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### The Year in Review: 2007 Marks Start of Slowdown

Alan Clayton-Matthews

*University of Massachusetts Boston*

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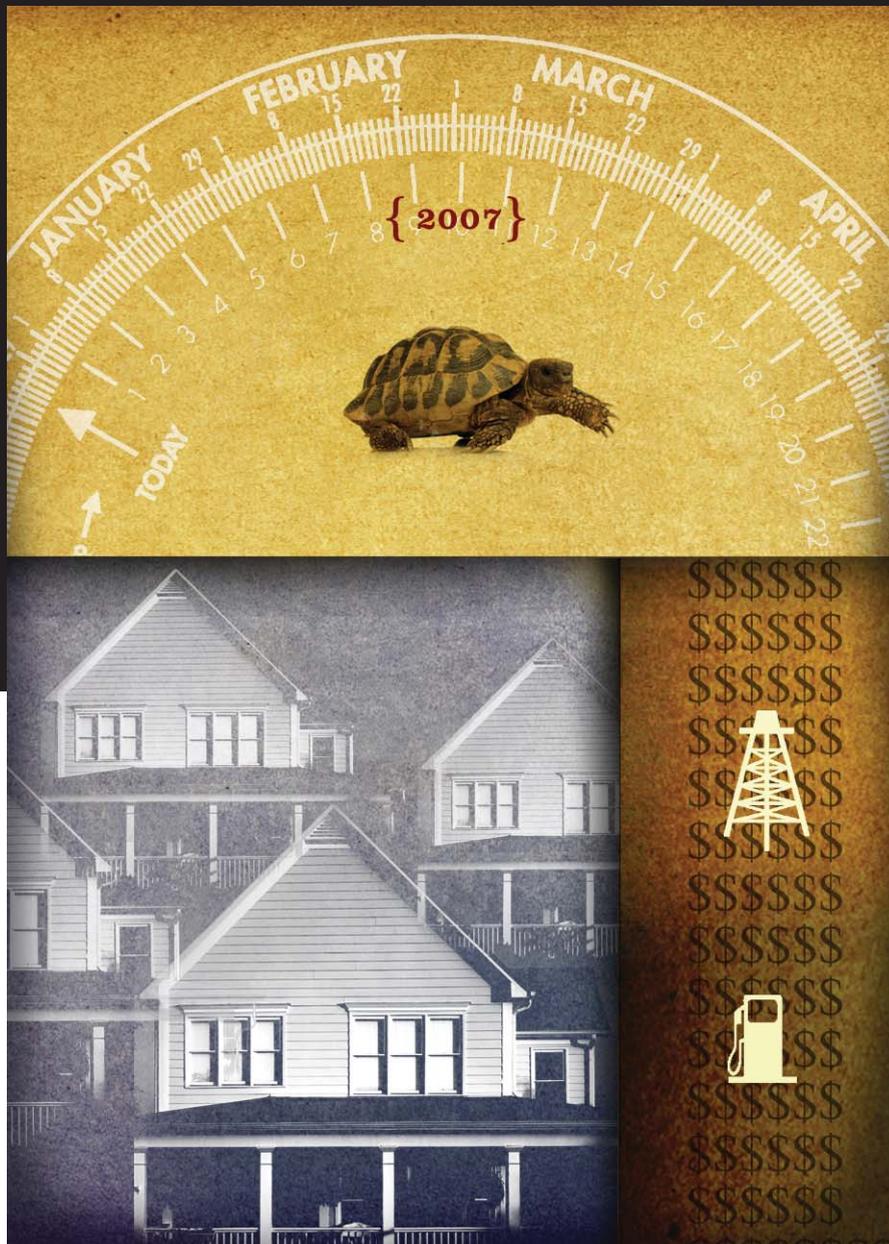
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THE STATE OF THE STATE ECONOMY  
**ECONOMIC CURRENTS**



# The Year in Review: 2007 Marks Start of Slowdown

ALAN CLAYTON-MATTHEWS

The state's economy slowed moderately in 2007, the beginning of a slowdown that may last several years. The deceleration was precipitated by a downturn in the housing market that, in Massachusetts, began in late 2005, and gained downward momentum in 2006. Last summer, financial havoc from sub-prime mortgage defaults and falling prices throughout most of the nation tipped the nation's economy to the brink of recession. This year, soaring energy prices threaten to weigh down the economy further, neutralizing the fiscal stimulus package that is coming on line now.

In 2007 Massachusetts performed better than the faltering national economy on most measures. Payroll employment grew at the same rate in Massachusetts as in the nation as a whole, a rare event, given the persistent lower rate of population and labor force growth in the state. Massachusetts grew faster than the U.S. in terms of product, income, and wages. While the national unemployment rate rose during 2007, the state's unemployment rate fell. The difference in performance can be attributed to what economists call "industry mix." Hous-

ing production and automobile manufacturing — sectors that performed badly, are a smaller part of the state's economy than the nation's, while technology, science, and knowledge-based sectors — which performed well, are a larger part of the state's economy than the nation's.

Last year, Massachusetts economic growth slowed. Payroll employment growth fell from 1.2 percent in 2006 to 0.8 percent in 2007, while resident employment growth declined from 0.9 percent to a paltry 0.2 percent, and labor force growth declined from 0.8 percent to a negative 0.3 percent.<sup>1</sup> Real gross state domestic product growth, as estimated from the Massachusetts Current Economic Index, slowed from 3.6 percent in 2006 to 3.2 percent last year. This small change masks the deceleration which took place and that is still under way. Real gross state domestic product growth declined from an annualized rate of 3.9 percent in the fourth quarter of 2006 to 2.8 percent in the fourth quarter of last year.

The difference between the performance of the housing-related and technology-related sectors is apparent in the payroll employment survey data. Construction

**Figure 1. Massachusetts Employment, Labor Force, and Population Indicators**  
Percent change from prior year

	2004	2005	2006	2007	Reference Period
<b>Employment and Labor Force</b>					
Payroll Employment	0.7	0.7	1.2	0.8	December
Payroll Employment, U.S.	1.6	1.9	1.6	0.8	December
Construction	2.4	1.6	-2.0	-1.3	December
Manufacturing	-1.6	-2.5	-1.3	-1.5	December
Retail Trade	1.1	-1.5	-0.5	-0.6	December
Information	-1.8	-0.7	1.0	3.0	December
Financial Activities	-1.3	2.7	0.6	-0.4	December
Professional and Business Services	3.2	1.9	2.3	1.8	December
Health Care and Social Assistance	2.0	1.9	3.0	3.0	December
Other Services	0.3	1.3	0.3	0.1	December
Resident Employment	0.1	0.6	0.9	0.2	December
Labor Force	-0.7	0.5	0.8	-0.3	December
Unemployment Rate*	5.2	4.9	4.8	4.5	December
Unemployment Rate, U.S.*	5.5	5.1	4.6	4.6	December
Long-Term-Unemployment as a Percent of the Population 15 and Older*	0.83	0.67	0.55	0.60	Annual Average
Long-Term-Unemployment as a Percent of the Population 15 and Older, U.S.*	0.78	0.66	0.54	0.54	Annual Average
<b>Population and Migration</b>					
Population	-0.08	-0.07	0.08	0.24	July
Population, U.S.	0.94	0.92	0.97	0.96	July
Net Migration*	-32,288	-32,981	-21,179	-8,107	July

Notes: \* Level (not percent change).

**Figure 2. Massachusetts Income, Inflation, and Consumer Indicators**  
Percent change from prior year

	2004	2005	2006	2007	Reference Period
<b>Incomes and Wage Rates</b>					
Per Capita Personal Income	5.1	5.2	6.2	6.0	Annual Average
Per Capita Personal Income, U.S.	5.1	4.9	5.6	5.2	Annual Average
Real Annual Wages per Worker	2.8	-0.8	1.3	2.3	Annual Average
Real Annual Wages per Worker, U.S.	1.7	-0.1	1.0	1.6	Annual Average
<b>Inflation</b>					
CPIU-Boston	2.5	3.3	2.1	3.4	November
CPIU-U.S.	3.6	3.5	1.9	4.4	November
Heating Oil Expenditures	10.2	27.9	11.8	11.0	Annual Average
Gasoline	16.8	21.2	13.8	5.8	Annual Average
<b>Consumer Spending</b>					
Regular Sales Taxes	3.5	5.8	2.6	2.6	Annual Average
Motor Vehicle Sales	-5.7	-2.1	-7.4	-4.5	Annual Average
Motor Vehicle Sales, U.S.	2.6	2.6	1.9	2.1	Annual Average
<b>Confidence</b>					
Consumer Confidence (MassInsight)	5.5	-15.6	13.6	-32.6	January**
Consumer Confidence, U.S. (The Conference Board)	7.6	1.6	3.2	-20.8	January**
AIM Business Confidence*	62.0	56.6	59.2	53.5	December
NAPM Manufacturing Index*	57.3	55.6	51.4	48.4	December

Notes: \* Level (not percent change). \*\* January of the following year (better than using October to October).

**Figure 3. Massachusetts Product and Housing Indicators**  
Percent change from prior year

	2004	2005	2006	2007	Reference Period
<b>Product</b>					
Current Economic Index	3.0	3.1	3.6	3.2	4th Quarter
Gross Domestic Product, U.S.	3.1	2.9	2.6	2.5	4th Quarter
Merchandise Exports	17.0	0.9	9.1	5.1	Annual Average
Merchandise Exports, U.S.	13.0	10.6	14.6	12.1	Annual Average
Investment in Information Processing Equipment and Software, U.S.	5.6	6.5	5.1	6.4	Annual Average
Value of Shipments, Computers and Electronic Products, U.S.	3.6	2.5	5.5	1.2	Annual Average
Semiconductor Equipment Shippings: North America	64.1	-12.7	25.9	3.2	Annual Average
Semiconductor Billings, Worldwide	29.9	7.0	9.2	3.8	Annual Average
Semiconductor Billings, Americas	22.9	2.7	12.5	-5.5	Annual Average
Bloomberg Stock Index for Massachusetts	18.9	0.6	15.5	-1.2	31-Dec
<b>Housing</b>					
Housing Permits	12.3	11.3	-10.6	-28.8	Annual Average
House Price Index (OFHEO, Purchase Only)	8.7	4.5	-4.1	-1.8	4th Quarter
House Price Index, U.S. (OFHEO, Purchase Only)	9.3	9.5	3.9	-0.4	4th Quarter
Median Price, Single Family (MAR)	10.8	5.9	-2.5	-1.5	Annual Average
Median Price, Condos (MAR)	NA	7.7	-0.2	2.5	Annual Average
Sales, Single Family (MAR)	2.8	-3.4	-10.3	-4.0	Annual Average
Sales, Condo (MAR)	22.3	17.4	-8.7	-4.7	Annual Average
Listings (MAR)	3.4	20.0	28.3	-16.4	Annual Average

employment fell for the second straight year, by 2.0 percent in 2006 and by 1.3 percent in 2007. Retail trade employment fell for the third straight year, by 1.5 percent in 2005, 0.5 percent in 2006 and 0.6 percent in 2007. This reflects a slowdown in consumer spending related to the housing market, from purchases related to new household formation, to consumer spending in general, a reflection of declining household wealth, higher household debt, and restricted consumer credit. Regular sales taxes, which reflect most consumer spending outside of food, clothing, services, and automobiles, grew a paltry 2.6 percent, less than the rate of inflation. Purchases of automobiles declined for another year, at a rate of 4.7 percent. The losses in Financial Activities employment of 0.4 percent in 2007 were concentrated in Real Estate, which fell by 2.2 percent, and by Credit Intermediation — i.e., banks — by 3.3 percent.

On the other hand, Professional and Business Service employment grew robustly for another year, by 1.8 percent in 2007. Within this sector, Professional, Scientific, and Technical Service employment grew by 3.0 percent. Information employment expanded by 3.0 percent, led by growth in Software of 4.0 percent. Within Finance, the subsector Securities, Commodities, and Investment Act employment, which contains highly paid financial funds managers, grew by 3.4 percent.

Manufacturing employment declined by 1.5 percent last year, but this reflects long-term productivity trends rather than declining output. State merchandise exports, composed almost exclusively of manufactured products, grew by 5.0 percent. Nationally, manufacturing employment declined by 1.9 percent. Measures of national and worldwide demand for information technology products were generally indicating slower growth than last year, but were positive, suggesting that production remained at

high levels. U.S. business spending for information processing equipment and software remained strong, growing by 6.4 percent (in nominal dollars).

Incomes expanded at a healthy rate in 2007, with per capita incomes rising by 6.0 percent in Massachusetts, and real annual wages per payroll worker rising by 2.3 percent.<sup>2</sup> The corresponding figures for the U.S. were 5.2 percent and 1.6 percent, respectively. Per-worker wages and salaries remain much higher in Massachusetts than in the nation as a whole — 22 percent higher, reflecting the state's higher level of educational attainment.

Population expanded modestly for the second year in a row, by one quarter of a percentage point — versus a full percentage point for the U.S., while the net out-migration fell from 21,000 in 2006 to 8,000 in 2007. In the expansion of the 1990s, net migration moved from negative to positive as the state's economy recovered from its recession. In this slower expansion, migration has yet to turn around. As we shall see, this is consistent with a labor market that is still somewhat weaker in Massachusetts than in the rest of the nation, despite what the headline unemployment rate suggests.

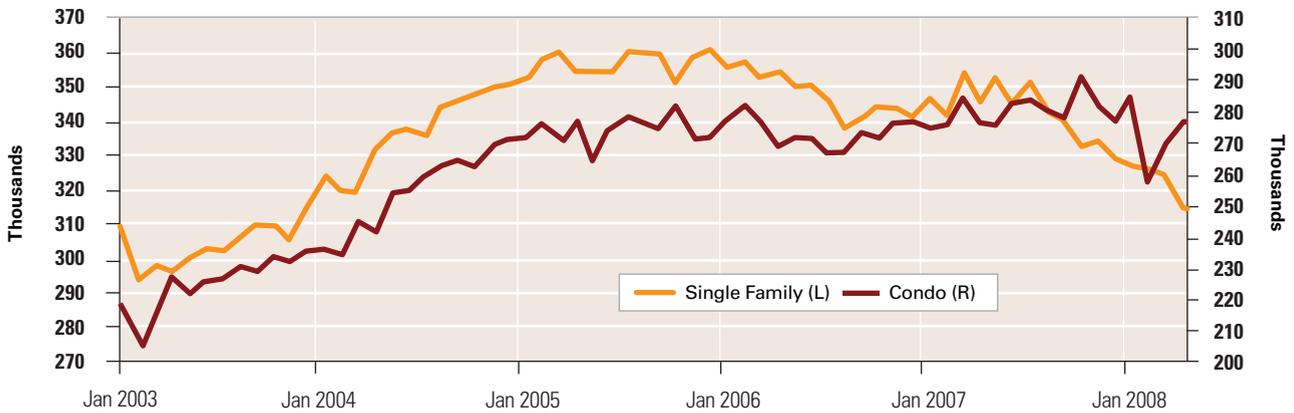
Several expectation and confidence measures turned down in 2007. The Bloomberg stock index for Massachusetts, which measures the stock price performance of Massachusetts companies, declined by 1.2 percent in 2007, underperforming both the Dow Jones and NASDAQ indices, which grew by 6.0 and 8.9 percent respectively. Business confidence fell throughout the year. The AIM index fell to 53.5, just above the borderline between expectations of expansion versus contraction, while the national NAPM index sank to just below the critical level of 50, to 48.4. Consumer confidence plunged by 33 percent in Massachusetts to a level that has not been seen since the recession of the early 1990s. All three measures — stock

**Figure 4. Massachusetts and U.S. Payroll Employment Growth**



Source: U.S. Bureau of Labor Statistics

**Figure 5. Median House Price, Massachusetts**



Source: Massachusetts Association of Realtors, seasonally adjusted by author

prices, business confidence, and consumer confidence — continued to fall in the beginning of 2008.

The housing market continued its slide last year, and has not reached the bottom yet. Prices and permits declined for the second year in a row, and sales, for the third year in a row. Condominiums have held up better than single family homes. The average annual median price rose 2.5 percent in the face of a second year of declining sales. However, median prices for condos fell significantly in the first quarter of this year. Listings fell last year, but are still high.

**Unemployment Rates, Education, and Geography**

The unemployment rate is perhaps the best single indicator of conditions in the labor market. Low unemployment rates signal a “seller’s market” in which workers perceive jobs to be plentiful, and in which employers find it hard to fill positions without giving incentives to new hires. High unemployment rates signal a “buyer’s market,” the other side of the coin. Regional differences in unemployment rates indicate different demand pressures in regional labor markets, and just as wind flows from high to low pressure areas, net migration flows from regions with higher unem-

ployment rates to those with lower rates. Workers move to where job openings are more plentiful and seller’s markets for labor prevail.

In 2007, the Massachusetts unemployment rate averaged 4.5 percent, slightly below the U.S. rate of 4.6 percent and in line with trends of recent decades but no indication that labor market conditions for workers are slightly better in Massachusetts than in the rest of the nation. The reason for the state’s traditionally lower rate is that the state’s workers are more highly educated than the rest of the nation, and unemployment rates for more highly educated workers tend to be lower. However, those with a B.A. degree and those with a high school diploma do not compete for the same jobs. In order to tell whether or not the state of the state’s labor market is better or worse than the rest of the country, one should compare unemployment rates for each level of educational attainment. It turns out that, in 2007, at nearly every level of educational attainment the unemployment rate in Massachusetts was higher than in the rest of the nation. For example, for those with a high school degree, the unemployment rate in Massachusetts was 6.1 percent versus 5.7 percent for the rest of the country. The unemployment

**Figure 6. Unemployment Rates, 2007 Annual Average**

Educational Attainment	Massachusetts	Rest of U.S.	Difference
Less Than High School	8.9	10.2	-1.2
High School Diploma	6.1	5.7	0.4
Some College	5.2	3.8	1.4
BA/BS	2.6	2.4	0.2
Advanced Degree	2.3	1.9	0.4
Total	4.6	4.6	-0.1
Recent Immigrants < High School	5.0	6.1	-1.0

Source: Current Population Surveys

rate for Massachusetts residents with a master's or higher degree was only 2.3 percent, but that was 0.4 percentage points higher than similarly educated labor force members in the rest of the country. Only for those with less than a high school education was the unemployment rate lower in Massachusetts than in the rest of the country.

By statistically controlling for education and other demographic differences between the labor force of Massachusetts and the rest of the country, one can estimate what the unemployment rate for Massachusetts would have been if it had the same demographics as the U.S. This "demographically-adjusted" unemployment rate for Massachusetts in 2007 was 5.3 percent, or 0.7 percent higher than that of the U.S., indicating that the state's labor market is weaker than that of the U.S.<sup>3</sup> This is consistent with the observed moderate net out-migration of Massachusetts residents last year.

Another indication that the labor market is marginally weaker in Massachusetts is the rate of long-term unemployment, defined to be duration of unemployment of more than half a year (27 weeks or more). Expressed as a percentage of the population, that rate rose from 0.55 percent of the population 15 and older in 2006 to 0.60 percent in 2007. The U.S. rate held steady at 0.54 percent.

Massachusetts unemployment rates show marked geographical variation. On this measure, the parts of the state that are doing well are concentrated in the western suburbs of Boston, around the University of Massachusetts Amherst and the four neighboring private colleges, and some areas where the wealthy maintain second resi-

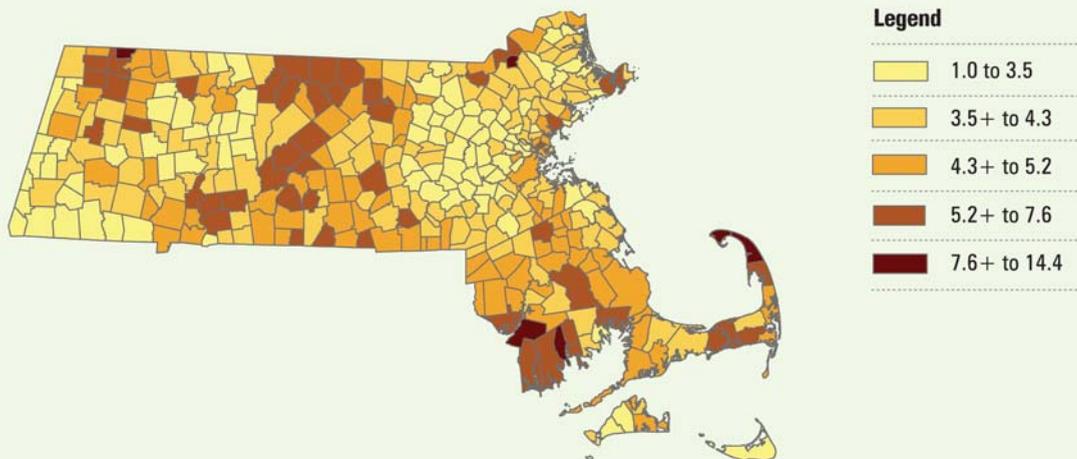
dences. Areas with the highest unemployment rates last year (listed here in decreasing order of severity) are such urban centers outside Boston as Lawrence, New Bedford, Springfield, Holyoke, Fitchburg, and Brockton and nearby towns. Some of the municipalities with the highest annual average unemployment rates are Provincetown and other parts of Cape Cod, where off-season unemployment is high. The geographic pattern of unemployment rates is highly correlated with where workers in the thriving and declining sectors of the economy live, with the geographic distribution of educational attainment, and with the geographic concentrations of recent foreclosures.

### Prospects for 2008 and Beyond

The deceleration that began last year will continue this year. In the first quarter, according to the Massachusetts Current Economic Index, gross state domestic product grew at a 2.9 percent annual rate, slower than the pace of growth in 2007. The Leading Index for Massachusetts is projecting that state product growth will slow to a 2.2 percent annual rate between April and November. Productivity growth has averaged 2.4 percent in recent years. This means that employment growth, which is product growth minus productivity growth, is likely to decline moderately over the rest of the year.

The residential real estate market has not hit bottom yet. There is still an excess inventory of homes to be sold that will continue to drive prices down. If more and more sellers finally accept lower prices, the market may finally reach bottom by the end of the year, leading to the end of

**Figure 7. Average Unemployment Rate, May 2007 - April 2008**



Source: Massachusetts Division of Unemployment Assistance

the decline in sales. Thereafter, price appreciation should be very moderate — much slower than the pace experienced in the run-up of prices in the first half of this decade.

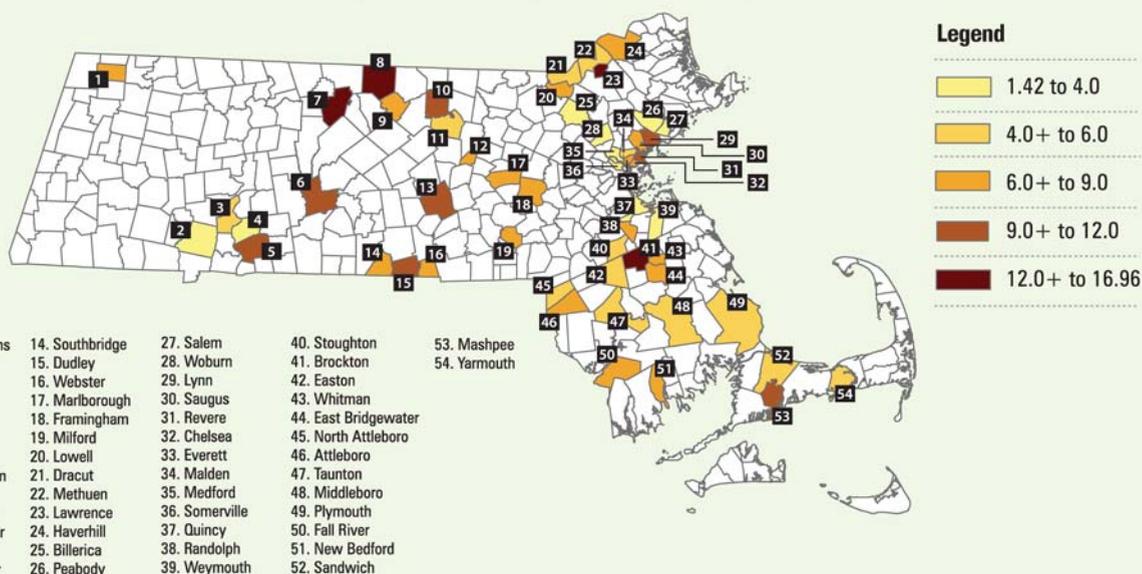
In the first three months of 2008, the Warren Group reported that foreclosure deeds were up nearly 140 percent from the same three-month period in 2007. On a per capita basis, Brockton ranked worst among the state’s municipalities, with 17 foreclosure deeds per 10,000 population.<sup>4</sup> Other large municipalities have had high foreclosure deed rates, ranging from 8 to 15 foreclosures per 10,000 population. Some examples, in descending order of severity, are Lawrence, Lynn, Fitchburg, Revere, Springfield, Worcester, Everett, New Bedford, Chelsea, and Lowell. Several smaller towns situated in central Massachusetts also had high foreclosure rates. For the most part, these foreclosures are concentrated in the same communities whose residents work in the sectors that are doing poorly in this economic slowdown. The economic disparity between the technology, science, and knowledge-based sectors on the one hand and the home construction, personal service, and retail sectors on the other hand is reflected in geographic disparities that are being heightened by the foreclosure crisis.

Foreclosures also affect municipal finances, as cities and towns generally cannot collect real estate taxes from foreclosed properties. The current geographic concentration of foreclosures in communities already financially distressed before the housing downturn could signal fiscal emergencies in scores of cities and towns across the state.

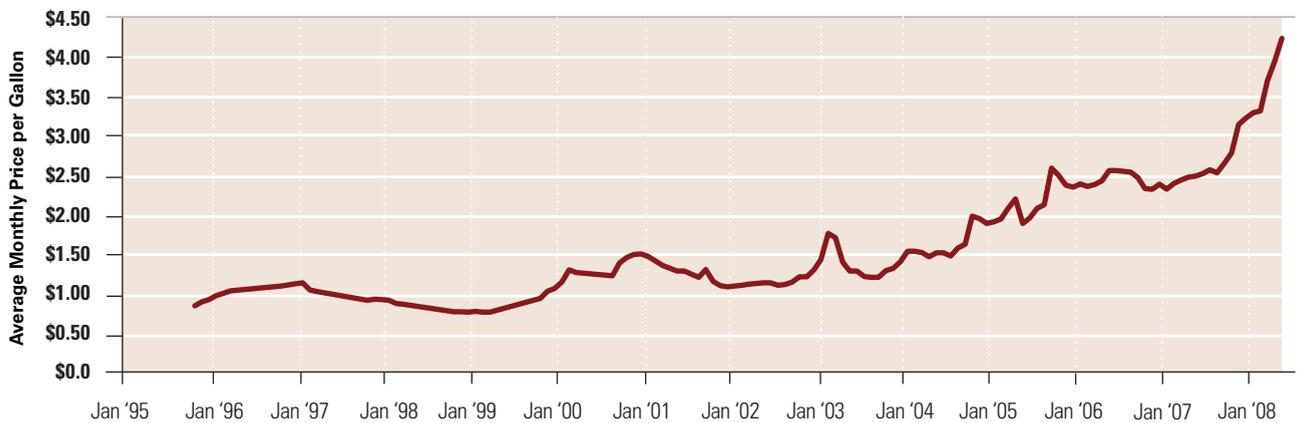
Weak consumer demand is now the main force slowing the economy. Aside from the impact of declines in house and stock market prices on reducing consumer spending through the wealth effect, restricted credit and high debt is forcing households to cut back spending. In addition, high oil prices are further reducing non-energy spending and economic growth, because most of the money spent on oil goes to foreign suppliers. High oil prices are particularly damaging to New England because so many households — 36 percent in Massachusetts — heat their homes with oil. Home heating oil prices have been on the rise for years, but they have skyrocketed recently. Annual average home heating oil expenditures rose 11 percent in 2007 from the prior year. If the current price remains for the rest of this year at \$4.25 per gallon (the price in May when this article was written), heating oil expenditures by Massachusetts residents will rise another 42 percent this year. In addition, were gasoline prices to hover at \$4 per gallon through the rest of the year, gasoline expenditures in Massachusetts would rise by 35 percent this year. Even if electricity and natural gas prices do not rise this year — which is highly unlikely, total household energy costs would rise by 22 percent, or an average of \$1,000 per household, or \$2.4 billion for the state as a whole, which is 0.76 percent of state personal income. This is roughly the same magnitude as the state’s share of the federal government’s fiscal stimulus package, and would effectively cancel most of its positive impact on the economy.<sup>5</sup>

This year may be the nadir for growth, with Massachusetts skirting a technical recession. Beyond this year,

**Figure 8. Number of Foreclosures per 10,000 Population, January - March 2008**



Source: The Warren Group (for places with at least 10 foreclosures)

**Figure 9. Home Heating Oil Prices**

Source: Massachusetts Division of Energy Resources

however, growth should continue to be slow for some time. Years of current trade deficits have left the dollar weak, which will result in higher import prices, inflationary pressures, and higher interest rates. The result will be several years of slower consumer spending.

Finally, the leading edge of the baby boom generation will reach the traditional retirement age of 65 in 2011. Massachusetts is home to a larger than average share of this productive, wealthy, and aging generation. As boomers retire, the state's labor force and employment may shrink even in the midst of an "expansion." This demographic change will bring forth both challenges and opportunities for the economic development of the Commonwealth in the coming decade. 

*ALAN CLAYTON-MATTHEWS, an associate professor and the director of quantitative methods in the Public Policy Program at the University of Massachusetts Boston, is co-editor of this journal.*

## NOTES

1. Most of the growth statistics cited in the text for 2006 and 2007 can be found in Figures 1, 2, and 3. Growth for each was generally defined as the percentage change in the indicator from year end to year end, either December to December or fourth quarter to fourth quarter, except when measurements were not available at these times — for example, population — or when the size of monthly or quarterly fluctuations were such that annual averages gave a more accurate portrayal of growth.

2. Real annual wages per worker are calculated for Massachusetts and the U.S. as annual average wage and salary disbursements divided by average annual nonfarm payroll employment, and deflated by the U.S. consumer price index for urban consumers.

3. A linear probability regression was estimated on sample individuals who were in the labor force, using the 99 monthly Current Population Surveys from January 2000 through March 2008. The dependent variable was a dummy variable indicating whether or

not the person was unemployed. The independent factors included age (entered as a cubic polynomial), minority status (nonwhite or Hispanic), sex, educational attainment (less than high school, high school diploma, some college, bachelor's degree, advanced degree), recent immigrant status (came to the U.S. in the last 10 years and had less than a high school education), 99 monthly dummies indicating the year and month of the survey (January 2000 was omitted as the reference period), and an interaction of a Massachusetts dummy variable (indicating residence in Massachusetts) with each of the 99 monthly dummies. These latter 99 dummy variable interaction coefficients form the estimates of the demographically controlled-for differences between the Massachusetts and U.S. (actually, the rest of the U.S.) unemployment rates. The annual average difference estimate for each year was formed by averaging the 12 dummy coefficients for the corresponding year.

4. For normalizing the number of foreclosure deeds by the population, 2000 population from the Decennial Census was used. The rates are for the January-March period. To convert the rates into annual rates, multiply by 4.

5. These estimates are based on the Consumer Expenditure Survey, the Consumer Price Index for Massachusetts, the American Community Survey, and heating oil and gasoline retail price surveys reported by the Massachusetts Division of Energy Resources. The complete methodology is available from the author on request.