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Massachusetts Recovery Stronger Than First Thought

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ECONOMIC CURRENTS



Massachusetts recovery stronger than first thought

Output growth in 2004 matched national rate,
but employment still lags

ALAN CLAYTON-MATTHEWS

Massachusetts is still in the early stages of the recovery that began in the spring of 2003, but it may still be a couple of years more before it feels as if the recession is finally over. That “feel good” time will come only when unemployment is low enough for the state to achieve what economists call “full employment.” Currently, recent employment estimates from the payroll survey suggest that demand for the products and services supplied by Massachusetts producers is finally outstripping the ability of employers to meet that demand with existing employees. The result is that payroll employment is be-

ginning to expand more quickly, and workers are finding jobs more easily than they have for several years. Still, a lot of slack remains in the job market, which has a large number of unemployed workers. Unemployment may even be increasing temporarily, as discouraged job seekers re-enter the labor market in response to improving chances of landing a job.

Fresh information about the Massachusetts economy, particularly revised payroll job counts for 2004 and new and revised gross state product estimates through 2003, indicate that the recovery in 2004 was stronger than had been previously thought. In terms of employment, the recovery was a

ECONOMIC INDICES FOR MASSACHUSETTS

The Massachusetts Current Economic Index for February was 153.0, up 2.5 percent from January (at annual rates), and up 3.7 percent from February 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 Massachusetts Leading Economic Index for February was 2.7 percent, and the three-month average for December through February was 3.2 percent. The Leading Index is a forecast of the growth in the current index over the next six months, expressed at an annual rate. Thus, it indicates that the economy is expected to grow at an annualized rate of 2.7 percent over the next six months (through August). 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.

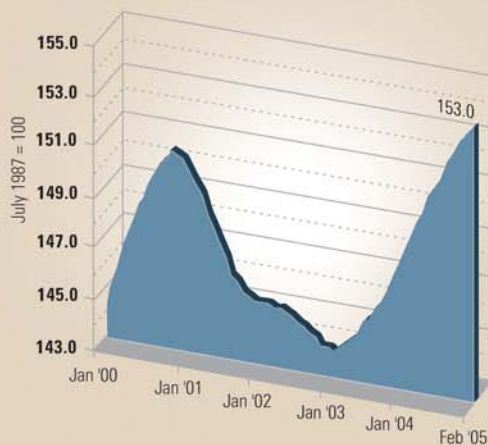
Massachusetts gross state product peaked in the second quarter of last year at a 4.4 percent annualized rate and slowed to a 3.6 percent rate in the fourth quarter. The Leading Index is forecasting a continued deceleration at least through the first half of this year. The slowdown began in the second half of last year, when worldwide demand for information technology products peaked. The effect on Massachusetts

manufacturers is evident in state merchandise exports, which declined at a 14.9 percent annualized rate between last May and this January on a seasonally adjusted basis.

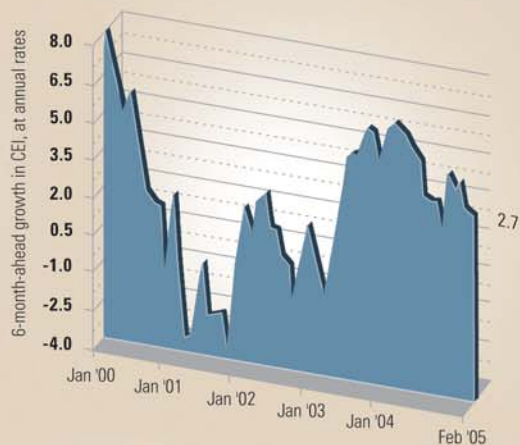
In February, two indicators contributed to a forecast of above-trend growth: total non-agricultural employment and consumer confidence for New England. Six indicators contributed to below-trend growth: withholding taxes, sales taxes, the unemployment rate, the interest rate spread between 10-year and three-month U.S. Treasury securities, the Bloomberg stock index for Massachusetts, and motor vehicle sales taxes. Two indicators contributed to average-trend growth: initial unemployment claims and construction employment.

For the three-month period December through February, three indicators contributed to a forecast of above-trend growth: total non-agricultural employment, consumer confidence for New England and the Bloomberg stock index for Massachusetts. Six indicators contributed to below-trend growth: withholding taxes, sales taxes, the unemployment rate, the interest rate spread between 10-year and three-month U.S. Treasury securities, initial unemployment claims and motor vehicle sales taxes. One indicator, construction employment, contributed to average-trend growth.

Massachusetts Current Economic Index



Massachusetts Leading Economic Index



Sources: The Conference Board; University of Massachusetts; Federal Reserve Bank of Boston

bit stronger; in terms of output, it was substantially stronger. Payroll employment revisions raised last year's estimate of state output growth by about one-third of a percentage point, and retrending the Current Economic Index to the most recent available estimates of gross state product added more than another full percentage point to output growth in 2004. The upshot: in terms of output, Massachusetts grew at almost the same rate as the nation in 2004.

However, the outlook for the first half of 2005 is for slower growth for Massachusetts than the state experienced in 2004. This slowdown began in the second half of 2004 and is reflected in a pause in demand growth for semiconductors and semiconductor equipment, a slowdown in the state's merchandise exports, and a slowdown in wage and salary growth and consumer spending. High energy costs are siphoning off consumer spending, and rising interest rates will also exert a drag on the economy.

Nevertheless, the slowdown should not be great enough to cancel the job market's recent strength. Employers are short enough on labor that even slow growth will require them to continue hiring. Furthermore, a weaker dollar will help support both U.S. and state exports.

a whopping 10.9 percent, a bullish sign for strong growth in permanent payroll jobs for the remainder of this year. The strong 4.2 percent gain in leisure and hospitality jobs and the particularly strong 13.5 percent gain in the accommodations sub-sector reflect a rebound in tourism or business travel, or both. The weak dollar and strong euro are drawing European visitors to Boston. The increase in travel may also reflect a relaxation of the post 9/11 atmosphere of fear and tension.

The unemployment situation also reflects an improving job market. Despite the rise in the unemployment rate from 4.7 percent in December to 4.9 percent in February, both the unemployment rate and the number of unemployed fell markedly last year. The unemployment rate, which peaked at 5.9 percent during April through August of 2003, fell during 2004, from 5.6 percent in January to 4.7 percent in December, before rising slightly to 4.9 percent in February of 2005. The number of unemployed followed a similar pattern, peaking at just over 200,000 in April 2003. During 2004, the number fell from 190,800 in January to 159,900 in December, before rising to 164,200 in February. The recent rise in unemployment may actually reflect some

Growth during the last 12 months has been particularly strong in professional and business services, and in leisure and hospitality. Nearly all professional industries, including engineering, computer systems design, consulting, and scientific research and development saw strong job gains.

Job market and output are both positive

The job market has slowly improved throughout 2004 and into this year. (Because of continuing problems with the official seasonal adjustments, we rely on our own seasonal adjustments to the official unadjusted data, which show significantly stronger job growth in the beginning of this year than the official counts — see sidebar). According to the *MassBenchmarks* version of seasonally adjusted payroll employment, the number of jobs increased by 1.1 percent from February 2004 to February 2005, the best year-over-year gain since the recession. Moreover, of a total increase of 34,400 in payroll employment over this period, 13,700 was in the first two months of this year.

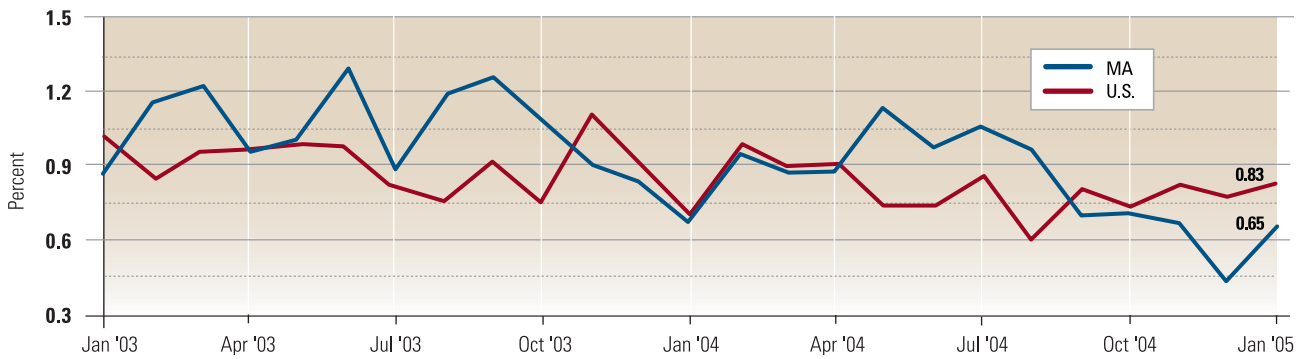
Growth during the last 12 months has been particularly strong in professional and business services, and in leisure and hospitality. Nearly all professional industries, including engineering, computer systems design, consulting and scientific research and development, saw strong job gains. Year-over-year growth in employment services was

strength in the job market, as discouraged workers return to the labor market with renewed confidence that jobs are really available.

The improvement in unemployment is also echoed in the number of long-term unemployed, that is, the number of persons who have been unemployed for more than six months. According to the Current Population Surveys, this number fell from an annual average of 53,800 in 2003 to 41,900 in 2004, a drop of 22 percent. In January, the CPS counted 33,000 long-term unemployed residents in the state. The proportion of the population that is long-term unemployed is now lower in Massachusetts than it is in the nation as a whole.

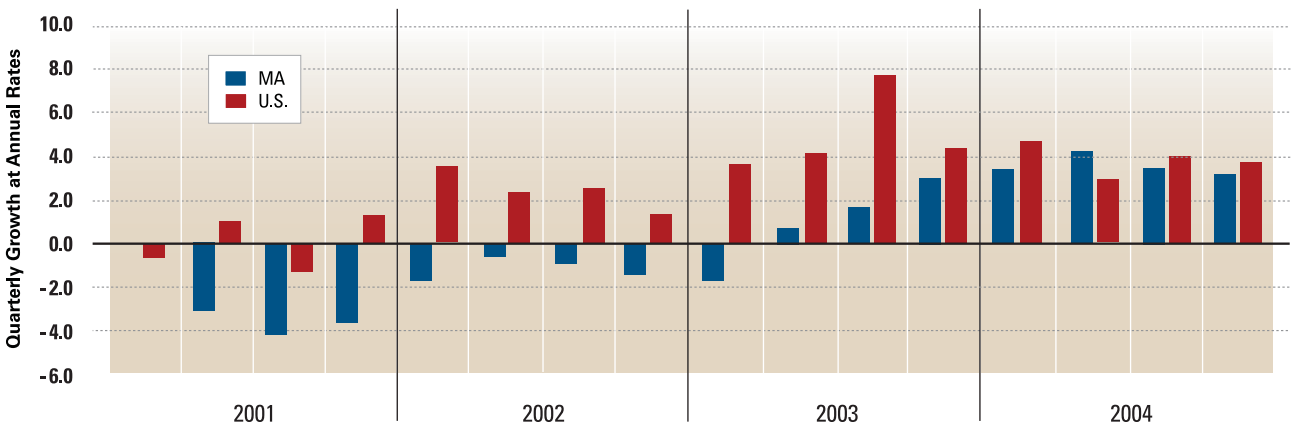
In December, the U.S. Bureau of Economic Analysis released new gross state product estimates for 1977 through 2003, which were used to retrend the Current Economic Index over the period 1978 to 2003. This recalibration, which had not been performed for several years, showed that, as a result of strong productivity growth in the 1990's,

Long Term Unemployment as a Percent of the Working Age Population



Source: Current Population Surveys

Growth in Real Product, Massachusetts Current Economic Index vs. U.S. GDP



Source: U.S., Bureau of Economic Analysis; Massachusetts: Author

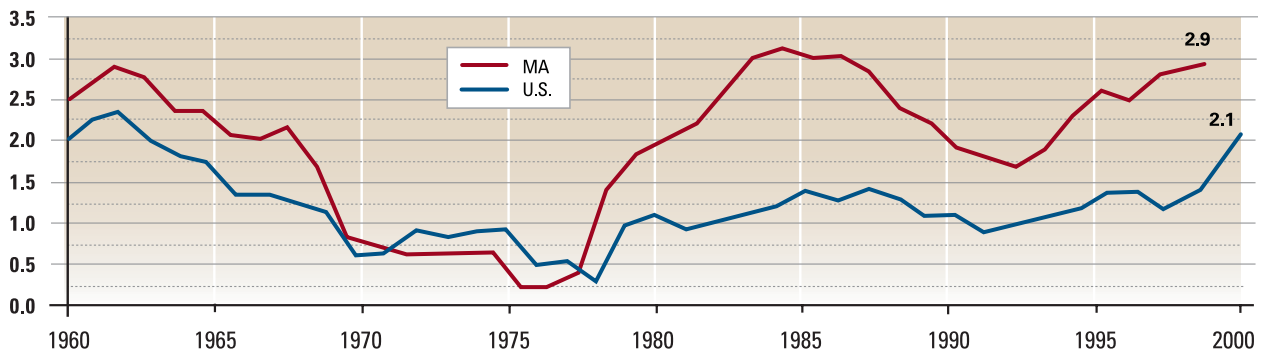
the long-run trend of the index was raised to 3.7 percent, more than a full percentage point above its prior long-term trend rate of 2.6 percent. This means that gross state product growth in 2004, the first full year of the recovery, now appears to be significantly stronger than previously estimated. In fact, gross state product grew at almost the same rate as the U.S. gross domestic product. From the fourth quarter of 2003 to the fourth quarter of 2004, the state's real gross state product, as estimated by the Current Economic Index, grew by an estimated 4.0 percent, compared to 3.9 percent for real U.S. gross domestic product.

The proportion of the population that is long-term unemployed is now lower in Massachusetts than it is in the nation as a whole.

Even after the retraining of the Current Economic Index to the BEA gross state product estimates, the two measures disagree about the length and depth of the Massachusetts recession. On an annual basis, the BEA gross state product figures, which are estimates of annual average real gross state product, did not decline at all during the last recession, although GSP expanded only by 0.1 percent in 2002. In contrast, the annual average of the Current Economic Index declined in 2002 and 2003, by 2 percent and 0.1 percent respectively, even after recalibration. This disagreement between the two measures appears to be related to the cyclical pattern of labor earnings and how each incorporates earnings into its respective measurements.

The dramatic upward revision of gross state product growth in 2004 does not change the severity of the recession in terms of its impact on employment and incomes. It is still the case that Massachusetts lost 6.1 percent of its jobs and 1.5 percent of its earnings (a 9.2 percent loss in real terms). These losses were proportionately greater than the nation as a whole, which experienced a 2.1 percent job loss and a 0.9 percent earnings loss (7.9 percent in real terms).¹ The

Productivity Growth, 9-Year Centered Moving Average



Source: U.S. Bureau of Economic Analysis and U.S. BLS

relative weakness of job growth in Massachusetts versus the nation persisted throughout 2004. Between December of 2003 and December of 2004, the number of payroll jobs increased by 0.7 percent in the state, versus 1.9 percent in the nation.

Why then, was the Massachusetts economy able to grow at the same rate as the United States in 2004, despite significantly lower employment growth? The answer lies in greater productivity growth. Not only are Massachusetts workers more productive on average, but their rate of productivity growth is faster than for the nation as a whole. Remarkably, this faster rate of productivity growth has been a long-term phenomenon. With the exception of the first half of the 1970's, the recent recession, and a few other scattered years, productivity growth has been substantially higher in the state than the nation, by an average of 0.8 percent per year since 1955 to the present.²

Growth is decelerating

Despite the strong performance of the Massachusetts economy in 2004, the state economy has been decelerating since the second half of last year. The slowdown was coincident with, if not caused by, a leveling off of worldwide demand for information technology (IT) products following the

Growth decelerated to 3.9 percent in the third quarter and to 3.6 percent in the fourth quarter. The Leading Index for February is predicting that growth for the February through August period of this year will continue to decelerate to an annual rate of 2.7 percent. The three-month average of the Leading Index shows a milder slowdown to a 3.2 percent annual rate.

The Current and Leading Indices are consistent with several other indicators of national and worldwide information technology markets, and with other indicators of the state's economy. One measure is bookings and billings of North American-headquartered manufacturers of equipment used to manufacture semiconductor devices.³ Bookings, which measure future sales, and billings, which measure current sales, grew rapidly from early 2003 to mid-2004, and then declined into the beginning of this year. Bookings fell by 37 percent between June 2004 and February 2005 and are now well below billings. The current book-to-bill ratio of 78 percent suggests that production in the near-term is likely to fall to meet the lower level of demand. A less dramatic but similar downturn in worldwide sales of semiconductor chips began in August 2004. Worldwide sales of semiconductor chips fell by 3.7 percent between August and December⁴, according to the Semiconductor Industry

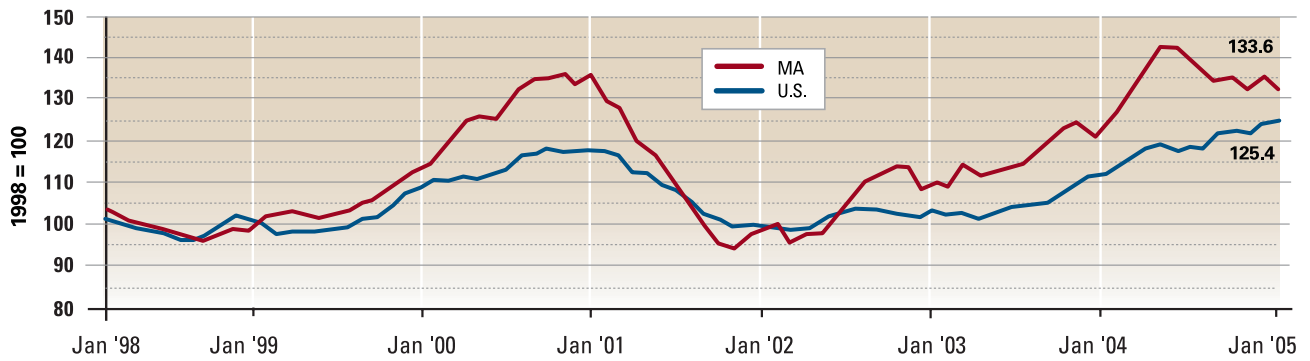
Despite a strong performance in 2004, the Massachusetts economy has been decelerating since the second half of last year.

rapid takeoff in demand that lasted through 2003 and into the first half of 2004. This growth slowdown is evident in the pattern of quarterly growth rates in real gross state product estimated by the Current Economic Index. Growth accelerated steadily from a 0.9 percent annual rate in the second quarter of 2003 to a 4.1 percent rate in the first quarter of 2004 and a 4.4 percent rate in the second quarter.

Association. The impact is probably heightened for U.S. producers, who have been losing market share steadily for several years. Sales to companies in the Americas fell by 10 percent over the same period.

Rather than measuring activity of Massachusetts producers directly, these IT indicators measure what is happening in national and worldwide markets in which the

Merchandise Exports, Seasonally Adjusted 3-Month Moving Average



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

state has a significant stake. A direct measure of Massachusetts manufacturing business activity is state merchandise exports, and these confirm the timing of rapid growth to mid-2004, followed by a decline.⁵ Merchandise exports rose at an impressive 20.7 percent annualized rate between October 2001 and May 2004, exceeding their prior pre-recession peak and far outstripping the growth of overall merchandise exports from the U.S. Since last May, however, state merchandise exports have declined at a 14.9 percent annualized rate through January, while they have continued to rise for the nation. The rapid growth and recent decline reflect the concentration of production and exports of information technology products.

Massachusetts total wage and salary income has grown steadily but slowly throughout the recovery that began in March 2003, at an annualized rate of 3.4 percent, or 1.2 percent after accounting for inflation as measured by the U.S. consumer price index.⁶ Per worker real wages, however, are barely keeping up with inflation. Per worker real wages for Massachusetts payroll workers were rising at a 2.1 percent year over year rate in the beginning of 2004, but by February of this year, wage rates were just keeping pace with inflation.

State consumer spending, as estimated from the sales tax base constructed from regular sales taxes and taxes on communications services, has risen 4.3 percent in real

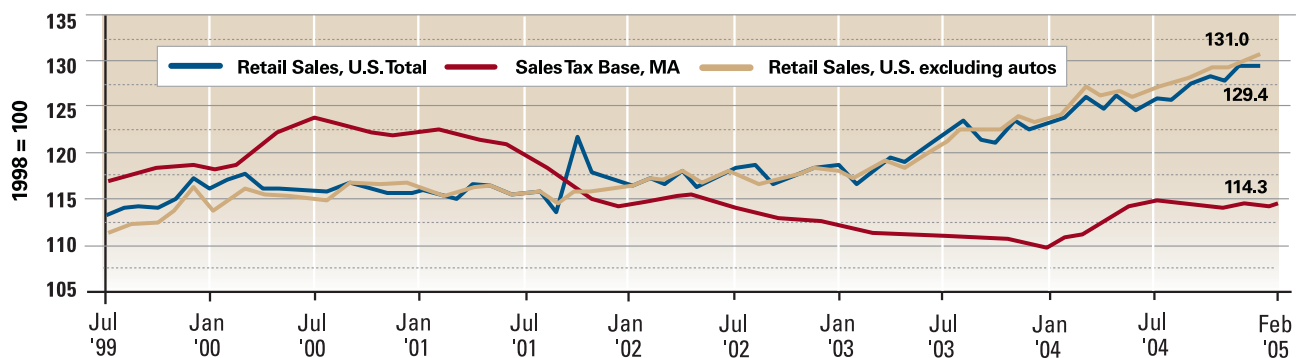
terms since January 2004, but all the growth occurred in the first half of 2004.⁷ Between July 2004 and February 2005, consumer spending on taxable goods and services has just kept pace with inflation; that is, it has been flat in real terms.

Short-term slowdown or lasting problem?

Rather than reflecting some underlying endemic weakness in the state's economy, the growth slowdown that began in mid-2004 appears to reflect nothing more than a growth pause in worldwide demand for information products, which is likely to reverse itself in the near future. In the medium-term, the primary risks to a sturdy expansion are rising interest rates and inflation, and their effects on real income growth and, through house prices, on household wealth. These risks come with silver linings: The primary factor driving inflation and interest rates is the huge trade deficit and weakening dollar. And a weaker dollar will boost exports as the nation literally works its way out of foreign indebtedness. Also on the upside, a long period of weak housing appreciation, or even a short period of housing price declines, will help solve the state's competitive disadvantage in housing prices.

Much has been made about the latest annual population report that Massachusetts was the only state in the nation to lose population, and that this population loss indicates

Real Consumer Spending



Source: Census Bureau for U.S. Mass DOR with author's calculations for Massachusetts. Deflated by the U.S CPI-U, Bureau of Labor Statistics

a fundamental weakness. Aren't people voting with their feet, abandoning a state with poor job prospects and being pushed out by high housing costs?

People have been leaving Massachusetts in greater numbers than they have been entering from other states and countries each year since April 2000.⁸ In the year ending on June 30, 2004, this net out-migration was great enough to more than offset the natural increase in population due to

the excess of births over deaths. Moreover, in the last few years, this has been accompanied by a "brain drain," as more college-educated adults have left the state than entered it.⁹

This population loss would be a signal of a fundamental weakness if it were a long-term trend, but it is not. Rather, it appears to be cyclical phenomenon that is not new. In the last recession of 1989–91, the same dynamic — a large net out-migration with a "brain drain" — also occurred.

Correcting payroll job counts for seasonal adjustment problems

The U.S. Bureau of Labor Statistics' seasonal adjustment problems will apparently continue this year. While *MassBenchmarks* deals with this problem by seasonally adjusting the publicly released "not seasonally adjusted" data using the BLS' own publicly available X-12 ARIMA software, one need not be an econometrician to easily perform such adjustments. The procedure is simple and virtually as good as the sophisticated method that we use.

This method utilizes both the officially released seasonally adjusted and not seasonally unadjusted job counts and uses the year-over-year change in the not seasonally adjusted count — which is virtually unaffected by seasonality — to adjust the official seasonally adjusted count. For example, while the year over year change in not seasonally adjusted payroll employment in February was 33,200 ($33,200 = 3,140,200 - 3,107,000$), the year over year change in the official seasonally adjusted count was only 20,900 ($20,900 = 3,191,300 - 3,170,400$). To perform your own adjustment to the data, simply add the difference of 12,300 ($12,300 = 33,200 - 20,900$) to the official seasonally adjusted count of 3,191,300 jobs to get 3,203,600.ⁱ This is close to the seasonally adjusted

figure of 3,202,500 that *MassBenchmarks* calculated for February using the sophisticated X-12 ARIMA seasonal adjustment program.

This simple difference in differences method "works" because the annual benchmark revision that BLS performs each January "fixes" the seasonal adjustment glitch for the prior year's data. Over 70 percent of the time in the 1990 to 2004 history of the NAICS payroll job data, the year-over-year change in not seasonally adjusted payroll job count was within 1,000 of the year over year change in the seasonally adjusted job count. Over 90 percent of the time, the difference between the two differences was within 2,000 jobs, and only once was the difference between the two differences more than 4,000, when it was 4,100.


Payroll job data can be downloaded from the Division of Unemployment Assistance's excellent website at <http://www.detma.org/>. Go to the "Job Estimates (CES-790)" link under the "Economic Data" picture.

ⁱ The astute reader will note that you can arrive at this figure more quickly by adding the difference between the seasonally adjusted and not seasonally job count of the prior year to the not seasonally adjusted job count of the current year. The methodology presented above, however, highlights the rationale for the adjustment process.

The difference in different approaches to alternative seasonal adjustment

	February 2004	February 2005	
Seasonally adjusted	3,170,400	3,191,300	20,900
Not seasonally adjusted	3,107,000	3,140,200	33,200
Add difference of differences		12,300	
Alternative seasonally adjusted estimate		3,203,600	

In the subsequent expansion of the 1990's, net migration turned positive, along with a "brain gain." Moreover, the gain during the expansion far outweighed the losses of the severe recession, so that by April of 2000, the state had a higher proportion of adults with college degrees than any other state.

History, however, does not necessarily repeat itself, and one important aspect of the state's migration that indicates an adverse long-term trend is the crucial reliance on immigration of foreigners, particularly college-educated foreigners and foreign college students. As is true of immigrants to Massachusetts from other states, immigrants from other countries are more likely than the native population to have college degrees. Between one-fifth and one-fourth of all college-educated people or college students who come into Massachusetts are international immigrants. This proportion appears to have been more or less constant from the 1989–91 recession to the present. Without this inflow of foreign-educated people and college students, Massachusetts would have experienced a net brain drain, instead of a brain gain, over the last 15 years, including the period of the 1990's expansion. This inflow is at risk, partly due to the tighter immigration policy after 9/11 and the international chill towards the U.S. in the aftermath of the war in Iraq. Foreign college student enrollment in both Massachusetts and the U.S. declined for the first time in 32 years in 2004. More importantly in the long run, however, may be the growth of economies, professional jobs and higher educational institutions in developing countries such as India and China, which will draw potential foreign students and college-educated workers away from Massachusetts. 

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¹ Jobs are measured by payroll employment. Earnings for Massachusetts are measured by the withholding tax base estimate of wage and salary disbursements and for the U.S. by wage and salary disbursements from the NIPA accounts. The U.S. CPI was used to deflate both earnings series. Employment and earnings losses are percentage changes from the monthly peak to the monthly trough of the respective series.

² Productivity is measured here by gross state product or gross domestic product per payroll employee. The annual gross state product estimates for Massachusetts from 1963 and later are from the U.S. Bureau of Economic Analysis, and from 1955–1962 are from the Federal Reserve Bank of Boston. For years that state-specific deflators for gross state product were not available, the gross domestic product deflator was used. U.S. gross state product and gross domestic product are from the U.S. Bureau of Economic Analysis.

³ From the Semiconductor Equipment and Materials International (SEMI) industry association.

⁴ From the Semiconductor Industry Association (SIA), seasonally adjusted by *MassBenchmarks*.

⁵ Merchandise export data are from the World Institute for Strategic Economic Research (WISERTrade), seasonally adjusted by *MassBenchmarks*.

⁶ Massachusetts wage and salary disbursements are imputed from state withholding taxes and U.S. wage and salary disbursements are from the U.S. Bureau of Economic Analysis, NIPA tables. Per worker wages are wage and salary disbursements divided by payroll employment from the BLS. The U.S. Consumer Price Index for Urban Consumers, from the Bureau of Labor Statistics, is used to deflate wages.

⁷ The sales tax base is constructed from regular sales and use taxes. These include sales taxes on goods and telecommunications services but exclude taxes on motor vehicles, meals and excise taxes on motor fuels, cigarettes and alcohol. The real tax base uses the U.S. Consumer Price index to deflate for inflation. Approximately one-fourth of these tax revenues are paid by businesses and three-fourths by consumers.

⁸ Annual population and migration flows are from the U.S. Census Bureau, Population Estimates Branch. The estimates pertain to population on July 1 of each year and changes from the prior year, except for Decennial Census years, when the reference date is April 1.

⁹ The estimates of migration and education are from the March Current Population Survey Annual Social and Economic Supplements, 1988–2004, and the 2000 Decennial Public Use Micro Sample.