2004

Economic Currents: The State of the State Economy

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economic CURRENTS

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While the Federal Reserve Board can be "patient" in raising interest rates—"patient" is their descriptive term for their outlook on interest-rate policy—workers have had to be patient in waiting for jobs to return. The past year has exhibited a dichotomy between the product and the labor markets. While GDP, manufacturing output, corporate profits, and stock prices have soared, labor markets have languished. By some measures, this dichotomy has been even more pronounced in Massachusetts. The Bloomberg stock index for Massachusetts, for example, outperformed the national NASDAQ, Dow Jones, and S&P 500 indexes, even while employment continued to decline. The relative weakness of job and income growth in the state reflects the state's concentration in the production of equipment related to information-processing technology, which crashed when the bubble burst in 2000.

Furthermore, an avalanche of anecdotes about outsourcing and offshoring suggest that the explanation of this business–employment dichotomy involves a massive

Economic Indexes for Massachusetts

The Massachusetts Current Economic Index for January was 126.5, up 0.4 percent from December (at annual rates), and up 0.6 percent from January 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 1978–1997 period.

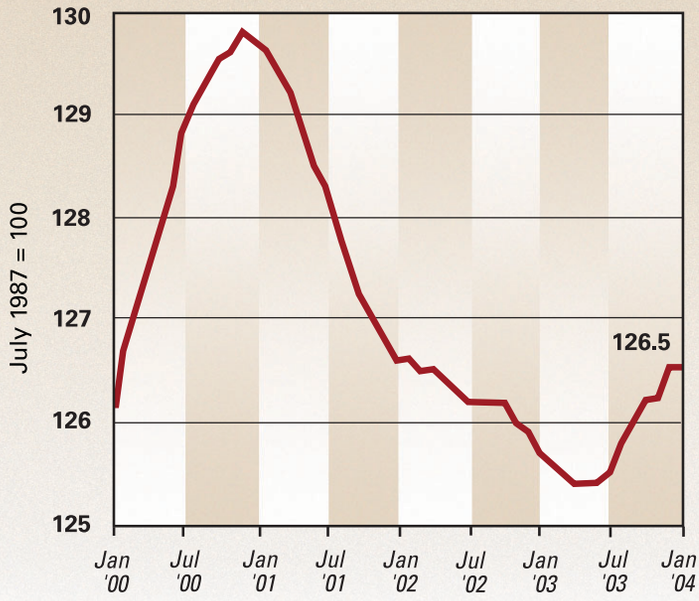
The Massachusetts Leading Economic Index for January was 3.2 percent, and the three-month average for November through January was 3.0 percent. The leading index is a forecast of the growth in the current index over the next six months, expressed at an annual rate. Because of monthly fluctuations in the data on which the index is based, the three-month average of 3.0 percent may be a more reliable indicator of near-term growth.

The job market continues to be soft, despite a strong 2003 in terms of production and orders for technology products, and soaring business confidence both nationally and in Massachusetts. This dichotomy is reflected in both tax revenues and consumer confidence. State corporate and business-tax collections are up strongly, while withholding and sales-tax collections have displayed only weak growth. Households feel good about future conditions, but not about current conditions, especially regarding jobs. Employers are still reluctant to commit to new hires, and appear to have fulfilled increasing production with a combination of overtime and temporary employees. Continued adoption of labor-saving technology and an unrestrained willingness to cut costs probably accounts for the unprecedented joblessness of this recovery. Anecdotes about outsourcing are common—the current Beige Book report for the New England region from the Federal Reserve Bank of Boston is one example.

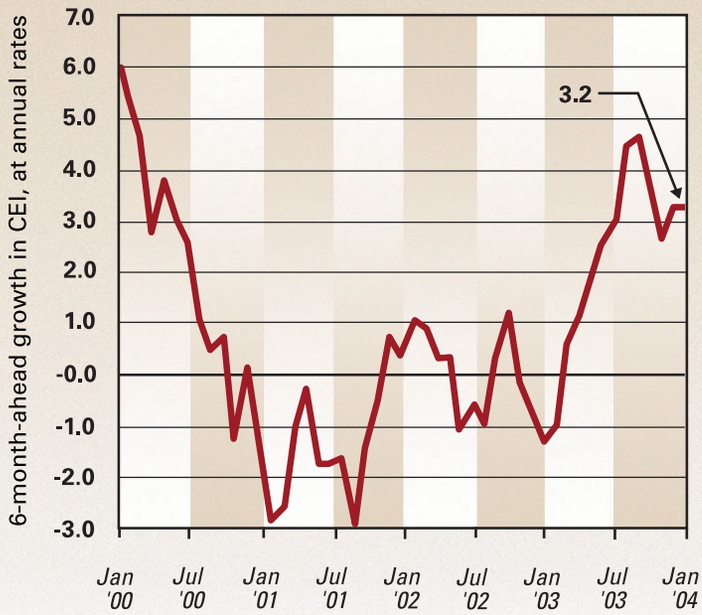
Nevertheless, labor markets will have to turn around soon, since output, especially in technology products, continues to grow faster than reasonable estimates of productivity and outsourcing combined. Several indicators are consistent with the beginning of an employment turnaround in Massachusetts. These include recent growth in temporary employment services, a fall in the unemployment rate, continued moderate levels of initial unemployment claims, better-than-expected withholding-tax collections in February, and a rise (unofficial) in payroll employment in January, when an alternative seasonal adjustment procedure is applied to the unadjusted figures.

SUBMITTED MARCH 4, 2004

Massachusetts Current Economic Index



Massachusetts Leading Economic Index



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

Table 1. Measures of Business Activity

All rates of growth are expressed as annualized rates of growth. Quarterly growth: most recent three-month period relative to prior three-month period. Six-month growth: most recent six-month period relative to prior six-month period.

Item	Quarterly Growth	6-Month Growth	Growth from Same Period Last Year	Date
Massachusetts Current Economic Index	1.3	1.2	0.6	Jan 2004
Gross Domestic Product (U.S.)	4.1	5.9	4.3	2003 Q4
Confidence				
AIM Business Confidence Index (MA)	66.2	36.2	28.8	Feb 2004
NAPM Manufacturing Index (U.S.)	40.3	44.4	24.3	Feb 2004
Corporate Profits (U.S.)	46.0	33.0	24.9	2003 Q3
Bloomberg Stock Index for Massachusetts	58.5	62.6	65.6	Feb 2004
Productivity/Cost				
Productivity (U.S.)	2.1	6.6	5.3	2003 Q4
Unit Labor Costs (U.S.)	-0.4	-3.3	-1.6	2003 Q4

migration of jobs, including well-paid professional jobs like computer programming, overseas. While there is some truth to this explanation, the reason for the jobless recovery is primarily due to firms' relentless cost reductions through labor-saving productivity gains, and the reluctance of employers to commit to new permanent hires.

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The constant refrain that job growth is just around the corner should finally ring true over the next several months in Massachusetts. The expansion in the demand for new technology equipment has been fast enough and long enough to swamp "labor saving" due to technology or outsourcing, so that firms will have to hire to fulfill orders. Recent payroll employment data suggests that the job losses in technology are over, and that net new hiring may now be under way.

Although the extent of offshoring news may be overstating the current problem, the forces of globalization and cost minimization will continue to result in the relocation of many jobs, both blue- and white-collar, out of Massachusetts and out of the United States, especially when the products and services can be routinized. This is not a new phenomenon, but the pace may be accelerating, and it poses a challenge for both state and national economies. Massachusetts is well equipped to meet this challenge, and has even prospered in the face of these trends over the past couple of decades. The key is education.

While Business Activity Has Soared . . .

By almost any measure—for example, the national purchasing managers index or AIM's business confidence index for Massachusetts—business is doing quite well. This is especially true of production in the critical information-processing equipment sector. Although production data are not available at the state level, national indicators are exhibiting strong, sustained growth. Massachusetts producers are likely to be experiencing similar rates of growth. U.S. domestic investment in information and processing equipment rose at 12.1 percent annual rate of growth in the fourth quarter of 2003, and was 15.7 percent higher than the fourth quarter of 2002. These figures are in current dollars and so do not reflect advances in the technology itself, which would make these growth rates even higher. On the other hand, these figures do include imports, so may overstate the growth in demand for domestic producers. Industrial production of information and processing equipment, which does adjust for such quality changes, and only measures output of domestic producers, grew at a 3.4 percent annual rate in the three months ending in January, and was 5.2 percent greater than in January of 2003.

National output indicators for the computers and electronic-products industry, the largest manufacturing industry in Massachusetts in terms of employment, reflect the strength of business, consumer, and foreign demand for these products (see table 1). Shipments rose at an annual rate of 18.1 percent in the three-month period ending in

January, and were 15.1 percent greater than a year ago. Orders have also been strong. In the most recent three-month period ending in January, they fell from the prior three-month period, but only because orders in the August–October period were unsustainably high. In January, such orders were 10.0 percent higher than a year earlier. The inventory-to-sales ratio for this industry is at a record low.

The semiconductor industry is booming once again. Worldwide sales of semiconductors rose at a 35.2 percent annual rate in the three-month period ending in January. Sales to the Americas (primarily the United States) rose at an annual rate of 30.4 percent over the same period. The semiconductor-equipment industry is expanding even more rapidly, though from very depressed levels. Shipments from North American producers in January are up 32.8 percent from a year ago, and the annualized three-month rate of growth for the period ending in January was 85.1 percent. Bookings growth was even stronger, rising by two-thirds over the past year, and growing at an annual rate of 280 percent in the most recent three-month period ending in January.

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The boom in business is especially strong in these technology areas, and is being led by a surge in capital spending. Wider measures of output and business activity are more subdued, yet still reflect a robust recovery. Overall real U.S. gross domestic product grew at a 4.1 percent annual rate in the fourth quarter, and was up 4.3 percent over the fourth quarter of the prior year. The return of business spending on equipment is being fed by strong and accelerating growth in corporate profits. In the fourth quarter of last year, such profits were up 24.9 percent over the prior year; and up at an annual rate of 46.0 percent in the fourth quarter.

Companies doing business in Massachusetts appear to be exhibiting similar trends, and may even be doing better. The Bloomberg stock index for Massachusetts at the end of February was up two-thirds from a year earlier. This index tends to parallel the NASDAQ in performance, since both are weighted towards technology stocks (in the case of Massachusetts, because its economy is more concentrated in technology). Both indexes closed 2003 with about the same growth, 47.0 percent for the Massachusetts Bloomberg and 50.0 percent for the NASDAQ. Both these indexes grew about twice as fast last year as the broader-based Dow Jones Industrial Average or the Standard and Poor's 500 index. Recently, the Massachusetts Bloomberg index has outperformed the NASDAQ. For 2004 year to date (through March 12), the Bloomberg is up 8.4 percent, while the NASDAQ has fallen 0.9 percent.[1]

. . . Labor Markets Have Languished . . .

U.S. GDP is growing at rates comparable to the boom years of the late 1990s, yet U.S. payroll employment has been flat. Real GDP grew by 4.3 percent from the fourth quarter of 2002 to the fourth quarter of 2003, but payroll jobs eked out only a 0.1 percent increase in the year ending in February. The Massachusetts economy exhibited slower growth, but a similar pattern. The Massachusetts Current Economic index, a proxy for real gross state product, grew at an annual rate of 1.4 percent from its trough in May 2003 to January 2004, while state payroll employment declined at an annual rate of 1.2 percent over the same period. What accounts for the weak employment situation?

The answer is productivity. Over the same four-quarter period that GDP was growing by 4.3 percent, output per worker was growing by 5.3 percent. Productivity also accounts for the profit surge, as unit labor costs declined by 1.6 percent over this same time. (Prices have been stable.) Three factors account for these productivity gains: (1) the use of labor-saving technology through new equipment and software; (2) cost cutting through better organization of existing resources or increased work effort of existing workers; and (3) increased use of offshoring of tasks involving below-average productivity.

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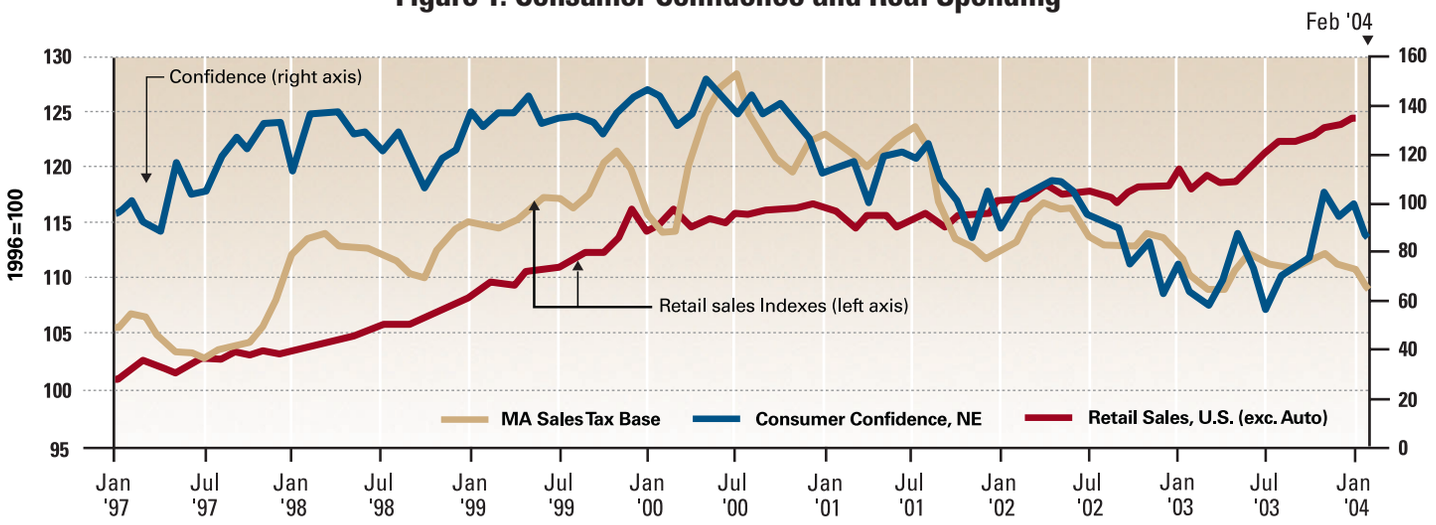
Of these three factors, offshoring has probably had the least impact so far in the jobless recovery, but it has received the most attention, because the pain is so visible. In addition, offshoring is no longer a threat felt solely by blue-collar workers. Highly paid professional jobs like computer programming are now being sent overseas. An increased rate of offshoring of software jobs is a reasonable explanation for the continued job losses in the software industry. In the last six months ending in January, the NAICS industry "software publishers" lost eight hundred payroll jobs in Massachusetts (seasonally adjusted), an annual rate of job loss of 8.4 percent. About the only sector that has lost jobs faster in the state in the last six months is textile mills, with

Figure 1. Consumer Confidence and Real Spending



Source: The Conference Board; Census Bureau; DOR; author's calculations. Retail sales indexes are deflated by the U.S. CPI.

an annualized rate of decline of 13.6 percent. Jobs in manufacturing, by comparison, fell at an annualized rate of 1.0 percent in Massachusetts over the same time period.

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. . . Leaving Households Wary

Personal-income growth in Massachusetts has lagged behind that of the United States, consistent with the state's weaker job performance. Massachusetts personal income grew 2.2 percent in the four-quarter period ending in the third quarter of 2003, slightly lower than the 3.2 percent growth for the United States over the same time period. Wage-rate growth in the state is returning back to "normal" levels after the collapse in 2001 related to the sharp drop in bonuses and realized stock options. Workers who have jobs are capturing a share of the productivity gains. Wage and salary disbursements per worker rose by 3.4 percent in Massachusetts in the year ending in January, versus 2.5 percent nationally.[2]

Massachusetts households, however, are clearly worried about the employment situation, and are holding back on spending. Sales taxes, excluding meals and motor vehicles, rose at a very slow annualized rate of 2.3 percent in the twelve-month period ending in February.[3] These taxes reflect spending on most consumer goods, excluding food and clothing. U.S. retail sales, on the other hand, grew at the annualized rate of 7.2 percent over the year ending in January.[4] The recession has hit Massachusetts harder in terms of jobs and income, and this situation is reflected in households' ability and willingness to consume (see figure 1).

Households' confidence, as measured by the Conference Board's consumer confidence index for New England, has been volatile in the past year. The overall measure jumped from 56.8 in July 2003 to 104.2 in November, and then fell back to 83.3 in February. Household opinions about current and future conditions reflect the dichotomy between business and labor-market conditions. The former have been good for households: rising stock markets and house values have increased household wealth. Perhaps for this reason, favorable opinions about future conditions have risen throughout 2003 and into 2004. In contrast, the volatility of current conditions appears to reflect news about, and experience with, employment conditions. Reports on impending improvement in the labor market raised hopes, which were dashed as the jobless recovery has continued. In February, the current-conditions component of the index stood at 49.7, barely 12 points higher than its low point in this recession back in March 2003. As recently as November, it had been as high as 103.3.

Around the Corner Once Again

Several indicators point to an improving condition of the labor market. Each on its own would carry little weight, because of the noisiness of the data, but taken together they are consistent with the expected effect on employment of a sustained growth in output.

First, the unemployment rate fell sharply, from 5.9 percent in December to 5.6 percent in January. It is difficult to discern how significant this drop is, given the rebenchmarking issues that make the December-to-January changes in its components unreliable. However, on face value, this is good news.

Second, revenues from withholding taxes in February were above expectations. This may be a prelude to a rise

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in payroll employment in February, or it may reflect a return to a more usual level of bonuses, many of which are received in the first quarter of the year, or it may reflect an improved efficiency of collection of taxes, drawing some revenues that would formerly have been received in March.

Third, initial unemployment claims in January remained below the critical level of forty thousand for the fourth month in a row. Although hiring may not have picked up yet, layoffs have drifted down to levels historically associated with rising employment.

Fourth, some key sectors of payroll employment that would be expected to lead an employment turnaround are turning up. One is temporary employment services, which grew at a 2.6 percent annualized rate over the last six months ending in January. Another is in manufacturing itself. This sector lost over 20 percent of its jobs since the payroll employment peak in January 2001. Over the most recent six months, the rate of job loss slowed to an annual rate of 1.0 percent. According to an alternative and more reliable seasonal adjustment process than the official method, payroll employment in manufacturing rose in January by 2,300 jobs, including an increase of 400 in the bellwether computer and electronics industry.[5] The rise in manufacturing employment may actually be greater than the payroll data suggest, since, according to anecdotes, manufacturing employers in the technology sector have been adding temporary workers. This is consistent with the rise in temporary-employment service jobs.

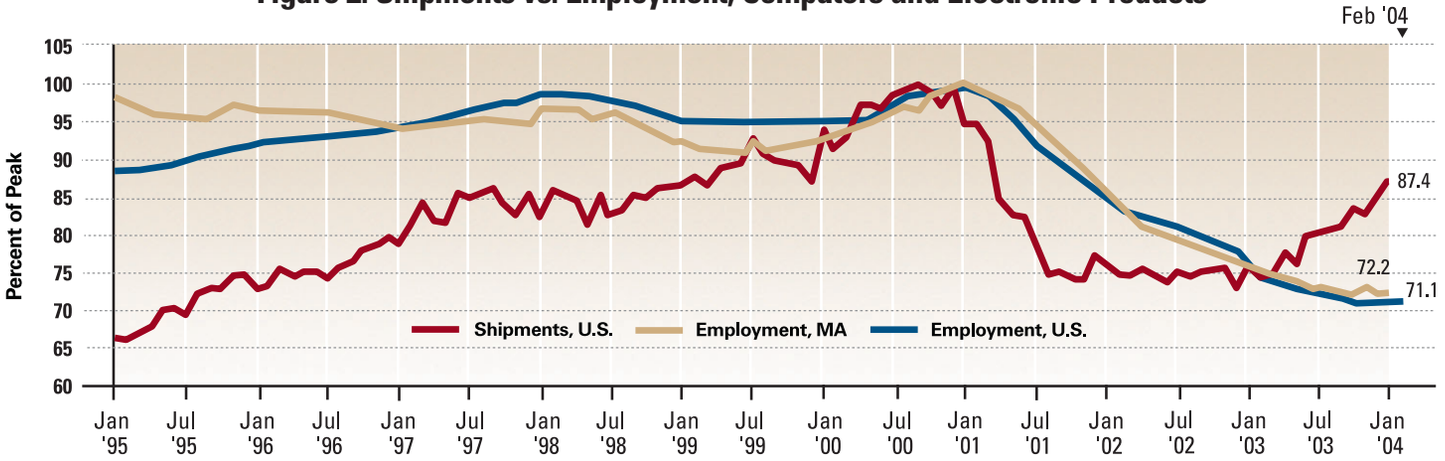
Fifth, the key technology-manufacturing industry, computers and electronic products, is at a point where it must hire additional workers to keep up with demand. As can be seen in figure 2, shipments and orders have risen briskly throughout 2003, while inventories have declined sharply, and unfilled orders have risen. At the national level (state data are not available), shipments in January were at 87.4 percent of the peak level of shipments in September 2000, while employment in February was only at 71.1 percent of its peak in January 2001. If the employment-to-shipments ratio was near its normal level in 2000, which seems reasonable, then this current difference of 16 percentage points suggests that employers are under great pressure to hire. Productivity growth would mean that the employment-to-shipments ratio should decline over time, but this difference is too large to attribute all of it to productivity gains.

While shipment data for Massachusetts are not available, the computers and electronic-products industry is large enough and diversified enough so that we might expect that conditions in the state are similar to those in the United States as a whole. State employment in this industry is now at 72.2 percent of its peak in December 2000. This industry may have just turned the corner. Payroll employment in this industry rose in January in Massachusetts, and rose, in both January and February, at the national level.

The Challenge Ahead

Even though the current hue and cry over outsourcing and off-shoring may be overblown and confounded with weak cyclical employment conditions, the trend to shift production to the lowest-cost areas of the globe is real, and can be expected to continue and intensify as the developing

Figure 2. Shipments vs. Employment, Computers and Electronic Products



Source: U.S. Census Bureau for Shipments; BLS for Employment

Even though the current hue and cry over outsourcing and offshoring may be overblown and confounded with weak cyclical employment conditions, the trend to shift production to the lowest-cost areas of the globe is real, and can be expected to continue and intensify as the developing world integrates itself in the global economy.

world integrates itself in the global economy. Will the Massachusetts economy be able to adapt, and how well will it cope with these trends?

These trends are not new. Massachusetts has been losing jobs and industries since colonial times. Owing to the westward movement of population and poor natural conditions, the state's agricultural base declined. In the latter half of the nineteenth century, it had a huge industrial base, dominated by textiles and apparel, which declined through most of the twentieth century. Nationally, manufacturing employment peaked in 1979. In Massachusetts, it peaked in 1943, during the war effort, at about 850,000. About 150,000 manufacturing jobs were lost between then and the end of the 1970s, and another 350,000 since then. In the 1970s and the early 1980s, average wage and salaries per worker were below the national average. The state was—and still is—a high-cost state in terms of doing business or living, with a cold climate, and is somewhat isolated from major transportation networks. Yet its economy thrived.

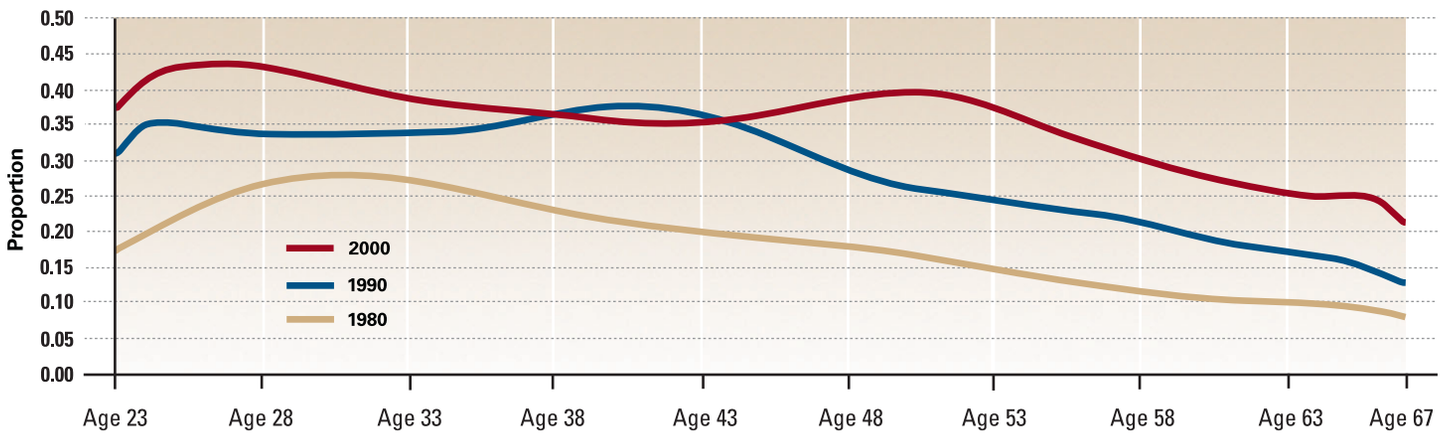
Beginning in the 1970s, as a direct result of the sharp rise in college attendance initiated by the baby-boom generation, the state experienced a fundamental change in its economy. The state was fortunate to have prestigious institutions of higher education that attracted students from around the country and world. Many students, after graduating, stayed to live and work. As a result, the educational attainment level of the state's population began to rise, as shown in figure 3, and to rise more rapidly than in other states. From a run-of-the-mill highly educated state in 1980 in terms of the proportion of its population with a four-year college degree—among the fifty states, it ranked sixth—it rose, educationally, to be the preeminent state, with a higher level of educational attainment than any of the other states.[6]

This concentration of a large, educated workforce enabled the state's economy to transform itself into a vibrant economy based on technology development and manufacturing, finance, medicine, and other "knowledge industries." During the last couple of decades, average wages and salaries per worker rose from 8 percent below the national average in the beginning of the 1980s to 20 percent above the national average today.

This educational advantage should serve the state's economy well in the coming decades. As globalization increases and world economic development proceeds, the world's supply of low-skilled labor will increase rapidly. Theoretically, this will lower the relative wages of the relatively abundant, low-skilled, and lowly educated workforce, and raise the relative wages of the relatively scarce, high-skilled, and highly educated workforce. Massachusetts should therefore be well-positioned to prosper in this environment.

This situation has pain as well as gain, however. Institutions and society will have to create new ways to adapt. The future economy will require lifelong learning, trade-

Figure 3. Proportion of Massachusetts Residents with a B.A. or Higher Degree, by Year and Age



Source: 1980, 1990, 2000 PUMS, U.S. Bureau of the Census

adjustment programs, and the need to switch jobs and professions several times in a career. Income inequality may also increase. These trends are already under way.

Notes

[1] In the period from the beginning of the year through March 12, the Dow Jones Industrial Average has lost 2.9 percent, while the S&P 500 has gained 0.8 percent.

[2] The Massachusetts data are based on a withholding-tax base derived from state withholding taxes, divided by payroll employment. The national data are wage and salary disbursements from the NIPA accounts divided by payroll employment.

[3] Based on a trend regression of a sales-tax base derived from sales taxes on tangible property and services. The sales-tax base seasonally adjusts and smoothes the monthly tax-collection data, but even then the data fluctuate significantly from month to month. The growth rate is from a linear regression of the logarithm of the monthly nominal sales-tax base on a constant and a time trend. This type of growth rate is less affected by monthly noise than that calculated using the same month in the prior year.

[4] For comparison, this growth rate was also calculated from a regression over the twelve-month period.

[5] The problems in the official, seasonally adjusted payroll data may not have been solved as part of the recent rebenchmarking. As an alternative, data on payroll employment, including the total, super sectors, and detailed series, are seasonally adjusted by the author using the Bureau of Labor Statistics' X12ARIMA procedure (with default options). The agreement between the official, seasonally adjusted data and the author's seasonally adjusted version is very close through September 2003, and then begins to diverge. In December, the author's version exhibited a substantially larger drop in employment than the official estimate (9,500 versus 4,300), whereas in January, the author's version exhibited an increase in employment of 7,100 versus an official drop of 5,500. The author's version of seasonally adjusted payroll employment in January was 6,800 above the official level.

[6] These ranks are based on the proportion of the resident population twenty-five years and older with a four-year college degree or higher. They exclude the District of Columbia, which has a substantially higher educational attainment due to its unique occupational structure.

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