on the South Shore. This implies that almost one out of every three individuals in the labor force on the South Shore lived in Quincy. The second largest contributor to the labor force in the region was Weymouth with 30,636 individuals, followed by Braintree with 19,467 individuals. Combined, these three communities accounted for more than half of the labor force on the South Shore. Cohasset, on the other hand, made the smallest contribution to the labor force in the region with only 4,137 individuals, followed by Norwell with 5,523 individuals and Hanover with 7,664 individuals. The combination of labor forces in Cohasset, Norwell, and Hanover provided less than 10% of the South Shore's total labor force. See Graph 3 on page 5.

SS UNEMPLOYMENT RATES By Community: September 2014



Graph 1

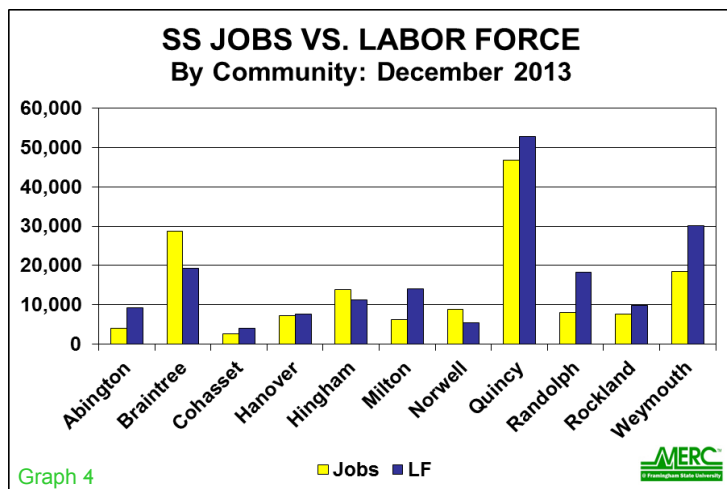
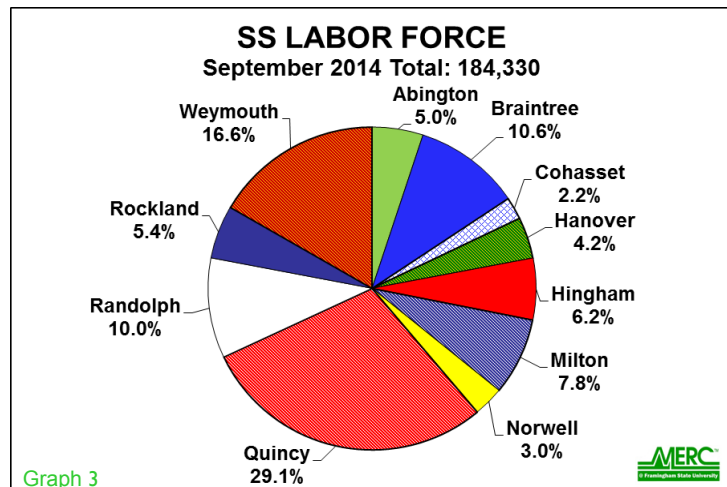


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South Shore Unemployment Rates Remain High

In December 2013, there were a total of 152,306 jobs located on the South Shore, where Quincy provided the largest number of jobs in the region. Comparing the number of jobs and individuals in the labor force on the South Shore, it is interesting to note the differences between the two in each of the eleven communities. Braintree, Hingham, and Norwell were the only communities with more jobs than individuals in the labor force, implying that these three communities were net importers of labor. Braintree was the largest net importer of labor with 9,580 more jobs than individuals in the labor force. The smallest net importer of labor was Hingham with a difference of 2,663 between jobs and the labor force. The remaining eight communities had fewer jobs than individuals in the labor force; therefore, these communities were net exporters of labor. Out of these eight communities, Weymouth was the largest net exporter of labor with 11,674 more individuals in the labor force than jobs. Haverhill, however, was the smallest net exporter of labor with 7,159 jobs and 7,557 individuals in the labor force, a difference of only 398 between jobs and the labor force. See Graph 4 to the right. ■

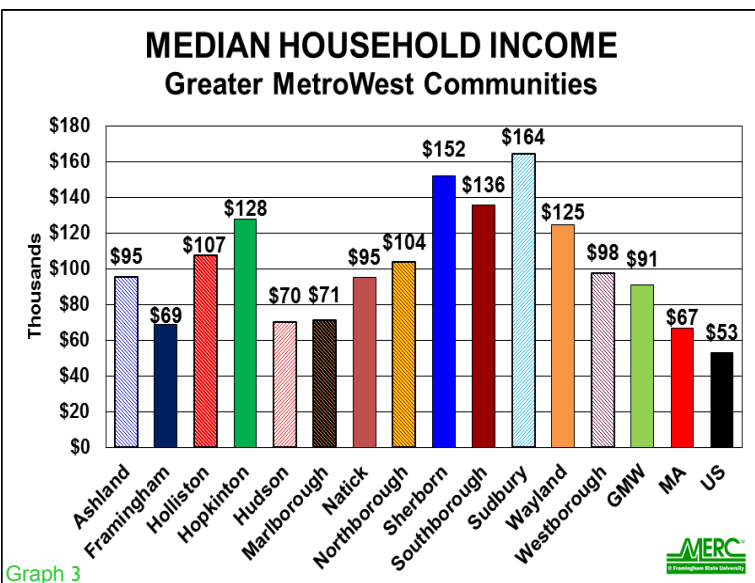


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Greater MetroWest: Age, Household Income, and Race

U.S. The median incomes of the thirteen communities that make up GMW ranged from \$68,906 in Framingham to \$164,337 in Sudbury.

In conclusion, according to ACS, GMW, at 40.2 years, had an older median age than both Massachusetts and the U.S., between 2008 and 2012. This means that the population of GMW was relatively older than Massachusetts and the United States. Also, most of GMW's population self-identified as white, and this proportion in GMW is greater than in the state or nation. Furthermore, GMW recorded a higher median household income, \$90,626, than that of Massachusetts and the U.S. at \$66,658 and \$53,046, respectively. ■



Continued from page 1

MetroWest Cost of Living on the Rise**Jay Nicholls**

Intern III

Focus

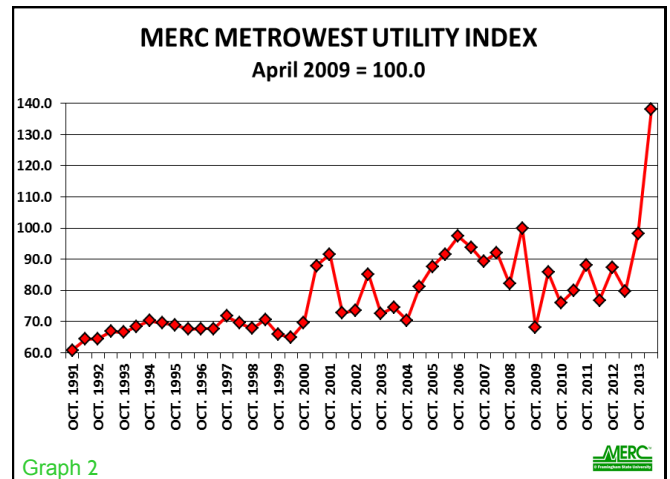
Cost of Living

Major

Finance

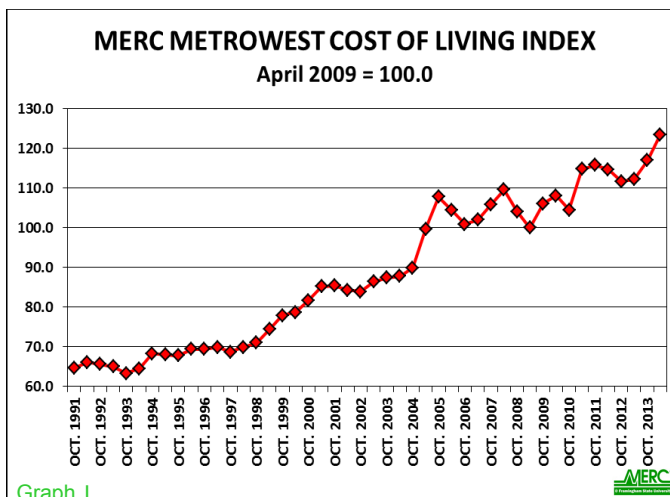
YOG 2015

from October 1991 to April 2014, with April 2009 as the base year at a value of 100.0. The index increased for the third survey in a row reaching a new all time high. The Index recorded a value of 123.5, meaning the overall cost of living in MW was about 23.5% more expensive in April 2014 than April 2009. This figure is 5.55% higher than the October 2013 value of 117.0. Since the first survey in October 1991, the index is up over 91%, resulting in an average annual increase of approximately 4%. The MetroWest Utility

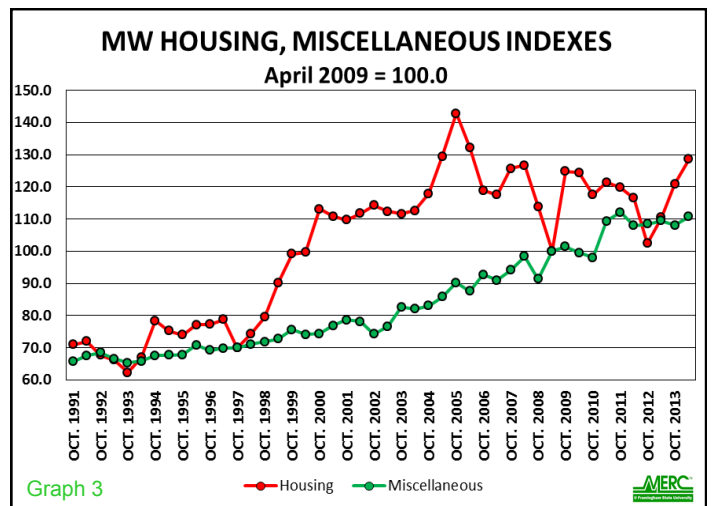


127.5%, equating to an average annual increase of about 5.3%

Graph 3 below shows the Housing Index, in red, as well as the Miscellaneous Goods and Services Index, in green, from October 1991 until April 2014. Housing prices have been relatively volatile over the past decade, with the index reaching a peak in October 2005 at a value of 142.8, which means housing costs in the region were approximately 43% higher in October 2005 than in April 2009, the base year. However, the sub-index has been on a steady rise since October 2012 where it recorded a value of 102.4. The Miscellaneous Goods and Services Index has seen a steady increase from year to year, but it has plateaued in recent years with values hovering around 110. The April 2014 survey recorded a value of 110.7, just under its all-time high of 112.1 in October 2011. ■



Index is shown above to the right in Graph 2, with April 2009 as the base year indexed at 100.0. The graph shows data from the first survey in October 1991 until our most recent survey in April of 2014. Since the relative low in October 2009 of 68.2, the index has oscillated between the high eighties and the mid-seventies. In October 2013, the index hit 98.2, nearly reaching the base year value. Just six months later in April of this year, the index reached a new all-time high of 138.1. This means that utilities were over 38% more expensive in April 2014 than in April 2009, and a staggering 40.6% more expensive than the previous year. Over the entire analyzed period, the index rose approximately





Andre Fernandes

Intern III

Focus

Economic Index

Major

Quantitative Econ.
YOG 2014

Debuting the MERC Economic Index

By: Andre Fernandes

At the semiannual Advisory Board meeting in April 2014, MERC researchers presented an initiative to create a regional economic index for MetroWest. An economic index is a cyclical indicator designed to measure regional economic activity for which zero denotes a long-run, stable trend. Furthermore, positive values indicate an increase in economic activity while negative values indicate a decrease in economic activity. This regional economic index, which covers

the Greater MetroWest region (GMW), targets the lack of local economic research compared to the state and nation. MERC research has shown GMW has a different economic profile than other regions in the Commonwealth, and statewide measures are constrained by assumptions of economic homogeneity among all communities in the state. State data often overlooks important differences in local economies.

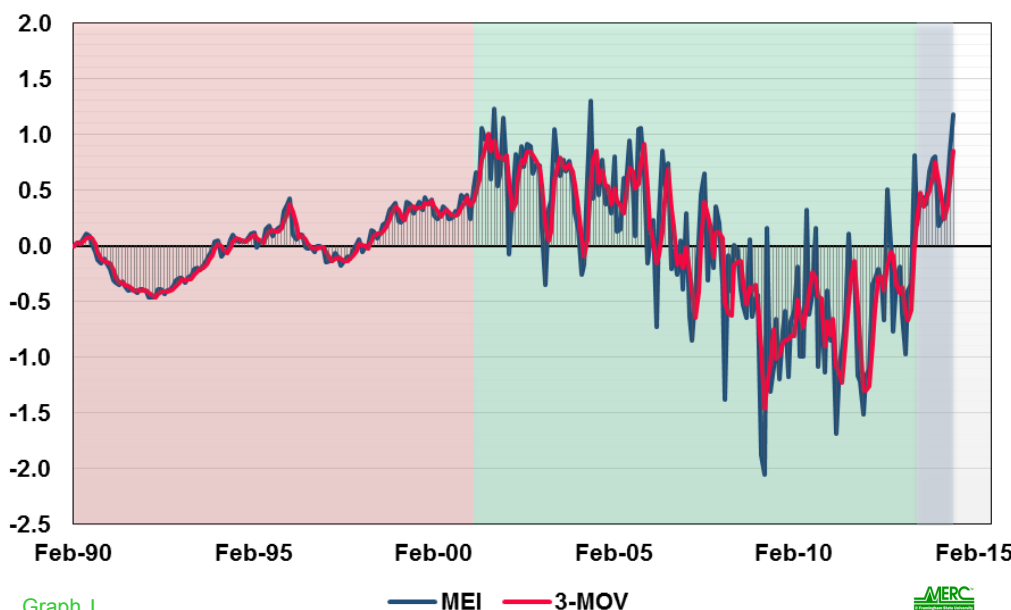
The MERC Economic Index (MEI) statistical model is divided into three subdivisions because monthly economic data for GMW communities faces different time lags and available ar-

chives. The first subdivision, denoted below by the pink shade on Graph 1 below, is composed of three economic indicators (unemployment rate, estimated total employment, and jobless claims) from 1990 to 2001 to estimate economic activity prior to the 2000s. This subdivision lacks monthly NAICS employment data, established in 2001, and building permit data, which is available from 1996 onward. The second subdivision, denoted by the green shade on Graph 1, marks the official MEI values which include NAICS employment by super sectors and building permits. Since employment data is made available at a two to three quarter lag, the second subdivision ends on the last available monthly employment report. Lastly, economic data must be reported in a timely manner to be most useful, so we have created a third subdivision, denoted by the blue shade on Graph 1, that allows MERC to publish monthly, preliminary values for the MEI at a shorter two-month lag. This last subdivision uses four economic indicators (unemployment rate, estimated total employment, jobless claims, and building permits) to estimate current regional economic activity. Graph 2, on page 9, compares GMW Total Employment, the aggregate component of the employment indicators used in the second subdivision, and the Framingham NECTA Employment Estimator, derived from a BLS

survey of 140,000 businesses and government agencies across the nation. The two variables are scaled and detrended by log difference for comparison; the two variables behave similarly which indicates that the employment estimator is a satisfactory approximation for actual total employment in the region.

Although the MEI, fully depicted by Graph 1, remains under further research and review, this regional cy-

MERC Economic Index



Graph 1

Continued on page 9

Continued from page 1

Greater Marlborough Employment Up in 2013



Samantha Irvine

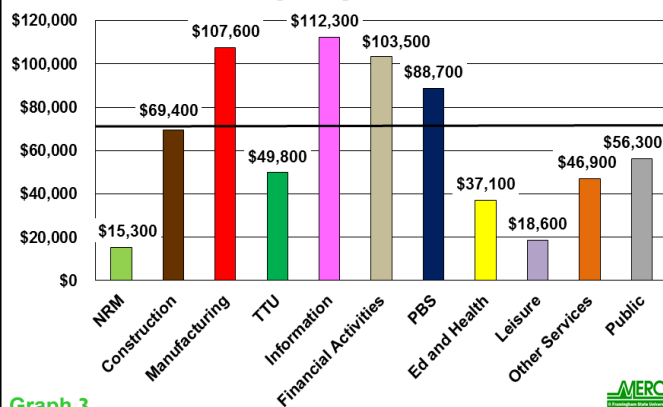
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ployment at 24% or 16,800 jobs, followed by Trade, Transportation and Utilities (TTU) at 23%, or 15,600 jobs. Manufacturing with 14% came in third. Combined, these three large supersectors dominated GMR employment. PBS, TTU, and Manufacturing supplied 41,600 jobs, over 60% of the regional employment. The remaining supersectors produced 39% of GMR employment. Furthermore, in 2013 the private sector produced 93%, while the public sector produced 7% of the jobs.

In 2013 the GMR payroll amounted to \$4.8 billion. Payroll includes all wages and salaries paid to employees including commissions, bonuses, stock options, overtime, and sick pay. Among the NAICS supersectors, refer to Graph 2 below, PBS produced the largest payroll in the region, 31% or \$1.5 billion, followed by Manufacturing at 21%, or \$1 billion. Combined, these two supersectors generated \$2.5 billion or over half of the region's total payroll. TTU, which was second in jobs, was a distant third in payroll. Among the nine remaining supersectors, six supersectors each produced 5% or less of regional payroll: Natural Resources and Mining (NRM), Construction, Information, Education and Health, Leisure and Hospitality, and Other Services.

In 2013 the average annual wage for

GMR AVG WAGE BY SUPERSECTOR 2013
 Average Wage = \$69,800



Graph 3

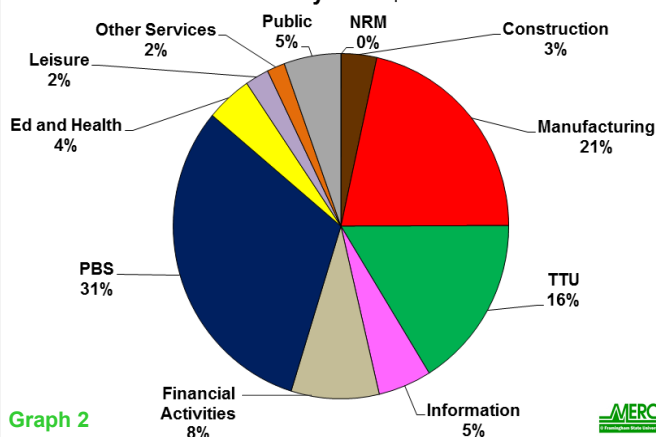
GMR was \$69,800 which is shown by the black line on Graph 3 above. The average wage was computed by dividing the gross annual payroll by the average annual employment. Among all the supersectors in the region, Information offered the highest average annual wage, \$112,300. Manufacturing produced the second largest average wage, \$107,600, followed by Financial Activities, \$103,500. Four supersectors: Manufacturing, Information, Financial Activities, and PBS produced an average wage higher than the regional average wage. Five of the remaining supersectors recorded average wages below \$50,000. Two supersectors reported their average wage lower than \$20,000: Natural Resources and Mining, \$15,300 and Leisure and Hospitality at \$18,600 in wage. Six Leisure and Hospitality jobs would provide wages equal to one Information job.

In 2013, the number of establishments or separate places of work in GMR totaled 3,650. Among the 11 supersectors only two supersectors totaled more than 500 establishments each. PBS reported 840 establishments or 23% of total GMR establishments while TTU followed closely with 770 establishments, or 21%. Together, these two supersectors provided 1,600 establishments or 44% of the regional total. All of the remaining supersectors each contributed fewer than 500 establishments.

To recap, 2013 Greater Marlborough Region jobs, payroll, average wage, and establishments slightly increased from 2012. GMR Employment totaled 68,400, with payroll at \$4.8 billion, average wage at \$69,800 and establishments amounted to 3,650. ■

GMR PAYROLL BY SUPERSECTOR 2013

Total Payroll = \$4.8 B

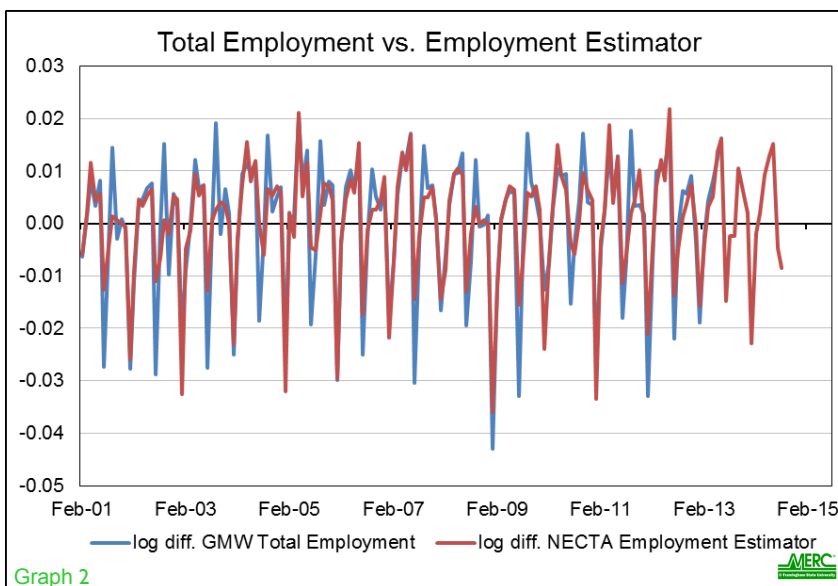


Graph 2

Continued from page 7

clical indicator conveys a compelling story about the economic profile for Greater MetroWest in the last 24 years. The lowest trough in 2009, displayed on Graph 1 on page 7, shows the most arduous moments of the Great Recession for our region; the long recovery period shown through the index is a tangible symbol of our slow climb out of the economic crisis. Economic booms and recessions affect our businesses and communities directly, and there is currently no local indicator of economic activity for our region. The people and businesses in GMW need this quality information to make informed decisions about current and future investments.

When the MEI becomes publicly available, it will be a unique measure of economic activity for our region; furthermore, it is our hope that the MEI helps businesses and government representatives better understand the state of the local economy and analyze how national economic events disperse into the economy of our region. ■



Graph 2

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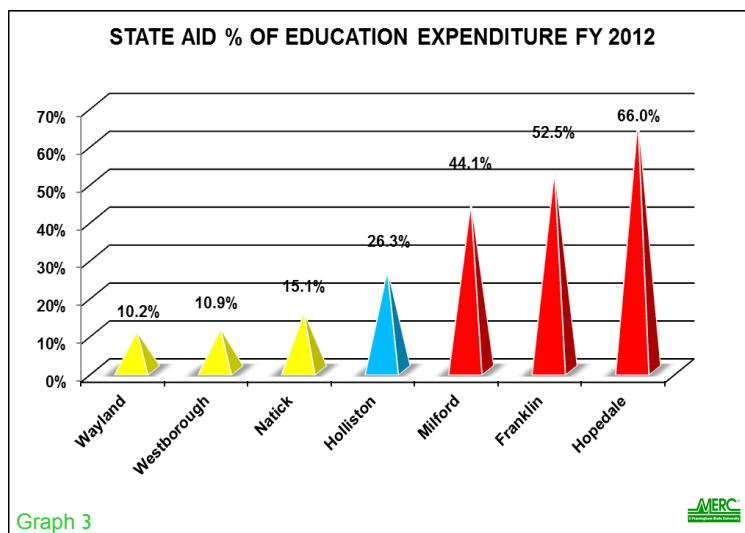
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Municipal Spending and Education Expenditures in the 495 Region

ties from the Commonwealth for education cost. Wayland and Westborough received the smallest percentage of their education expenditures from state aid at 10.2% and 10.9%, respectively, followed by Natick at 15.1%. Hopedale had the highest amount at 66.0%. Franklin registered the second highest at 52.5%, followed by Milford with 44.1%. Holliston reported the median at 26.3%.

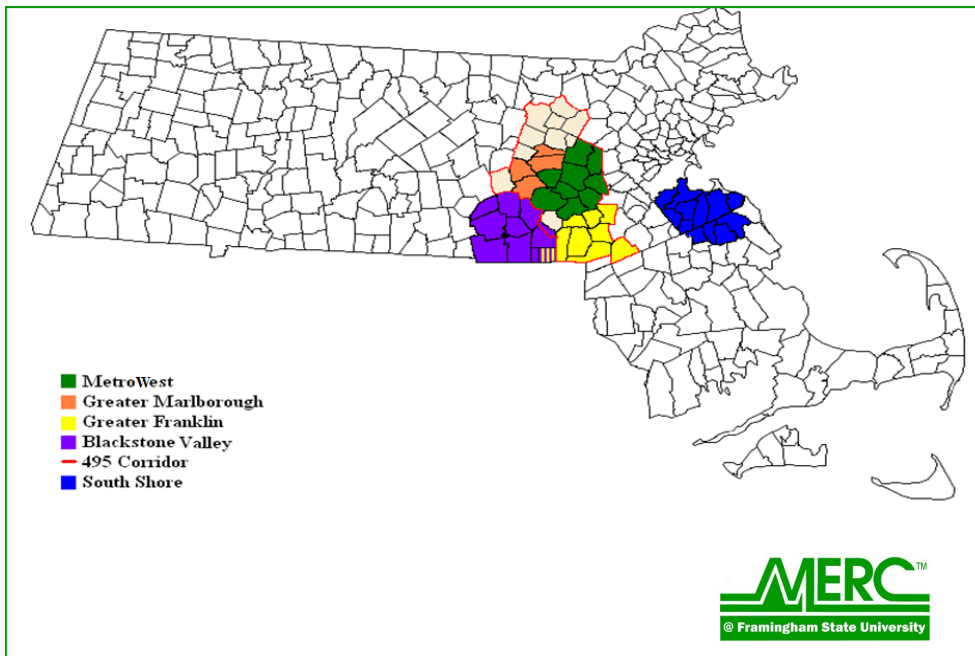
Concluding, Sherborn had the highest amount of total municipal spending per capita followed by Wayland. Framingham reported the largest cost per student and Hopedale received the highest percentage of state aid as a percentage of education expenditures. ■



Graph 3

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 2014. MERC uses the U-3 rate, which is the official unemployment rate.

Measures: U.S. September 2014

U-1	Persons unemployed 15 weeks or longer, as a percentage of the civilian labor force	2.7%
U-2	Job losers and persons who completed temporary jobs, as a percentage of the civilian labor force	2.7%
U-3	Total unemployed persons, as a percentage of the civilian labor force (the official unemployment rate)	5.7%
U-4	Total unemployed persons plus discouraged workers, as a percentage of the civilian labor force plus discourage workers	6.2%
U-5	(U-4) plus all other "marginally attached" workers, as a percentage of the civilian labor force plus all "marginally attached" workers	7.1%
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	11.3%

September 2014 UNEMPLOYMENT RATES Not Seasonally Adjusted (Preliminary Data)

495/MW 5.0%

Blackstone Valley	6.3%
Blackstone	7.6%
Douglas	5.5%
Grafton	6.1%
Hopedale	5.1%
Mendon	4.1%
Millbury	6.6%
Millville	7.4%
Northbridge	6.9%
Sutton	6.4%
Upton	5.7%
Uxbridge	6.5%

Greater Franklin	5.6%
Bellingham	7.0%
Blackstone	7.6%
Foxborough	5.4%
Franklin	5.2%
Medfield	4.8%
Medway	5.3%
Millis	5.0%
Norfolk	5.4%
Wrentham	5.1%

Greater Marlborough	5.2%
Hudson	4.9%
Marlborough	5.2%
Northborough	4.9%
Westborough	5.7%

MetroWest	4.8%
Ashland	4.7%
Framingham	4.7%
Holliston	5.2%
Hopkinton	5.2%
Natick	4.6%
Sherborn	4.7%
Southborough	4.3%
Sudbury	4.9%
Wayland	4.8%
Milford	5.4%
South Shore	5.9%
Abington	5.9%
Braintree	5.9%
Cohasset	4.7%
Hanover	4.9%
Hingham	4.3%
Milton	5.6%
Norwell	5.0%
Quincy	6.0%
Randolph	6.7%
Rockland	6.1%
Weymouth	6.2%
Massachusetts	6.2%
United States	5.7%

A Peek Inside MERC



MERC Interns: Fall 2014



Back Row: Thierry Aka, Romery Gonzalez, Samantha Irvine, Kristen Hurley, Andre Fernandes, Sean Parker, Jay Nicholls

Front Row: Kerin Boti, Jeffrey Hollow, Christina Padovano, Levi Alves, Marcella Bentes

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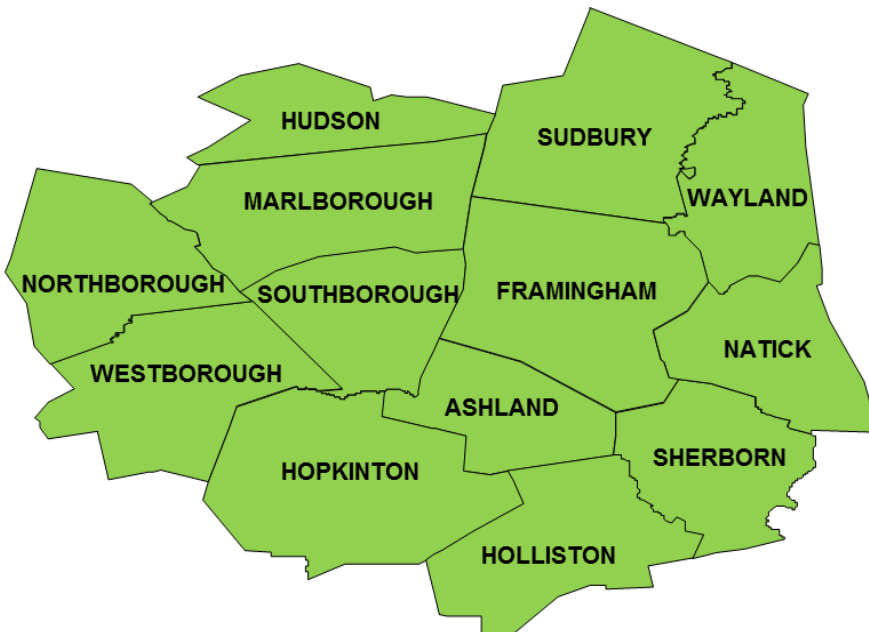
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