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# 2009 Economic Indicators for the 495/MetroWest Corridor©

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#### 495/METROWEST CORRIDOR - INTRODUCTION

The 495/MetroWest Corridor includes 32 communities along Interstate Route 495

west of Boston. With a population of 546,000, the 495/MetroWest Corridor has a well educated resident labor force of over 290,000 workers with household incomes above the state average. The region's 17,900 establishments provided a record 289,200 jobs and \$17.7 billion payroll in 2007. The region generates 1 out of every 11 jobs in the state and 10% of the Commonwealth's total payroll.

The highlights of this report, which looks at the employment and unemployment characteristics of the region include:

- A 2008 unemployment rate of 4.2%, lower than the rates for both the state and the nation,
- The number of jobs in the region rising faster than the region's labor force.
- Record highs in employment, payroll and average wage in 2007,
- Largest number of jobs in Trade,
   Transportation and Utilities;
   Professional and Business Services and
  - Professional and Business Services and Manufacturing,
- High concentrations of employment in Manufacturing, Professional and Business Services, and Information compared to the nation,
- A 1.5% average annual rate of net job growth between 2004 and 2007, and
- One out of every 12 jobs created or destroyed each year between 2004-07.



The MetroWest Economic Research Center (MERC) at Framingham State College creates and maintains economic databases on a number of regional economies in the state. For more information on the data contained in this report please contact MERC.





# UNEMPLOYMENT<sup>1</sup>

Each month the MetroWest Economic Research Center (MERC) at Framingham State College calculates a composite unemployment rate for the 495/MetroWest Corridor (495/MW). The unemployment rate is household-based and reflects the labor market status of the **residents** of the regions. The information for the rate is obtained from the Massachusetts Executive Office of Labor and Workforce Development, Division of Unemployment Assistance, which provides monthly estimates of the size of the local labor force, the number of employed and unemployed residents, and the unemployment rates for all Massachusetts cities and towns.

The unemployment rate is a measure of the amount of unutilized labor in the economy. The rate represents the proportion of unemployed individuals in the labor force. The labor force is defined as all civilian non-institutionalized persons age 16 and over who are either employed or unemployed. **employed** are those individuals who work as paid employees, are self-employed, or who work 15 hours or more as unpaid workers in a family operated enterprise. Also included as employed are people who did not work but who had a job from which they were temporarily absent due to vacation, illness, childcare problems or other personal obligations, whether or not they were paid during their absence. The **unemployed** are those who did not hold a job during the survey period but were actively seeking employment. For example, the January 2009 unemployment rate in the 495/MetroWest Corridor of 6.3% was based on the following information: the size of the labor force was estimated at 290,637 workers, the sum of 272,205 residents who were employed and 18,432 residents who were unemployed. The rate, expressed as a percentage, was obtained by dividing the unemployed (18,432) by the labor force (290,637) and multiplying by 100 to get the unemployment rate of 6.3%.

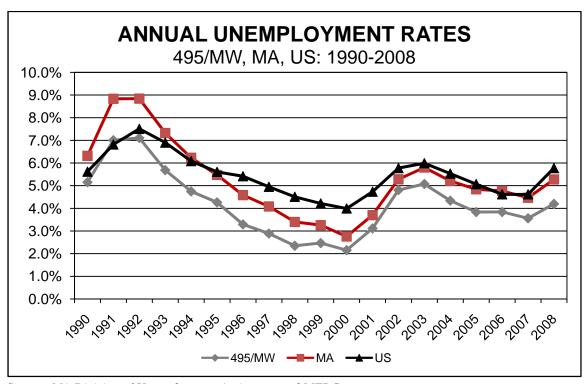
Not everyone in the working age population is included in the labor force. Individuals who were in the working age population but who could not be classified as employed or unemployed (a full time homemaker, for example) would not be counted in the labor force.

The local area unemployment rates for the cities and towns are not seasonally adjusted and are subject to periodic revision and re-bench marking. For purposes of comparison, the rates referred to for the state and the nation are also not seasonally adjusted.

<sup>&</sup>lt;sup>1</sup>The definition of terms such as labor force, employed, and unemployed are based on those in *The BLS Handbook of Methods*, U. S. Bureau of Labor Statistics, April 2003.



In 2008, the 495/MetroWest Corridor experienced an annual unemployment rate of 4.2%, an increase of 0.6% from the rate in 2007. Historically, the lowest unemployment rate in the region was recorded in 2000 at 2.2%, while the highest rate was recorded in 1992 at 7.1%. By comparison, in 2008 Massachusetts posted an unemployment rate of 5.3%, an increase of 0.8% from the 2007 unemployment rate of 4.5%. The 2008 rate was the highest rate the state had posted since 2004 when it reached 5.2%. The United States unemployment rate increased from 4.6% in 2007 to 5.8% in 2008. This increase of 1.2% was larger than the increases experienced by both the state and the region over that same time. The 5.8% rate in 2008 was the highest unemployment rate the US had experienced since it reached its most recent peak at 6.0% in 2003.

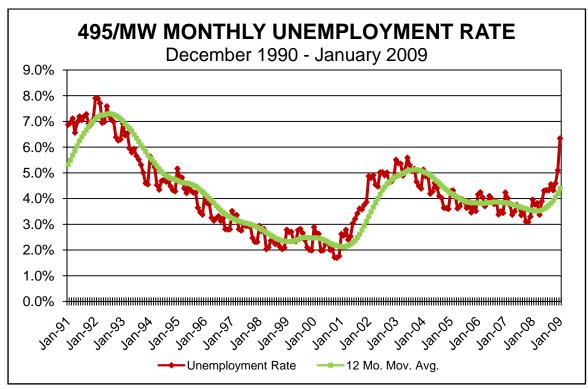


Source: MA Division of Unemployment Assistance and MERC

Year	495/MW	MA	U.S.
1992	7.1%	8.8%	7.5%
1994	4.7%	6.2%	6.1%
1996	3.3%	4.6%	5.4%
1998	2.3%	3.4%	4.5%
2000	2.2%	2.8%	4.0%
2002	4.8%	5.3%	5.8%
2004	4.3%	5.2%	5.5%
2006	3.8%	4.8%	4.6%
2008	4.2%	5.3%	5.8%



The unemployment rate in the 495/MetroWest Corridor (shown in red) in January 2009 was 6.3%, which was the highest unemployment rate the region recorded since March 1993 when it reached 6.5%. The January 2009 unemployment rate of 6.3% represents an increase of 2.3% over the 4.0% unemployment rate the region experienced in January 2008. The 12-month moving average (shown in green), which smoothes out the seasonal variation in the data, was 4.4% in January 2009, which was the highest rate the region had experienced since October 2004. The 12-month moving average of 4.4% in January 2009 was 0.9% higher than in January 2008.

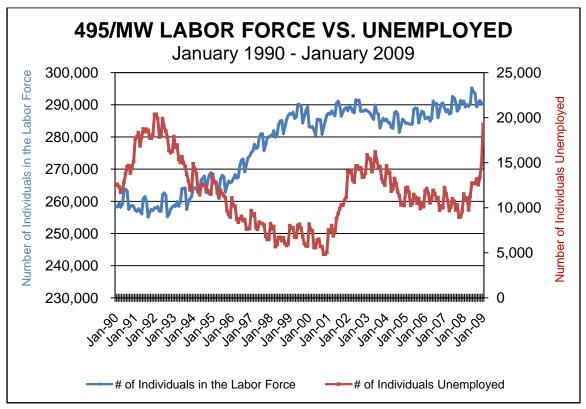


Source: MA Division of Unemployment Assistance and MERC

Month/Year	Unemployment Rate	12-Month Moving Average
July 2004	4.4%	4.7%
January 2005	4.3%	4.2%
July 2005	3.9%	3.9%
January 2006	4.2%	3.8%
July 2006	4.0%	3.9%
January 2007	4.2%	3.8%
July 2007	3.7%	3.7%
January 2008	4.0%	3.5%
July 2008	4.3%	3.7%
January 2009	6.3%	4.4%



The total number of individuals in the labor force in the 495/MetroWest Corridor (shown in blue and measured on the left hand scale) in January 2009 was 290,637. During the 19 year period, the highest number of individuals in the labor force was recorded in June 2008 with a total of 295,224. The number of individuals unemployed in the region (shown in red and measured on the right hand scale) in January 2009 was 18,432. This was the highest number the region posted since August 1992 when 18,522 individuals were seeking work. The lowest number of unemployed individuals in the region was recorded in November 2000, with 4,833 residents unemployed.

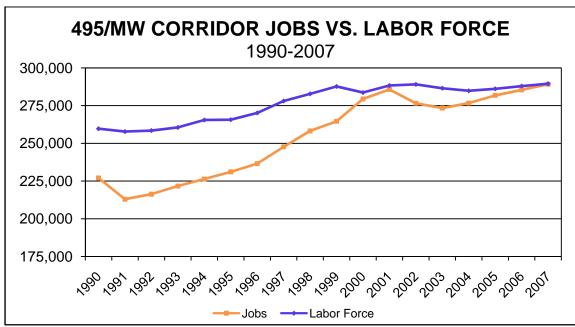


Source: MA Division of Unemployment Assistance and MERC

Month/Year	Persons in the Labor Force	Persons Unemployed	Unemployment Rate
Jan. 1993	258,641	17,923	6.9%
Jan. 1995	265,581	13,717	5.2%
Jan. 1997	275,096	9,678	3.5%
Jan. 1999	287,336	8,012	2.8%
Jan. 2001	287,350	7,534	2.6%
Jan. 2003	288,164	15,874	5.5%
Jan. 2005	284,288	12,200	4.3%
Jan. 2007	289,071	12,242	4.2%
Jan. 2009	290,637	18,432	6.3%



The 495/MetroWest Corridor's jobs (shown in orange) refers to the number of jobs located in local area establishments, while the labor force (shown in blue) consists of all the area residents who are currently employed or unemployed. During the 18 year period, the total number of jobs in the region peaked in 2007 at 289,199, while the smallest number of jobs, 212,980, was recorded in 1991. Similarly, the size of the labor force in the 495/MetroWest Corridor peaked in 2007 with 289,521 individuals, while the smallest number of individuals in the labor force was recorded in 1991 at 257,807. Between 1990 and 2007 the number of jobs was consistently lower than the number of individuals in the labor force. This implies that the region has been a net exporter of labor. The greatest difference between the number of jobs and the size of the labor force was 44,827 in 1991. Since 2003, the number of jobs has increased more than the number of individuals in the labor force, resulting in a narrowing of the gap between jobs and the labor force. In 2007, the number of jobs was 289,199 while the labor force was 289,521 individuals, a difference of only 322, which was the smallest gap between the number of jobs and the labor force in the region throughout the period.



Source: MA Division of Unemployment Assistance and MERC

Year	Jobs	Labor Force
1995	231,090	265,682
1997	247,701	278,048
1999	264,612	287,697
2001	285,725	288,335
2003	273,363	286,508
2005	281,794	286,141
2007	289,199	289,521



# **EMPLOYMENT**<sup>1</sup>

The MetroWest Economic Research Center (MERC) at Framingham State College creates and maintains an employment database for the MetroWest CCSA, the Greater Marlborough Region, the South Shore CCSA, and other substate economies. MERC has documented remarkable growth in regional employment and wages as well as major changes in the type and location of industrial employment over the past 28 years. For this publication MERC has produced employment data for the 495/MetroWest Corridor (495/MW).

MERC research relies on the Massachusetts Executive Office of Labor and Workforce Development, Division of Unemployment Assistance, ES-202 series to develop time series for employment, payroll, wages and establishments in the 495/MetroWest Corridor. ES-202 data are derived from reports filed by all employers subject to unemployment laws, both state and federal.

In 2002, for the first time, employers were classified by industry solely in accordance with the North American Industry Classification System (NAICS). NAICS groups together establishments that use the same processes to produce goods and services. NAICS has permanently replaced the Standard Industrial Classification (SIC) system, which was in use for the previous 70 years. Since the criteria for the classification of establishments differs between NAICS and the SIC system, time series data for industrial sectors prior to 2001 cannot be provided. For a more detailed description of NAICS categories as used in this publication, please see the Appendix.

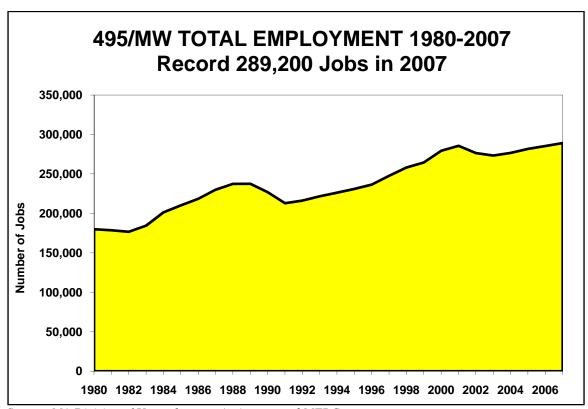
In the ES-202 series **employment** refers to the count of all persons on the payroll of establishments subject to the law, who worked full-time or part-time within the 32 communities of 495/MetroWest Corridor. Annual **payroll** includes all wages and salaries paid to covered employees including commissions, bonuses, stock options, overtime and sick pay. The **average annual wage** is derived by dividing the gross annual payroll by the average annual employment. **Establishment** or place of work refers to an economic unit that produces goods or services at a single location and is engaged in one type of economic activity. A firm therefore may have one or more establishments where work is produced. More complete definitions are included in the Appendix.

Please note that data and analysis included in this section (495/MetroWest Corridor - Employment) refer to business establishments, not residents, located within the 32 communities. Please also note that totals may not always add due to rounding.

<sup>&</sup>lt;sup>1</sup>The definition of terms included in this introduction are based on those in the *Handbook of U.S. Labor Statistics* (1998), *Employment and Wages in Massachusetts and the Major Metropolitan Statistical Areas Annual Averages 1993-1996*, and the *North American Industry Classification System - United States*, 2002.



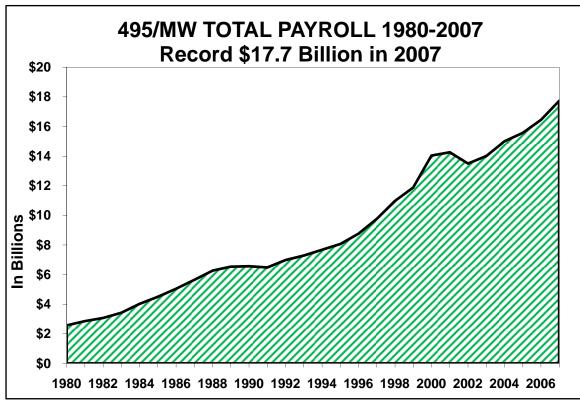
In 2007 495/MetroWest Corridor employment recorded a new historical high of 289,200 jobs, surpassing the previous 2001 peak. The region added 3,700 jobs from 2006, a 1.3% gain. In contrast, 2007 Massachusetts' employment remained -1.2% below its 2001 historical peak. Between 1980 and 2007, employment climbed from 180,000 jobs to 289,200, a gain of 109,200 jobs. From 1980-2007 regional employment grew by 60.7%, more than twice the state increase (24.7%) and exceeding the nation (51.8%). The 495/MW Corridor outperformed the Commonwealth as its share of state employment rose from 6.9% in 1980 to 8.9% or one out of every 11 jobs in Massachusetts in 2007. Two major expansions fueled the region, the first in the 1980s with jobs peaking in 1989 at 237,600. In the subsequent recession employment fell -10.3% in two years. From 1991-2001 the 495/MW Corridor added another 48,100 jobs to reach the 2001 peak of 285,700. In the 2001-03 recession employment fell by -4.3% before recovering.



Year	Total Employment	% of MA Employment
1980	180,000	6.9%
1982 (low)	176,700	6.8%
1985	210,200	7.3%
1990	227,000	7.7%
1995	231,100	7.9%
2000	279,400	8.5%
2005	281,800	8.9%
2007 (peak)	289,200	8.9%



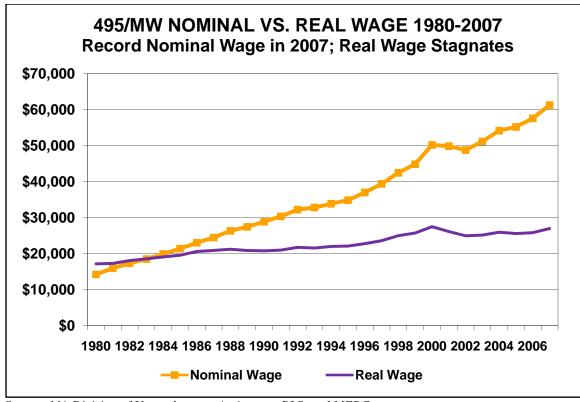
For the fourth year in a row, the 495/MetroWest Corridor generated a record payroll, \$17.7 billion in 2007, up \$1.3 billion or 7.8% from 2006. The region provided one of out of every 10 payroll dollars in the Massachusetts economy in 2007. The 495/MW Corridor total payroll climbed from \$2.6 billion in 1980 to \$17.7 billion in 2006, a 590% increase as compared to a 399% gain for the state and a 369% gain for the nation in 27 years. The region outpaced the state as regional payroll grew on average 7.4% per year, faster than the 6.1% for Massachusetts and 5.9% for the U.S. The region experienced dramatic growth as nominal payroll (or payroll not corrected for inflation) rose every year with the exception of 1991 and 2002. In the two recessions, changes in nominal payroll differed markedly in severity from changes in employment. In the severe 1989-1991 recession employment fell by -10.4% while payroll declined -1.3%. In the 2001-03 recession employment fell by -4.3% while payroll dropped by -5.3%.



Year	Total Payroll	% of MA Payroll
1980 (low)	\$2,570,943,000	7.2%
1985	\$4,504,540,000	8.0%
1990	\$6,563,346,700	8.4%
1995	\$8,062,668,100	8.5%
2000	\$14,038,897,900	9.7%
2005	\$15,566,865,100	9.8%
2007 (peak)	\$17,731,519,100	9.9%



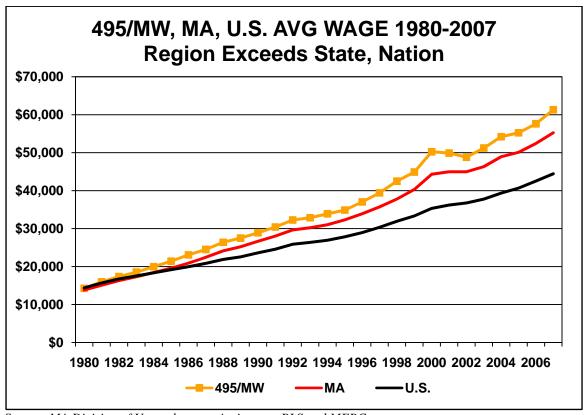
In 2007 the average annual wage for the 495/MetroWest Corridor reached a record high of \$61,300, a 6.4% gain from 2006 and the largest percentage increase since 2000. The real average annual wage, or wage corrected for inflation, climbed 4.4% to \$27,000 in 2007, the largest annual percentage gain since 2000. The 495/MW Corridor average annual wage climbed steadily from \$14,300 in 1980 to \$61,300 in 2007, an increase of 329%. During the entire period the average nominal wage declined only twice, in 2001 and 2002. However, the real average annual wage, or annual wage corrected for inflation using the CPI Boston for Urban Wage Earners and Clerical Workers (1982-84 = 100), rose much more slowly over the period, climbing from \$17,200 in 1980 to \$27,000 in 2007, a gain of 57%. Declines occurred during and after both recessions, in 1989, 1990 and 1993, and again in 2001, 2002, and 2005. The average real wage stagnated after reaching its historical peak in 2000. In 2007 the average real wage remained \$500 or 2% below its 2000 peak.



Year	Nominal Wage	Real Wage
1980	\$14,300 (low)	\$17,200 (low)
1985	\$21,400	\$19,600
1990	\$28,900	\$20,800
1995	\$34,900	\$22,200
2000	\$50,200	\$27,500 (peak)
2005	\$55,200	\$25,600
2007	\$61,300 (peak)	\$27,000



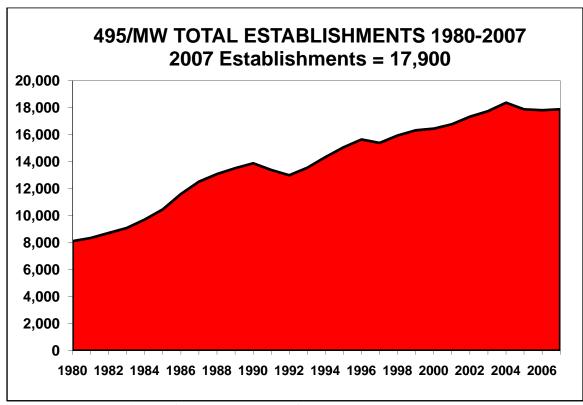
In 2007 the 495/MetroWest Corridor average annual wage of \$61,300 exceeded the Massachusetts average wage of \$55,300 by 10.9% and the U.S. average wage of \$44,500 by 37.9%. On average over the period, the 495/MW Corridor wage increased by 5.5% annually, higher than the Massachusetts and U.S. average annual gains of 5.3% and 4.3% respectively. In 1980 the average wage in the 495/MW Corridor of \$14,300 lay between the state's average wage of \$13,800 and the U.S. average wage of \$14,400. Over the next 20 years, the gap between the 495/MW Corridor average annual wage and those of the state and nation would widen strikingly. By 2000 the 495/MW Corridor average wage of \$50,200 exceeded the state's average wage by \$5,900 (13.3%) and the U.S. by \$14,900 (42.2%). After the gap narrowed in 2001 and 2002 due to the decline in the 495/MW Corridor average wage, the gap again widened.



Year	495/MW Avg Wage	MA Avg Wage	US Avg Wage
1980 (low)	\$14,300	\$13,800	\$14,400
1985	\$21,400	\$19,600	\$19,200
1990	\$28,900	\$26,700	\$23,600
1995	\$34,900	\$32,300	\$27,800
2000	\$50,200	\$44,300	\$35,300
2005	\$55,200	\$50,100	\$40,700
2007 (peak)	\$61,300	\$55,300	\$44,500



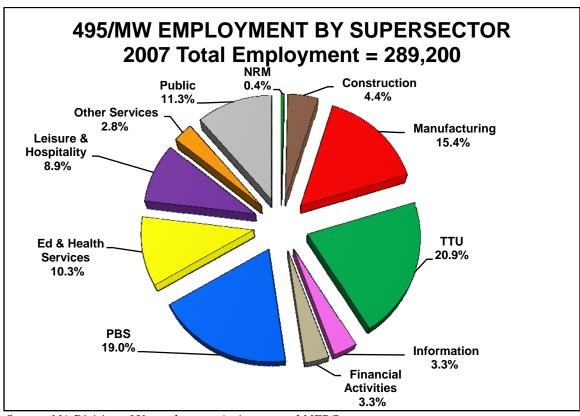
In 2007 almost 17,900 establishments or separate places of work were located in the 495/MetroWest Corridor, up 70 establishments or 0.4% from 2006. In 2007 there were 16.2 jobs per 495/MW establishment. Between 1980 and 2007 the number of regional establishments climbed by 120%; the region exceeded the 77% gain for Massachusetts and the 90% gain for the U.S. On average the number of establishments in the 495/MW Corridor grew 5.7% annually as opposed to 2.1% for the state and 2.4% for the U.S. Rapid increases occurred during the 1980s as nearly 5,800 establishments were added to the region. Subsequently the number of establishments grew more slowly with absolute declines occurring in 1991, 1992, 1997, 2005 and 2006. The 495/MW Corridor share of all Massachusetts establishments rose from 6.8% in 1980 to 8.4% in 2007. One out of every 12 Massachusetts establishments was located in the 495/MW Corridor during 2007.



Year	Total Establishments	% of MA Establishments
1980 (low)	8,100	6.8%
1985	10,500	7.4%
1990	13,900	8.0%
1995	15,100	8.5%
2000	16,400	8.7%
2004 (peak)	18,350	8.6%
2005	17,900	8.6%
2007	17,900	8.4%



In 2007 495/MetroWest Corridor employment reached a record 289,200 jobs, up 1.3% from 2006. The five largest supersectors, Trade, Transportation, & Utilities (TTU) with 20.9% of the region's employment, Professional & Business Services (PBS) with 19%, Manufacturing (15.4%), Public (11.3%), and Education and Health (10.3%) produced over three-quarters of total regional employment. TTU and PBS each generated more than 50,000 jobs in the 495/MW Corridor. Among the remaining supersectors, Leisure and Hospitality contributed 8.9% of regional employment and the rest provided less than 5% each.

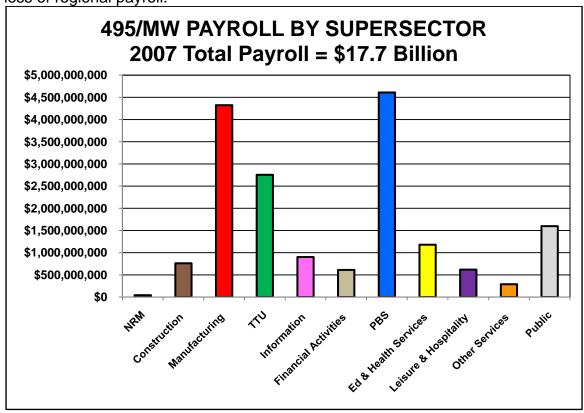


Source: MA Division of Unemployment Assistance and MERC

Supersector	2007 Jobs	% of Region
Natural Resources (NRM)	1,100	0.4%
Construction	12,800	4.4%
Manufacturing	44,600	15.4%
Trade, Transportation, & Utilities (TTU)	60,300	20.9%
Information	9,400	3.3%
Financial Activities	9,600	3.3%
Professional & Business Services (PBS)	54,900	19.0%
Education & Health Services	29,900	10.3%
Leisure & Hospitality	25,700	8.9%
Other Services	8,200	2.8%
Public	32,700	11.3%
Total 495/MW Employment	289,200	100.0%



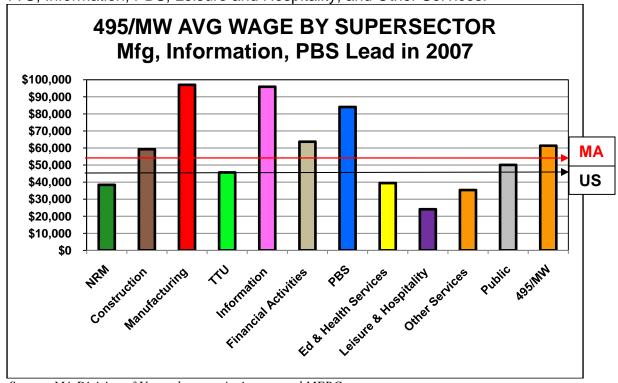
In 2007 the 495/MetroWest Corridor generated a record payroll of \$17.7 billion, up 7.8% from 2006. Two supersectors, Professional & Business Services (PBS) with \$4.6 billion in payroll and Manufacturing with \$4.3 billion in payroll, together produced half of the 496/MW Corridor's total payroll. Trade, Transportation & Utilities (TTU), the region's largest supersector in terms of employment, provided \$2.8 billion in of regional payroll followed by the Public and Education and Health Services supersectors. The remaining six supersectors each provided 5% or less of regional payroll.



Supersector	2007 Payroll (In Millions)	% of Region
Natural Resources (NRM)	\$42.2	0.2%
Construction	\$761.1	4.3%
Manufacturing	\$4,323.6	24.4%
Trade, Transportation, & Utilities (TTU)	\$2,755.6	15.6%
Information	\$901.5	5.1%
Financial Activities	\$612.4	3.5%
Professional & Business Services (PBS)	\$4,610.0	26.1%
Education & Health Services	\$1,180.3	6.7%
Leisure & Hospitality	\$619.7	3.5%
Other Services	\$289.1	1.6%
Public	\$1,636.0	9.0%
Total 495/MW Payroll	\$17,731.5	100.0%



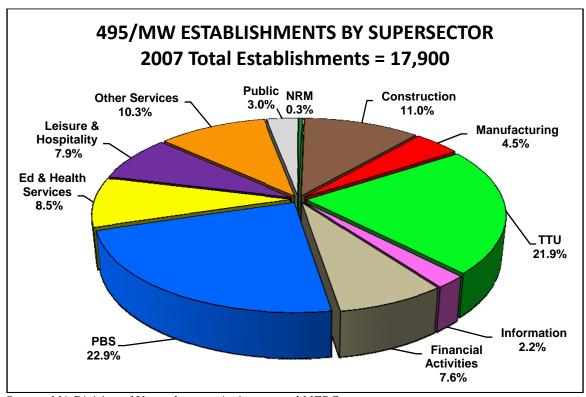
The 495/MetroWest Corridor average annual wage recorded a new historical high of \$61,300 in 2007, 10.9% above the MA average annual wage and 37.9% above the U.S. average annual wage. Manufacturing led all supersectors with an average annual wage of \$97,000 followed by Information (\$95,900) and Professional and Business Services (\$84,000). The Trade, Transportation, & Utilities (TTU) supersector, which ranked first in employment share and third in payroll share, ranked seventh in average wage, \$45,700. Comparing the regional and state average wages in each supersector, the 495/MW average wage exceeded the state in seven supersectors: Construction, Manufacturing, TTU, Information, PBS, Leisure and Hospitality, and Other Services.



Supersector	495/MW Avg Wage 2007	MA Avg Wage 2007
Natural Resources (NRM)	\$38,400	\$47,600
Construction	\$59,300	\$59,000
Manufacturing	\$97,000	\$69,600
Trade, Transportation, & Utilities (TTU)	\$45,700	\$41,900
Information	\$95,900	\$83,400
Financial Activities	\$63,700	\$104,600
Professional & Business Services (PBS)	\$84,000	\$74,000
Education & Health Services	\$39,500	\$47,800
Leisure & Hospitality	\$24,100	\$21,300
Other Services	\$35,400	\$27,600
Public	\$50,100	\$51,500
Total 495/MW Average Wage	\$61,300	\$55,300



Almost 17,900 establishments or separate places of work were located within the 495/MetroWest Corridor in 2007. The distribution of establishments by supersector differed from the regional distributions of both employment and payroll. Four supersectors: Professional & Business Services (PBS), Trade, Transportation, & Utilities (TTU), Construction, and Other Services provided two-thirds of all regional establishments. The Manufacturing supersector, which ranked third in the regional employment and first in average wage, ranked eighth in the number of establishments.

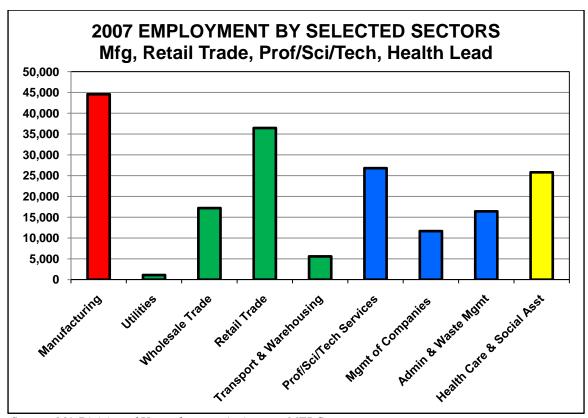


Source: MA Division of Unemployment Assistance and MERC

Supersector	2006 Est.	% of Region
Natural Resources (NRM)	60	0.3%
Construction	2,000	11.0%
Manufacturing	800	4.5%
Trade, Transportation, & Utilities (TTU)	3,900	21.9%
Information	400	2.2%
Financial Activities	1,400	7.6%
Professional & Business Services (PBS)	4,100	22.9%
Ed & Health Services	1,500	8.5%
Leisure & Hospitality	1,400	7.9%
Other Services	1,800	10.3%
Public	500	3.0%
Total 495/MW Establishments	17,900	100.0%



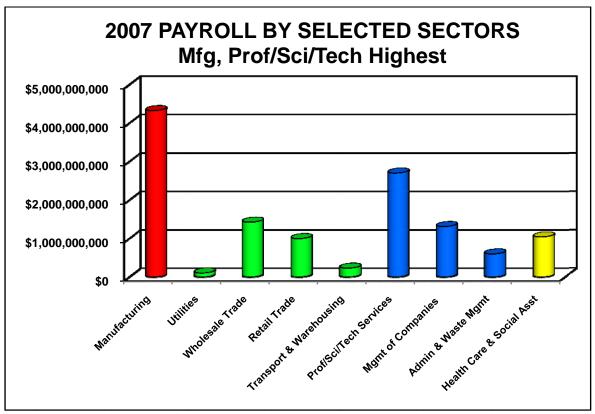
Three supersectors: Trade, Transportation and Utilities (TTU), Professional and Business Services (PBS), and Manufacturing provided over half of 495/MW Corridor employment in 2007. Employment figures for their eight component sectors and the Health Services and Social Assistance sector were compared. Manufacturing (red) generated the highest employment, 44,600 jobs. Among the four sectors (green) comprising the TTU supersector, Retail Trade produced the largest number of jobs, 36,400, followed by Wholesale Trade, Transportation and Warehousing, and Utilities. Among the three sectors (blue) comprising the PBS supersector, Professional, Scientific and Technical Services produced the largest employment, 26,800, followed by Waste and Administrative Services and Management of Companies. Among all sectors, Health Services and Social Assistance, generated the fourth largest number of jobs, 25,800.



Sector	2007 Employment	% 495/MW Employment
31-33-Manufacturing	44,600	15.4%
22-Utilities	1,100	0.4%
42-Wholesale Trade	17,200	5.9%
44-45-Retail Trade	36,400	12.6%
48-49-Transportation & Warehousing	5,600	1.9%
54-Professional, Scientific & Technical Services	26,800	9.3%
55-Management of Companies	11,700	4.0%
56-Administrative & Waste Services	16,400	5.7%
61-Health Services & Social Assistance	25,800	8.9%



The distribution of payroll among the selected 495/MetroWest Corridor sectors differed from the distribution of employment in 2007. Five of these sectors each produced over \$1 billion in payroll. Among the selected sectors Manufacturing generated the highest payroll, \$4.3 billion, in 2007. Professional, Scientific, and Technical Services provided the second highest payroll, \$2.7 billion, followed by Wholesale Trade, \$1.4 billion, Management of Companies, \$1.3 billion, and Health Services and Social Assistance, \$1 billion. The remaining sectors each produced less than \$1 billion in payroll. Retail Trade, the region's second largest sector in terms of employment with 12.6% of regional jobs, produced only 5.6% of regional payroll.



Source: MA Division of Unemployment Assistance, MERC

Sector	2007 Payroll (millions)	% 495/MW Payroll
31-33-Manufacturing	\$4,323.6	24.4%
22-Utilities	\$103.4	0.6%
42-Wholesale Trade	\$1,424.6	8.1%
44-45-Retail Trade	\$997.3	5.6%
48-49-Transportation & Warehousing	\$230.4	1.3%
54-Professional, Scientific & Technical Services	\$2,700.2	15.3%
55-Management of Companies	\$1,310.5	7.4%
56-Administrative & Waste Services	\$599.3	3.4%
61-Health Services & Social Assistance	\$1,040.5	5.9%



In 2007 the average annual wage in the 495/MetroWest Corridor reached a record \$61,300. Among the nine selected sectors, Management of Companies and Enterprises offered the highest average annual wage, \$112,400, followed by Professional, Scientific and Technical Services at \$100,700. Three more sectors, Manufacturing, Utilities, and Wholesale Trade, offered average annual wages above \$80,000. Manufacturing and Professional, Scientific, and Technical Services are the region's first and third largest sectors in terms of employment. In contrast, the remaining four sectors each produced average annual wages of less than \$42,000. Included in these lower wage sectors were the region's second and fourth largest sectors in terms of employment: Retail Trade (\$27,400) and Health Services and Social Assistance (\$40,300).

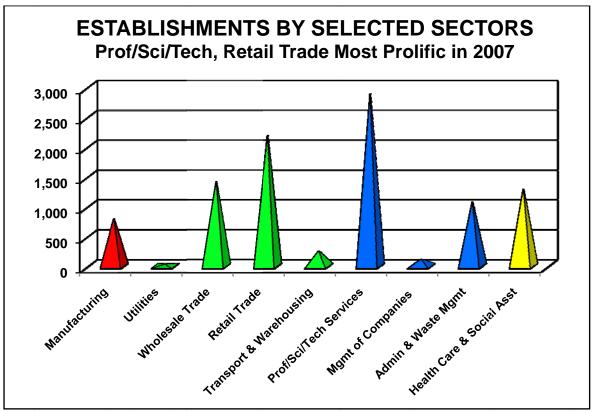


Source: MA Division of Unemployment Insurance, MERC

Sector	2007 Average Wage
31-33-Manufacturing	\$97,000
22-Utilities	\$93,200
42-Wholesale Trade	\$82,800
44-45-Retail Trade	\$27,400
48-49-Transportation & Warehousing	\$41,300
54-Professional, Scientific & Technical Services	\$100,700
55-Management of Companies	\$112,400
56-Administrative & Waste Services	\$36,500
61-Health Services & Social Assistance	\$40,300
31-33-Manufacturing	\$61,300



The distribution of establishments or separate places of work among the nine selected 495/MetroWest Corridor sectors differed strikingly from the distribution of employment and payroll among these sectors. Professional, Scientific and Technical Services led with 2,900 establishments in 2007, contributing one-sixth of all establishments in the 495/MW Corridor. Retail Trade with 2,200 establishments, Wholesale Trade (1,400), Health Services and Social Assistance and Administration and Waste Services (1,100)(1.300). Manufacturing, the leader among these sectors in terms of employment and payroll, had 800 establishments. Management of Companies and Enterprises, the sector with the highest average annual wage, included only 120 establishments. The remaining sectors each had fewer than 300 establishments.

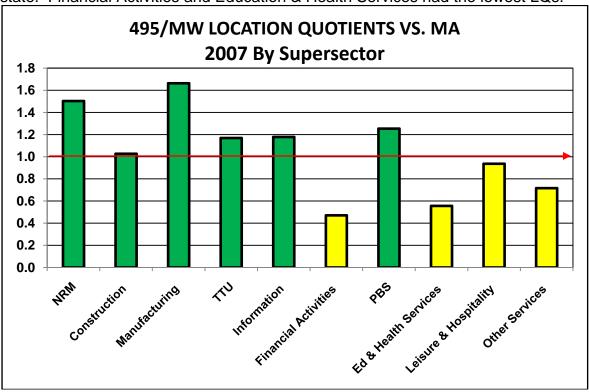


Source: MA Division of Unemployment Assistance, MERC

Sector	2007 Establishments	% 495/MW Establishments
31-33-Manufacturing	800	4.5%
22-Utilities	25	0.1%
42-Wholesale Trade	1,400	8.0%
44-45-Retail Trade	2,200	12.3%
48-49-Transportation & Warehousing	250	1.4%
54-Professional, Scientific & Technical Services	2,900	16.2%
55-Management of Companies	120	0.6%
56-Administrative & Waste Services	1,100	6.1%
61-Health Services & Social Assistance	1,300	7.3%



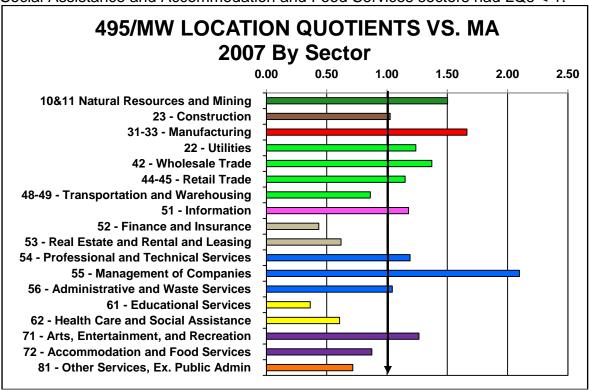
Location quotients (LQ) compare the regional industry share of total private employment to the *state* share for the same industry in the same year. A regional LQ higher than 1.0 shows an industry concentration higher than that of the state. In 2007 the 495/MetroWest Corridor supersector with the highest LQ was Manufacturing, 1.66, or a 66% higher concentration of Manufacturing jobs than existed statewide. Five other supersectors (green) achieved LQs higher than 1.0: Natural Resources & Mining (NRM), Professional and Business Services (PBS), Information, Trade, Transportation and Utilities (TTU), and Construction. The high location quotients for PBS, TTU, and Manufacturing, confirm the continued importance of the region's largest supersectors to the state. Financial Activities and Education & Health Services had the lowest LQs.



Supersector	Employment	LQ
Natural Resources (NRM)	1,100	1.50
Construction	12,800	1.03
Manufacturing	44,600	1.66
Trade, Transportation, & Utilities (TTU)	60,300	1.17
Information	9,400	1.18
Financial Activities	9,600	0.47
Professional & Business Services (PBS)	54,900	1.25
Education & Health	29,900	0.56
Leisure & Hospitality	25,700	0.94
Other Services	8,200	0.72
Public	32,700	NA
495/MetroWest Corridor	289,200	NA



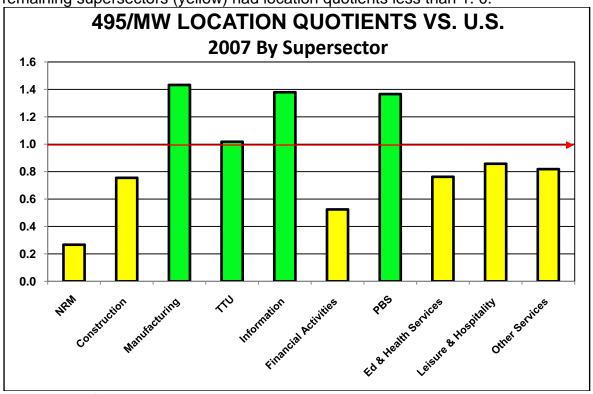
Among all 495/MetroWest Corridor sectors, Management of Companies and Enterprises generated the highest location quotient (LQ), 2.10. Other large sectors in employment achieving a LQ value >1 included: Manufacturing (1.66), Wholesale Trade (1.37), Professional, Scientific, and Technical Services (1.19), Information (1.18), and Retail Trade (1.15). In contrast, the large Health Care and Social Assistance and Accommodation and Food Services sectors had LQs < 1.



Sector	Employment	LQ
10 & 11 - Natural Resources and Mining	1,100	1.50
23 - Construction	12,800	1.03
31-33 - Manufacturing	44,600	1.66
22 - Utilities	1,100	1.24
42 - Wholesale Trade	17,200	1.37
44-45 - Retail Trade	36,400	1.15
48-49 - Transportation and Warehousing	5,600	0.86
51 - Information	9,400	1.18
52 - Finance and Insurance	7,200	0.43
53 - Real Estate and Rental and Leasing	2,500	0.62
54 - Professional, Scientific and Technical Services	26,800	1.19
55 - Management of Companies	11,700	2.10
56 - Administrative and Waste Services	16,400	1.04
61 - Educational Services	4,100	0.36
62 - Health Care and Social Assistance	25,800	0.61
71 - Arts, Entertainment, and Recreation	5,500	1.26
72 - Accommodation and Food Services	20,200	0.87
81 - Other Services	8,200	0.72



Location quotients (LQ) compare the regional industry share of total private employment to the *national* share for the same industry in the same year. A regional LQ higher than 1.0 shows an industry concentration higher than that of the United States. In 2007 the Manufacturing, Information, and Professional and Business Services (PBS) supersectors (green) in the 495/MetroWest Corridor all had location quotients between 1.37 and 1.43. These three high wage supersectors, with 37% to 43% higher concentrations of employment than existed nationally, fueled the region's economic power. Trade, Transportation and Utilities (TTU) had a location quotient approximately equal to 1. The six remaining supersectors (yellow) had location quotients less than 1.0.

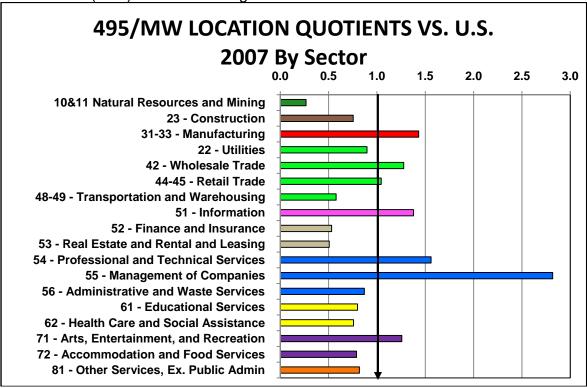


Source: BLS and MERC

Supersector	Employment	LQ
Natural Resources (NRM)	1,100	0.27
Construction	12,800	0.75
Manufacturing	44,600	1.43
Trade, Transportation, & Utilities (TTU)	60,300	1.02
Information	9,400	1.38
Financial Activities	9,600	0.52
Professional & Business Services (PBS)	54,900	1.37
Education & Health	29,900	0.76
Leisure & Hospitality	25,700	0.86
Other Services	8,200	0.82
Public	32,700	NA
495/MetroWest Corridor	289,200	NA



Among all 495/MetroWest Corridor sectors, Management of Companies and Enterprises generated the highest location quotient (LQ), 2.8, when compared to the nation. Six other sectors also achieved LQs greater than 1: Professional, Scientific, and Technical Services (1.56), Manufacturing (1.43), Information (1.38), Wholesale Trade (1.28), Arts, Entertainment, and Recreation (1.26), and Retail Trade (1.04). The remaining sectors had LQs less than 1.



Source: BLS and MERC

Sector	Employment	LQ
10 & 11 - Natural Resources and Mining	1,100	0.27
23 - Construction	12,800	0.75
31-33 - Manufacturing	44,600	1.43
22 - Utilities	1,100	0.90
42 - Wholesale Trade	17,200	1.28
44-45 - Retail Trade	36,400	1.04
48-49 - Transportation and Warehousing	5,600	0.58
51 - Information	9,400	1.38
52 - Finance and Insurance	7,200	0.53
53 - Real Estate and Rental and Leasing	2,500	0.51
54 - Professional, Scientific, and Technical Services	26,800	1.56
55 - Management of Companies	11,700	2.82
56 - Administrative and Waste Services	16,400	0.87
61 - Educational Services	4,100	0.80
62 - Health Care and Social Assistance	25,800	0.76
71 - Arts, Entertainment, and Recreation	5,500	1.26
72 - Accommodation and Food Services	20,200	0.79
81 - Other Services	8,200	0.82



# **JOB CHURNING**

To gauge the dynamic nature of the 495/MetroWest Corridor (495/MW) economy, MERC at Framingham State College estimates both *net* employment change and *gross* employment change, or gross job flows. MERC does this by calculating the year-to-year employment changes in each of the major industry categories in each of the 32 495/MetroWest towns. MERC then determines whether or not the number of jobs in one industry, manufacturing for example, in any one of the 32 towns increased. If it did, that number is recorded before it can be offset by another town in which the number of manufacturing jobs may have decreased that year. By working with these figures, MERC is able to decompose the <u>net</u> employment change into its two components: job creation and job destruction.

**Job creation** is the sum, across 495/MetroWest towns and industries, of employment gains at new and growing establishments. **Job destruction** equals the sum of employment losses at closing and shrinking establishments. **Net job change** is a measure of the *net* change in total employment from one year to the next. It is also equal to the difference between job creation and job destruction. In contrast, **job churning** is equal to the summation of job creation and job destruction. Because it measures the number of jobs that are either gained or lost in a given year, job churning is a better indicator of economic activity than the more commonly used *net* employment change.

For example, in 2004, job creation for the 495/MetroWest Corridor was estimated at 13,500 and job destruction at 8,200. The difference in these numbers, (13,500-8,200), results in a **net** increase of 1,300 jobs. The sum of job creation and job destruction (13,500+8,200) yields the extent of job churning, with 21,700 jobs either added to or cut from the job market. Please note that some totals may not sum due to rounding.

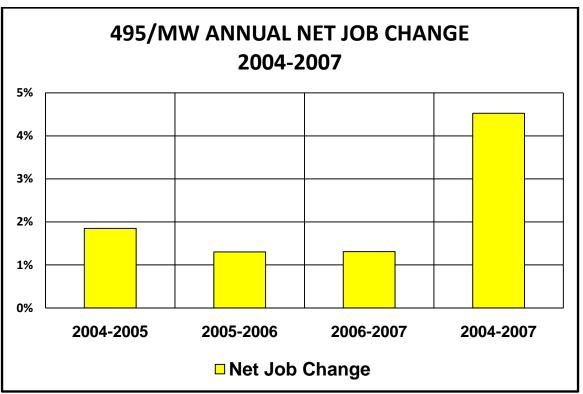
Decomposing the net job change into its components of job creation and job destruction reveals a higher level of job market activity, or **job churning**, than is revealed by the net change number alone\*.

Estimation of job creation and job destruction relies on the NAICS employment database for the 495/MetroWest Corridor created and maintained by MERC. Please see the Appendix for more detailed information about NAICS.

\*NOTE: Although reference is made to gross job creation and destruction, or gross job flows, what is actually being looked at is the tip of an iceberg and is missing several levels of activity that would result in even greater rates of churning. For example, in a given year, one manufacturing plant in Framingham may lay off a worker and another manufacturing plant in Framingham may hire a worker – same town, same industrial category – so this change would not be caught. Also, within a single establishment, one job might be created while another is destroyed. This job destruction and creation would also not be captured. Finally, our data allows us to look only at annual job flows. Quarterly or monthly data, which is unavailable at the community level, would also allow us to capture more of the job creation and job destruction which is on-going in a dynamic economy.



In 2007 the total number of jobs in the 495/MetroWest Corridor reached 289,200. This represented an increase of 4.5% or 12,500 jobs over the 2004 level of 276,700 jobs. After increasing by 1.8% or 5,100 jobs in 2005, the rate of increase leveled off in the following two years to 1.3% or 3,700 jobs each year. Over the 2004-07 period, the 495/MW Corridor averaged an annual net gain of 1.5% in employment.

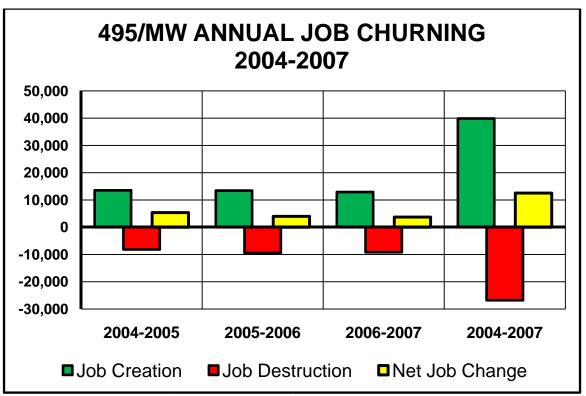


Source: MA Division of Unemployment Assistance and MERC

	2004-2005	2005-2006	2006-2007	2004-2007
Net Job Change	5,100	3,700	3,700	12,500
Percent Change	1.8%	1.3%	1.3%	4.5%



In each year of the 2004-2007 time period, job churning occurred in the 495/MetroWest Corridor. Job creation outpaced job destruction resulting in a positive net change in employment each year. The annual rate of job creation ranged between 4.5% and 4.9%, and the annual rate of job destruction ranged between -2.9% and -3.4%. The highest level of job creation, 13,500 jobs or 4.9%, occurred in 2005. The highest level of job destruction, -9,500 jobs or -3.4%, occurred in 2006. Job creation averaged 4.7% annually while job destruction averaged -3.2% annually resulting in an average annual net change of 1.5%. Over the three-years, the net job increase of 12,500 jobs was the result of nearly 40,000 newly created jobs outpacing the destruction of over -27,000 jobs. Job churning is the sum of job creation and job destruction. The job churning rate for the three years averaged 7.9% annually. One out of every 12 jobs was either newly created or lost in the 495/MW Corridor each year during 2004-07.

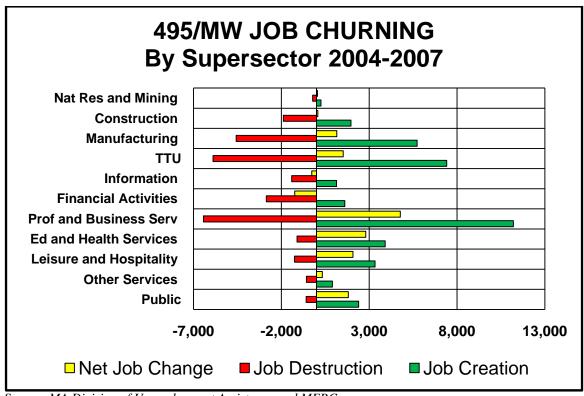


Source: MA Division of Unemployment Assistance and MERC

	Net Job Change	Annual % Change	Job Creation	Annual JC Rate	Job Destruction	Annual JD Rate	Annual Job Churning Rate
2004-05	5,100	1.8%	13,500	4.9%	-8,200	-2.9%	7.8%
2005-06	3,700	1.3%	13,400	4.8%	-9,400	-3.4%	8.1%
2006-07	3,700	1.3%	12,900	4.5%	-9,200	-3.2%	7.7%
2004-07	12,500	1.5%	39,900	4.7%	-26,800	-3.2%	7.9%



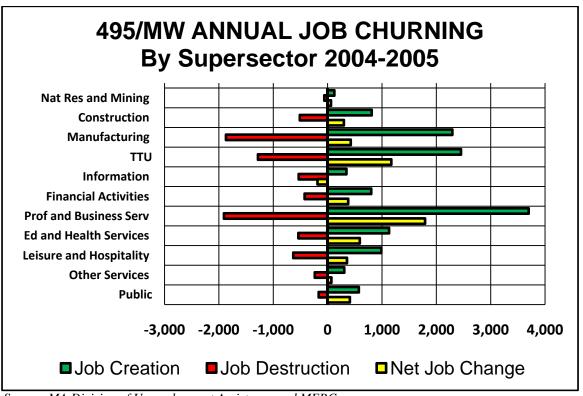
Between 2004 and 2007, nine 495/MetroWest Corridor supersectors experienced more job creation than job destruction resulting in increased employment over the three-year period. The greatest amount of job creation and destruction occurred in the region's three largest supersectors, Professional & Business Services (PBS), Trade, Transportation & Utilities (TTU), and Manufacturing. While over 11,000 new jobs were created in PBS, -6,400 jobs were lost, resulting in a net increase of more than 4,800 jobs. This was the largest net change in employment among the region's supersectors, followed by Education and Health Services, and Leisure and Hospitality. Two supersectors, Information and Financial Activities, lost jobs on net during 2004-07.



Supersectors	Job Creation	Job Destruction	Net Job Change
Natural Resources & Mining	250	-220	30
Construction	2,000	-1,900	100
Manufacturing	5,700	-4,600	1,200
Trade, Transportation & Utilities (TTU)	7,400	-5,900	1,500
Information	1,100	-1,400	-300
Financial Activities	1,600	-2,900	-1,200
Professional and Business Services	11,200	-6,400	4,800
Education & Health Services	3,900	-1,100	2,800
Leisure and Hospitality	3,300	-1,300	2,100
Other Services	900	-600	300
Public	2,400	-600	1,800



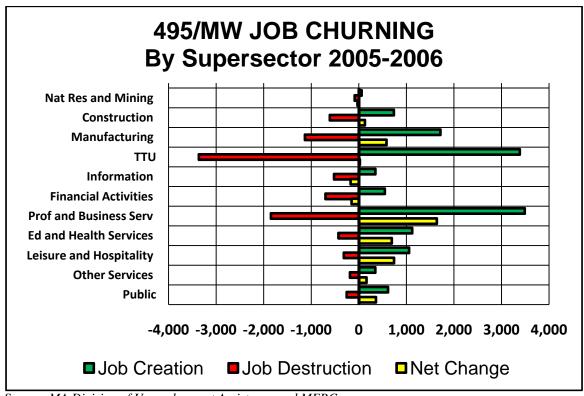
In 2005, ten of the eleven 495/MetroWest Corridor supersectors reported net employment gains. The greatest amount of job creation and job destruction occurred in the region's three largest sectors, Professional and Business Services (PBS), Trade Transportation and Utilities (TTU), and Manufacturing. In PBS 3,700 newly created jobs were offset by only -1,900 lost jobs resulting in the largest net gain of 1,800 jobs. In TTU, 2,500 new jobs were offset by -1,300 destroyed jobs resulting in a net gain of 1,200 jobs. Manufacturing reported a net gain of 400 jobs. In 2005, Information was the only 495/MW supersector with greater job losses, -500, than job gains, 300, resulting in a drop in employment of 200 jobs on net.



Supersectors	Job Creation	Job Destruction	Net Job Change
Natural Resources & Mining	120	-60	60
Construction	800	-500	300
Manufacturing	2,300	-1,900	400
Trade, Transportation & Utilities (TTU)	2,500	-1,300	1,200
Information	300	-500	-200
Financial Activities	800	-400	400
Professional and Business Services	3,700	-1,900	1,800
Education & Health Services	1,100	-500	600
Leisure and Hospitality	1,000	-600	400
Other Services	300	-200	100
Public	600	-200	400



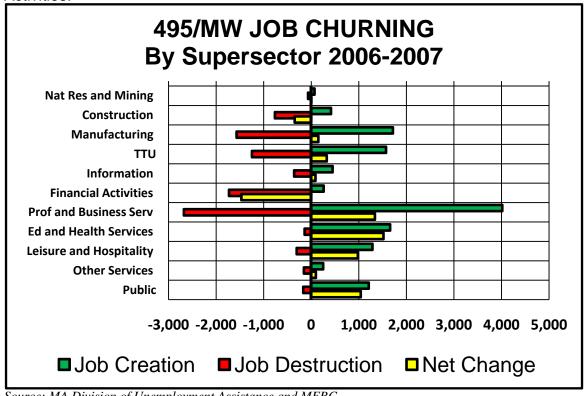
In 2006, seven 495/MetroWest Corridor supersectors reported net job gains. The most job creation and job destruction occurred in Professional and Business Services (PBS), Trade Transportation and Utilities (TTU), and Manufacturing. In PBS, job creation, 3,500 jobs, outpaced job destruction, -1,800 jobs, resulting in the largest net increase in employment for the region of 1,600 jobs. In TTU, job creation of about 3,400 jobs was offset by a similar amount of job destruction, resulting in no net change in employment. Manufacturing reported a net employment increase of 600 jobs. Three 495/MW Corridor supersectors reported negative net job changes: Natural Resources and Mining, Information, and Financial Activities.



Supersectors	Job Creation	Job Destruction	Net Job Change
Natural Resources & Mining	60	-90	-30
Construction	700	-600	100
Manufacturing	1,700	-1,100	600
Trade, Transportation & Utilities (TTU)	3,400	-3,400	0
Information	300	-500	-200
Financial Activities	500	-700	-200
Professional and Business Services	3,500	-1,800	1,600
Education & Health Services	1,100	-500	700
Leisure and Hospitality	1,100	-300	700
Other Services	300	-200	200
Public	600	-300	400



In 2007 eight 495/MetroWest Corridor supersectors reported net job gains. Again, the three largest supersectors, Professional & Business Services (PBS), Manufacturing, and Trade Transportation & Utilities experienced the most job churning. Although many jobs disappeared, even more new jobs were created resulting in positive net gains in employment. With the highest level of job creation in PBS, 4,000 new jobs appeared and were offset by about -2700 lost jobs, for a net employment gain of 1,300 jobs. The largest net employment gain occurred in Education and Health Services, which experienced very little job In 2007 net job losses occurred in Construction and Financial destruction. Activities.



Supersectors	Job Creation	Job Destruction	Net Job Change
Natural Resources & Mining	70	-70	0
Construction	400	-800	-400
Manufacturing	1,700	-1,600	100
Trade, Transportation & Utilities (TTU)	1,600	-1,300	300
Information	500	-400	100
Financial Activities	200	-1,700	-1,500
Professional and Business Services	4,000	-2,700	1,300
Education & Health Services	1,600	-100	1,500
Leisure and Hospitality	1,300	-300	1,000
Other Services	300	-200	100
Public	1,200	-200	1,000



#### **APPENDIX**

# North American Industry Classification System (NAICS)

In 2001 the North American Industry Classification System (NAICS) permanently replaced the Standard Industrial Classification (SIC) system in use for seventy years. NAICS is an industrial classification system that groups establishments into industries based on the activities in which they are primarily engaged. It is a comprehensive system covering the entire field of economic activities, both producing and non-producing. NAICS has twenty separate industrial sectors that are described in this appendix. These twenty sectors are grouped into eleven supersectors. Most NAICS data used in this publication is presented by supersectors.

#### **NAICS Supersectors\***

#### Goods-Producing Domain (GPD)

#### **Natural Resources and Mining Supersector**

11 Agriculture, Forest, Fishing and Hunting

21 Mining

#### **Construction Supersector**

23 Construction

#### **Manufacturing Supersector**

31-33 Manufacturing

# Service Producing Domain (SPD)

# Trade, Transportation and Utilities Supersector

22 Utilities

42 Wholesale Trade

44-45 Retail Trade

48-49 Transportation and Warehousing

# **Information Supersector**

51 Information

# **Financial Activities Supersector**

52 Finance and Insurance

53 Real Estate and Rental and Leasing

#### **Professional and Business Services Supersector**

54 Professional, Scientific and Technical Services

55 Management of Companies and Enterprises

56 Administrative and Support and Waste Management and Remediation Services

#### **Education and Health Services Supersector**

61 Educational Services

62 Health Care and Social Assistance

# **Leisure and Hospitality Supersector**

71 Arts, Entertainment, and Recreation

72 Accommodation and Food Services

#### Other Services Supersector

81 Other Services (except Public Administration)

**Public Supersector\*** as used in this publication, includes the Public Administration NAICS sector defined below, plus all other jobs in federal, state and local government.

#### **NAICS Sectors**

#### **Natural Resources and Mining Supersector:**

**11-Agriculture, Forestry, Fishing and Hunting** comprises establishments primarily engaged in crop growing, animal raising, and timber and fish harvesting.



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**21-Mining** comprises establishments that extract naturally occurring mineral solids, liquid minerals, and gases.

#### **Construction Supersector:**

**23-Construction** comprises establishments primarily engaged in the construction of buildings or engineering projects.

#### **Manufacturing Supersector:**

**31-33 Manufacturing** comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.

#### **Trade, Transportation and Utilities Supersector:**

- **22-Utilities** comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply and sewage removal, through a permanent infrastructure of lines, mains, and pipes.
- **42-Wholesale Trade** comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise, including the outputs of agriculture, mining, manufacturing, and certain information industries, such as publishing. The wholesaling process is an intermediate step in the distribution of merchandise.
- **44-45-Retail Trade** comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The retailing process is the final step in the distribution of merchandise; retailers are, therefore, organized to sell merchandise in small quantities to the general public. This sector comprises two main types of retailers: store and nonstore retailers.
- **48-49-Transportation and Warehousing** comprises industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation (air, rail, water, road, and pipeline).

#### **Information Supersector:**

**51-Information** comprises establishments engaged in producing and distributing information and cultural products, providing the means to transmit these products, and processing data.

#### **Financial Activities Supersector:**

- **52-Finance and Insurance** comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.
- **53- Real Estate and Rental and Leasing** comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets.

#### **Professional and Business Services Supersector:**

**54-Professional, Scientific, and Technical Services** comprises the performing of professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. Some activities performed include: legal advice and



#### **APPENDIX**

representation, accounting, engineering services, computer services, research services, advertising services, and veterinary services.

**55-Management of Companies and Enterprises** comprises establishments that either hold the securities of companies for the purpose of owning a controlling interest or influencing management decisions, or establishments that administer, oversee, and manage establishments of the company and that normally undertake the organizational planning and decision making role of the company.

**56-Administrative and Support and Waste Management and Remediation Services** include establishments performing routine support activities for the day-to-day operations of other organizations. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services cleaning, and waste disposal services.

#### **Education and Health Services Supersector:**

**61-Educational Services** comprises establishments that provide instruction and training to a wide variety of subjects. This instruction and training provided by specialized establishments, such as schools, colleges, universities, and training centers.

**62-Health Care and Social Assistance** comprises establishments that provide health care and social assistance for individuals.

#### **Leisure and Hospitality Supersector:**

**71-Arts, Entertainment, and Recreation** comprises a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons.

**72-Accommodation and Food Services** comprises establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

#### Other Services Supersector:

**81-Other Services** (except Public Administration) comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment repairing, administering religious activities, grantmaking, advocacy, and providing laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

**Public Supersector\*** as used in this publication, includes the Public Administration NAICS sector defined below, plus all other jobs in federal, state and local government.

**Public Administration** The Public Administration sector consists of establishments of federal, state, and local government agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions within a given area.



#### SOURCES

- Bureau of Labor Statistics, U. S. Department of Labor (BLS)
- Massachusetts Executive Office of Labor and Workforce Development, Division of Unemployment Assistance
- Massachusetts Executive Office of Labor and Workforce Development, Division of Career Services
- MetroWest Economic Research Center (MERC)
- United States Census Bureau, U. S. Department of Commerce (US Census)
- Federal Reserve Bank of Boston

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- Massachusetts Executive Office of Labor and Workforce Development, Division of Career Services, Economic Analysis Group
- Commonwealth of Massachusetts



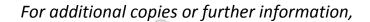


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