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### Fueled by Technology Market Demand, Massachusetts Economic Growth Increases

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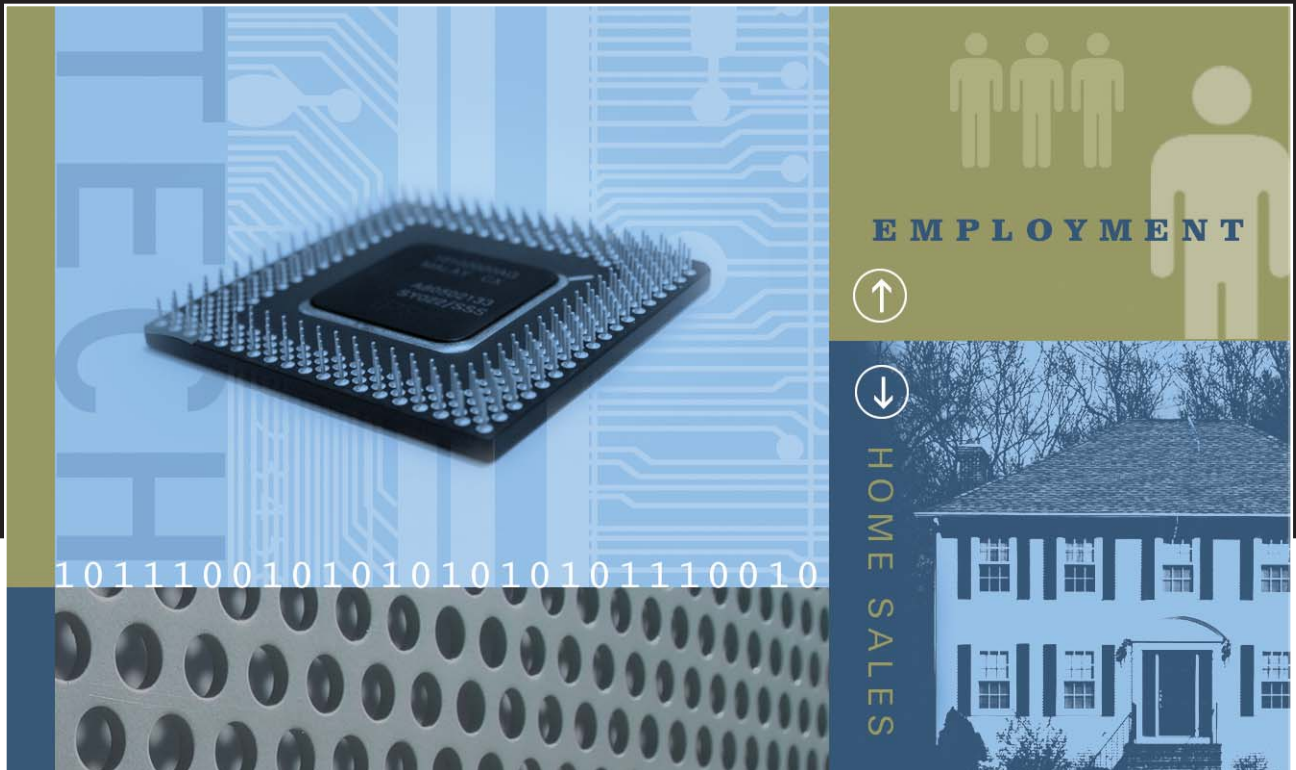
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# ECONOMIC CURRENTS



## **Fueled by technology market demand, Massachusetts economic growth increases** *But future clouded by fears over energy, inflation, interest rates and housing prices*

**T**he pace of economic growth in Massachusetts has picked up significantly, beginning in the fourth quarter of last year, reflecting improved worldwide markets for information technology equipment in the last half of 2005. This resurgence in technology markets helped reverse a deceleration in state economic growth that the state experienced between mid-2004 and the third quarter of 2005. The Massachusetts economy has performed better over the last six months than at any time since the current expansion began in the second quarter of 2003. The recent pace of expansion matched the long-term average growth in real gross state product of 3.6 percent over the 1975–2004 period.

It is uncertain, however, if this pace of growth will continue in the near future. Given the outlook for the national and global economies, Massachusetts exports should continue to support the higher growth achieved at the end of last year. There is a real danger, however, that the slowdown in the housing market could intensify, which could drag down construction activity and, through the wealth effect consumer spending. Fears over the high cost of energy and its effect on inflation, interest rates, household wealth, and consumer spending sent stock markets and consumer confidence plummeting in the last couple of months. On net, the expectation is for a moderate slowdown of growth over the remainder of

## ECONOMIC INDICES FOR MASSACHUSETTS

The *MassBenchmarks* Current Economic Index for May was 161.6, up 3.6 percent from April (at annual rates) and up 3.3 percent from May of last year. The Current Index is normalized to 100 in July 1987 and is calibrated to grow at the same rate as Massachusetts real gross state product over the 1978–2003 period.

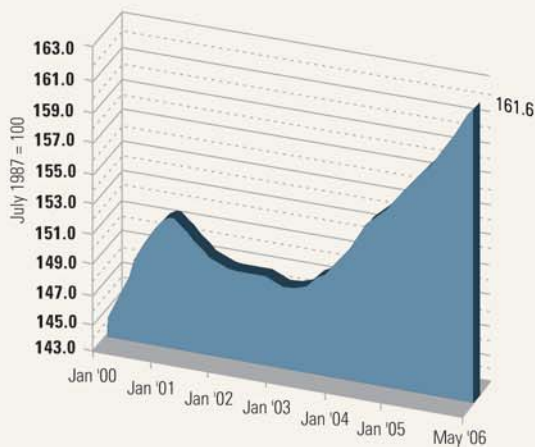
The *MassBenchmarks* Leading Economic Index for May was 2.2 percent and the three-month average for March through May was 3.2 percent. Because the Leading Index is a forecast of the growth in the Current Index over the next six months, expressed at an annual rate, it indicates that the economy is expected to grow at an annualized rate of 2.2 percent over the six months through November. Because of monthly fluctuations in the data on which the index is based, the three-month average of 3.2 percent may be a more reliable indicator of near-term growth.

The state's economy expanded solidly in the first quarter of this year at an annual rate of 3.5 percent and growth in April and May was on track to repeat this performance for the second quarter. In terms of the inflation-adjusted value of the goods and services it produces, for the past six months, Massachusetts has

expanded at its long-term average rate of 3.6 percent over the 1975–2004 period, as measured by real gross state product. Accompanying this modest acceleration in growth has also been a pickup in job creation. From September 2005 through May of this year, payroll employment added 22,500 net new jobs, an annual rate of growth of 1.1 percent. This is much better than the average annual rate of job growth of 0.7 percent since jobs began expanding in December 2003. Many of the new jobs have been technology-related, as Massachusetts has benefited from a worldwide resurgence in the demand for information technology products as well as its education and skill advantage in medical science and knowledge-based services.

However, negative expectations are weighing down the Massachusetts Leading Economic Index. In particular, stock markets and consumer confidence in the region have plummeted recently, in response to fears about the effects of high energy prices and a weakening housing market on inflation, interest rates, household wealth, and consumer spending. The recently released Office of Federal Housing Enterprise Oversight (OFHEO) housing price index suggests that housing prices in Massachusetts fell slightly in the first quarter.

**Massachusetts Current Economic Index**



**Massachusetts Leading Economic Index**



Source: University of Massachusetts

2006, with this expansion likely to continue at a much slower pace than that of the 1990s or 1980s.

**Labor markets are improving**

The state’s job situation continues to improve, with the pace of job gains accelerating in recent months. Since the payroll employment trough in December 2003, the growth in payroll jobs has averaged 0.7 percent at an annual rate through May of this year. In the last eight months, that rate has risen to a 1.1 percent annual rate.

On net, the number of payroll jobs increased by 23,900, or by 0.7 percent, in the year ending in May. Three super sectors accounted for the bulk of the gains: Professional and business services (7,100 jobs, a growth of 1.5 percent), education and health services (6,800 jobs, 1.2 percent), and financial services (4,500 jobs, 2.0 percent). In addition, 3,900 jobs were added in construction, an increase of 2.8 percent over the prior year.

Many of these new jobs are in technology or knowledge-based sectors. Within professional and business services, job growth in industries that included engineers, computer systems design, consulting, and scientific research and development all equaled or exceeded 2.8 percent over the prior year. Within the Information super sector, software jobs were up 6.3 percent over the year. While many of the jobs added in finance were related to real estate or real estate-related lending and therefore subject to near-term declines as the housing market softens, the securities, investment, and commodity investment act industry grew by 2.4 percent, a welcome change after shedding 18 percent of its jobs during the recession. Also, although manufacturing as a whole continued to lose jobs, albeit at only a 0.2 percent rate over the last year, the number of jobs in computers and electronics, the state’s largest manufacturing sector, increased by 2.2 percent. Even though the technology sector is not providing the explosive growth of the last two decades, it is still a strong and positive force for Massachusetts economic development.

These new jobs are also boosting wages. Massachusetts quarterly wage and salary disbursements, from the U.S. Bureau of Economic Analysis, rose at a 4.8 percent annual rate during the fourth quarter of last year and were 3.7 percent above the fourth quarter of 2004. More timely information from withholding taxes shows even stronger recent wage growth. After adjusting for changes in personal exemptions, seasonality, and monthly fluctuations, the growth in the wage and salary tax base for the three-month period ending in May was 5.1 percent (at an annualized rate) over the prior three-month period, and the May withholding tax base was 7.0 percent higher than a year earlier. After accounting for payroll job growth, the growth in average pay per worker was 6.2 percent in the year ending in May, or 2.3 percent in real terms,

after adjusting for inflation in the Boston Consumer Price Index. Withholding revenues were particularly strong in December and January, so the recent surge in wages may in part be reflecting a stellar bonus season.

State unemployment conditions are better now than a year ago. Though that may not appear to be the case given that the unemployment rate in May was 5.0 percent versus 4.8 percent a year ago, there are two reasons to believe so. First, monthly Massachusetts initial unemployment claims continued their downward trend in 2005 and are in the low-30 thousands (on a seasonally adjusted basis), which is about the same range as seen in the middle of the 1980s and 1990s expansions.

Second, long-term unemployment, defined as the number of persons who have been unemployed for more than half a year, also fell in 2005. Expressed as a fraction of the working-age population (those 15 or older), the number of long-term unemployed in Massachusetts fell from 0.83 percent in 2004 to 0.67 percent in 2005. These rates are comparable to those of the United States as a whole, which fell from .80 percent in 2004 to .65 percent in 2005. The distribution of unemployment is shifting towards those who have been looking for shorter periods of time. The falling level of initial unemployment claims also suggests that unemployment due to job losses is declining. The implication is that the current stock of unemployed is shifting towards new or re-entering labor force members. Presumably, this is a healthier situation, in terms of both personal economic pain and productivity, than one in which a greater number of the unemployed have been recently laid off or have been looking for work for a long time.

**Figure 1. Long-Term Unemployment**

YEAR	Long-term Unemployment as Percent of Population Over 14 Years of Age		Number of Long Term Unemployed	
	MA	U.S.	MA	U.S.
2003	1.05	0.91	53,750	2,014,321
2004	0.83	0.80	41,926	2,162,721
2005	0.67	0.65	33,739	2,764,244

Source: Current Population Surveys, January 2003 – December 2005

**Business conditions are good**

Beginning in mid- to late 2005, markets for Massachusetts exports appear to have improved, following a lull in growth that began in the second half of 2004. Direct evidence of this improvement is given by Massachusetts merchandise exports, and indirect evidence is seen in indicators of national and worldwide markets for information technology products. These indicators can fluctuate markedly from month to month or quarter to quar-

**Figure 2. Growth in Various Measures of Export-Related Markets**  
(All figures are based on nominal dollars; percent growth at annual rates)

	Reference Period	Most Recent 3 Months vs. Prior 3 Months	Most Recent 6 Months vs. Prior 6 Months	From Same Period Prior Year
Massachusetts Merchandise Exports	Mar '06	10.8	11.3	5.0
Investment in Information Processing Equipment and Software	2006Q1	14.3	7.5	9.0
Value of Shipments, Computers and Electronic Products, U.S.	Apr '06	13.2	11.7	6.8
Semiconductor Equipment Shippings, North America	Apr '06	52.5	31.9	16.9
Semiconductor Equipment Bookings, North America	Apr '06	133.8	57.9	60.4
Semiconductor Billings, Worldwide Market	Apr '06	9.8	12.5	8.2
Semiconductor Billings, the Americas	Apr '06	15.0	25.9	11.5
Bloomberg Stock Index for Massachusetts	Jun '06	-20.1	13.7	3.0

Sources: Merchandise Exports: U.S. Department of Commerce (DOC) and World Institute for Strategic Economic Research (WISER); Investment in Information Processing Equipment, U.S. Bureau of Economic Analysis (BEA); Value of Shipments, U.S. Census Bureau; Semiconductor Equipment: Semiconductor Equipment and Materials International; Semiconductor Billings: Semiconductor Industry Association; Bloomberg Stock Index: Bloomberg.

ter, but what is notable about recent patterns is their agreement in relatively strong growth, as reported in the accompanying table.

At the end of last year, for example, Massachusetts merchandise exports surpassed their prior peak, which was achieved in mid-2004, after a disappointing summer in 2005. National and worldwide markets for semiconductors and semiconductor equipment are particularly strong, and companies doing business in Massachusetts appear to be benefiting from this robust growth in global demand, leading to the technology-related improvement in payroll employment growth and wages noted above.

The single business conditions indicator that has turned contrary is stock market prices. U.S. stock markets fell sharply between early May and mid-June, in response to fears that rising inflation would prompt the Fed to continue raising interest rates and thereby slow economic growth. World stock markets followed suit. At this time,

it is not clear if these expectational fears about the future will actually be realized.

#### **Housing: weakening market, softening prices**

The Massachusetts housing market is softening, switching from a sellers' to a buyers' market, with a sharp drop in sales in the last quarter of last year and an increase in active listings. This has resulted in an increase of inventories that is putting downward pressure on prices. Beginning to respond to this inventory build-up, prices now appear to be falling moderately.

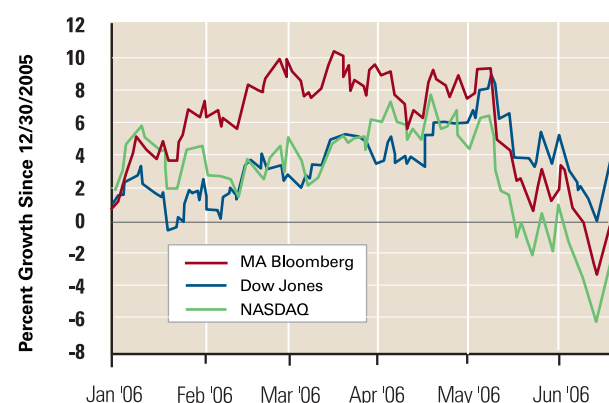
On a seasonally adjusted basis, sales of both single-family homes and condominiums fell sharply between June 2005 and April 2006. Sales rebounded in February, but this appears to be related to a warmer-than-average January. Active listings rose sharply in 2005, as sales volume declined, an indication that sellers were not getting their expected prices.

**Figure 3. Merchandise Exports, Seasonally Adjusted 3-Month Moving Average**



Source: U.S. DOC, WISER, seasonally adjusted by author

**Figure 4. Stock Index Growth**





Two widely used indicators of state housing prices often give conflicting indications of monthly or quarterly changes in prices, but the two now are in fairly close agreement. The Massachusetts Association of Realtors (MAR) measures the median price of existing homes, with separate measures for single-family homes and condominiums. The Office of Federal Housing Enterprise Oversight (OFHEO) tracks repeat sales prices and refinancing appraisals of single-family homes that involve conforming, conventional mortgages purchased or securitized by Fannie Mae or Freddie Mac. The OFHEO index excludes condominiums.

Each index has its advantages, yet each is an imperfect measure of changes in the market price of housing. Because the MAR indices include all sales from affiliated multiple listing services, they capture most market transactions in the state. MAR's disadvantage, however, is that the median price is affected by changes in the distribution of sales by size or quality of houses actually sold. For example, if the distribution of the sales of homes shifts towards smaller or lower quality houses, changes in the median price of sold homes would understate the underlying actual price change. A shift in the distribution of homes sold in the opposite direction would result in the median price overstating the actual price change.

The OFHEO index, on the other hand, is not subject to this problem because it is based on repeat sales, so the price of each house is compared to itself in some earlier month or year. This index, however, suffers from the fact that it excludes houses that are not financed with conventional and conforming mortgages. And since the conforming mortgage limit in 2005 was \$359,650, a large part of the Massachusetts market is excluded from the index. If prices of large, high-quality homes were increasing at a lower (faster) rate than the rest of the market, the OFHEO index would overstate (understate) the underlying actual price change in the housing market. Another problem with the OFHEO index is that it includes refinancings, where prices are determined by appraisals rather than by

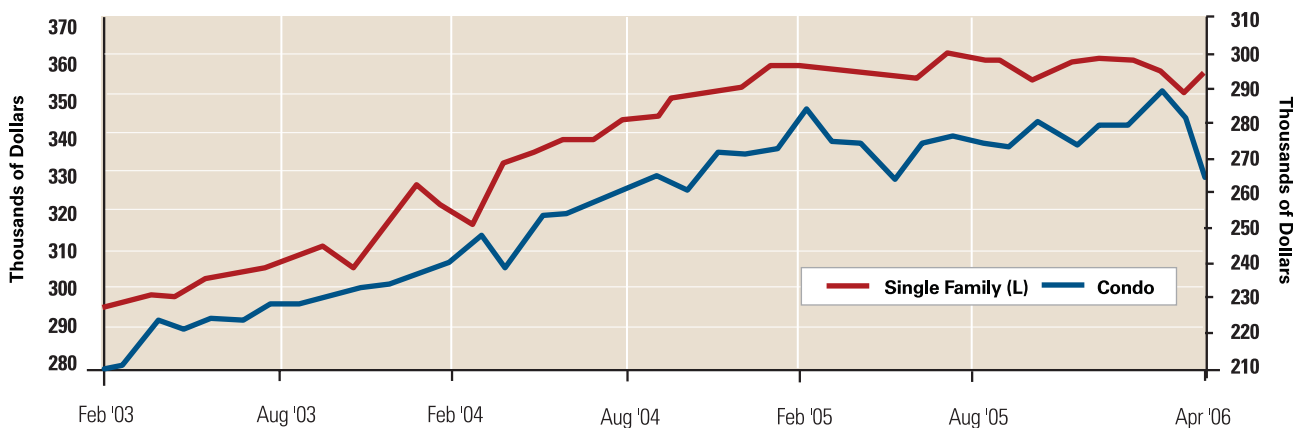
actual market transactions. The OFHEO also publishes a national index that only includes purchases. In the last year, this index rose two percentage points less than the index that included refinancings. Recently, the OFHEO reported that the difference between the two indices was due to an increase in the popularity of cash-out refinances, which, in the first quarter of 2006, accounted for half of the transactions on which their price index is based.<sup>1</sup> In an analysis by region, they reported that for New England, the "purchase only" index, which excludes refinancings, rose by 3.6 percentage points less than the overall housing price index over the year ending the first quarter of 2006.

Taken together, the two housing price measures suggest that prices began to turn down in the beginning of this year. In April, the MAR median price of single family homes rose only 0.3 percent over the prior year, while the median price of condominiums declined 2.9 percent. On a seasonally adjusted basis (seasonally adjusted by UMass), the three-month average of single-family home prices ending in April fell by an annualized rate of 4.5 percent over the prior three-month period, while the corresponding price measure for condos rose by 1.3 percent on an annualized basis. The overall OFHEO index for Massachusetts in the first quarter of this year rose by a 2.2 percent annual rate over the last quarter of last year, but after taking into account the upward bias due to refinancings, prices in a Massachusetts "purchase only" index may have actually fallen at an annual rate of 1 to 2 percent. One conclusion is clear: the market is weakening, with softening prices.

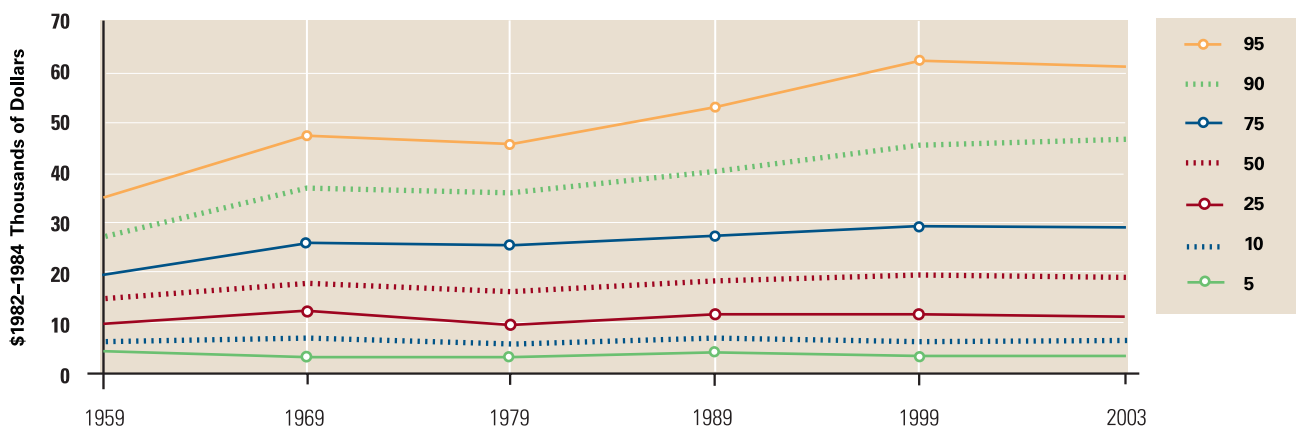
### Prospects for the future

Going forward, the pace and character of the state's economy will be shaped by how certain trends develop in the near- and long-term future. One is the near-term strength in world economic growth, which should provide a steady source of demand for the products that the state produces. Even though Massachusetts firms are losing market share to Asia for information products, the size of the demand

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



Source: Mass. Association of Realtors, Seasonally Adjusted by author

**Figure 6. Earnings Percentile Cutoffs, Real Dollars, Massachusetts, All Full-Year Workers**

Source: Decennial Census PUMS, 2004 American Community Survey, Boston CPI-U

“pie” for these products is growing fast enough for the state’s slice to continue growing. Productivity is increasing at about the same rate as export demand, so incomes in the information technology equipment producing sector are growing strongly, though employment is not. The situation is more favorable in the medical science sector, as an aging population, growing worldwide incomes, and the state’s advantage — due to its confluence of universities, research hospitals, and an educated workforce — should lead to continued employment gains, as well as strong income growth.

Another trend going forward is the state’s educational advantage, which has continued to increase over the nation as a whole, despite the state’s more severe recession and population losses. This is because the state’s higher education system continues to draw students into the region, resulting in a fresh supply of highly educated youth. According to the most recent American Community Survey, for example, nearly 50 percent of Massachusetts 30-year olds have a BA or higher degree, almost 20 percentage points higher than in the nation as a whole. This educational advantage leads directly to a technological advantage that is clearly visible in recent employment gains in technology-related and knowledge-based professional services. The state may continue to bleed good-paying manufacturing production jobs, but these are being replaced — and more — with high-paying jobs in science, engineering, design, and consulting.

Related to changes in the distribution of jobs, returns to education, and globalization of the workforce, workers’ earnings have become more unequally distributed over time. This is true of the nation as a whole, but the trend towards inequality has been even more rapid in Massachusetts. Over the past several decades, median workers’ earnings have risen just slightly more than inflation; but the higher one goes into the income distribution, the

faster workers’ earnings have increased. Going forward, this earnings distribution is likely to continue to become more unequal, rather than less.

Finally, employment growth over the next several years of the current economic expansion will lag that of the nation, as well as that of Massachusetts during the last expansion of the 1990s. Because net domestic out-migration has been a characteristic of the state since frontier days, long-term employment growth in the state has lagged that of the nation for perhaps centuries. Slower employment growth in the current expansion is partly due to slower population and labor force growth nationwide, but is partly also the result of a higher cost of living in Massachusetts, particularly in the cost of housing, which is much more expensive here than in the nation as a whole, even after accounting for the state’s higher personal incomes. This is an untenable situation, which market forces will correct, either through an outright decline in house prices or a marked slowdown in the rate of house appreciation. Although there may be short-term consequences in employment and overall growth, a diminution of the state’s cost of living disadvantage will pay off in the long run. ◀

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

<sup>1</sup> Office of Federal Housing Enterprise Oversight, “House Price Increases Continue; Some Deceleration Evident”, June 1, 2006, <http://www.ofheo.gov/media/pdf/1q06hpi.pdf>.