

# Skills Gap: Where Are the Jobs?

VOLUME 4 ISSUE 1

AUGUST 2006



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## Report Focus

The Skills Gap Project: Does Massachusetts have enough workers today? Will there be enough workers in the future?

## Introduction

The first brief in this series (Research and Evaluation Brief Volume 3, Issue 1) looked at whether Massachusetts has and will continue to have sufficient workers, concluding that while there are enough workers available today, there is likely to be a shortage of workers in the future, even though there are people in Massachusetts currently seeking and/or available for work. In this brief we focus on the skills gaps due to continued growth in healthcare and education and the changing needs of employers. Our analysis shows high demand for healthcare occupations and for life, physical and social science occupations. The brief also explores the implications and potential steps to remedy the situation.

## What Skills Do Businesses Require?

To determine what skills Massachusetts employers currently need, we reviewed employment trends, industrial employment projections, and recent job vacancy data.

Employment trends over the past five years indicate that due to the recession a number of industry sectors have lost jobs, including manufacturing, professional and business services,

information, trade, transportation and utilities, government and finance. (Chart 1) However, selected industry sectors added jobs despite the recession—education, healthcare and social services, leisure and hospitality<sup>1</sup> and construction. Employment projections for 2005–2010, according to the New England Economic Project, indicate continued job growth in the education, healthcare and social services sector, and leisure and hospitality sector. Also expected to add jobs are professional and business services; trade, transportation and utilities; and finance sectors—regaining some of the jobs lost during 2000–2005. The construction sector is expected to lose jobs with rising interest rates and a weakening housing market and the information sector is expected to regain a modest number of jobs.

During 2001–2005 high paying major occupational groups that grew included—healthcare practitioners and technicians, business operations and finance, life, physical and social scientists—all requiring college education. Lower paying occupations that are growing include healthcare support occupations, personal care services, community and social services, as well as food preparation and serving.

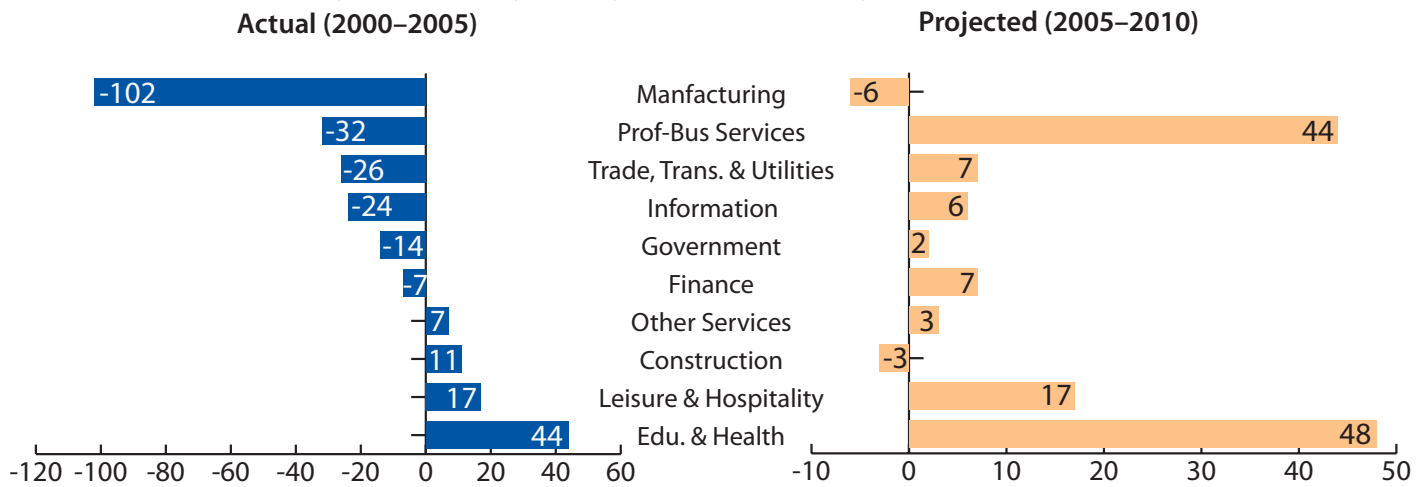
## Where are the jobs?

Massachusetts is one of a few states that conducts a job vacancy survey of employers twice a year.<sup>2</sup> The job vacancy survey provides considerable data on employer hiring needs by industry and occupation. An analysis of vacancy data for

1. Includes Hotels and Food Services, and Arts, Entertainment, and Media industries.

2. The survey is conducted in the second and fourth quarter every year by the Massachusetts Department of Workforce Development's Division of Career Services.

**Chart 1: Massachusetts Employment Change by Industry (thousands of employees)**



Source: Commonwealth Corporation analysis of New England Economic Project data

the period 2002–2005 indicates the persistence of vacancies in healthcare and social services and the growth of vacancies across industries as hiring picked up in 2004–2005. Healthcare, hotel and food services, retail trade and professional/technical services consistently had a large number of vacancies. Retail trade and hotel and food services have a larger share of temporary, part-time and seasonal jobs, and retail trade in particular shows a large number of vacancies in the fourth quarter due to seasonal demand. Though manufacturing employment continues to decline, there were a large number of job openings and manufacturers continued to have difficulty finding individuals with the required skill levels and experience.<sup>3,4</sup>

The best indicator of unmet need or high demand is the job vacancy rate, which is a measure of the share of jobs that are vacant. One industry that shows high vacancy rates has continued to grow through the recession and recovery—Healthcare and Social Assistance (3.7%). Professional and Technical

Services has the highest vacancy rate (4.18%). This sector includes biotech companies, scientific research and development companies, computer and data processing and other high value business professional services.

Occupational groups with the highest vacancy rates include healthcare practitioners and technical occupations (4.1%), life, physical and social scientists (4.3%), and healthcare support (3.4%).

Of these, healthcare practitioners and technicians; and life, physical and social science occupations, need college education and often require licensing and/or certification, so that it takes time before the supply of labor can adjust to meet the demand. These are also high paying occupations.

### Do we have a Skills Gap?

The skills required for sectors that have lost jobs and those required for growth sectors tend to be different. When we consider projections for 2005–2010 only two sectors, professional and business services and trade, transportation and utilities, are expected to regain jobs lost in the recession.

Manufacturing, which is losing the most jobs, represents 71% of all production jobs and 54% of all engineering and architecture jobs. Therefore displaced production workers are likely to have few opportunities in other sectors. On the other hand, growth sectors like education and healthcare have special-

**Table 1: Top Industry Sectors by Job Vacancy Rate**

Industry Sector	Massachusetts Vacancy Rate 4 <sup>th</sup> Quarter 2005	US Job Openings Rate
Professional & Technical Services	4.1%	4.3%
Retail Trade	4.1%	2.1%
Healthcare	3.7%	3.4%
Real Estate	3.4%	3.0%
Transportation and Warehousing	2.7%	2.1%
Total	2.6%	2.6%

Source: Massachusetts Job Vacancy Survey and the Job Openings and Labor Turnover Survey (JOLTS)

3. *In Tepid Job Scene, Certain Workers are in Hot Demand: 'Swiss Style' machinists Doing Ultra-Precision Tasks Typify Shortage of Skills*, Wall Street Journal, August 17, 2004, page A1.

4. *Keeping America Competitive—How a Talent Shortage Threatens US Manufacturing*, National Association of Manufacturers, Washington DC, 2005.

ized skill and licensing or certification requirements. Of all healthcare practitioners and technicians, 86% already work in the healthcare sector, and continued growth requires additional individuals with the required skills and credentials.

**Structural Changes in the Economy.** Our findings are consistent with long-term trends reflecting broad structural changes in the economy. The share of overall employment in manufacturing continues to decline while the share employed in services continues to increase. Technological innovation has driven changes in traditional industries and led to the emergence of new industries. In manufacturing, for instance, innovations have improved productivity enabling higher output with fewer workers.

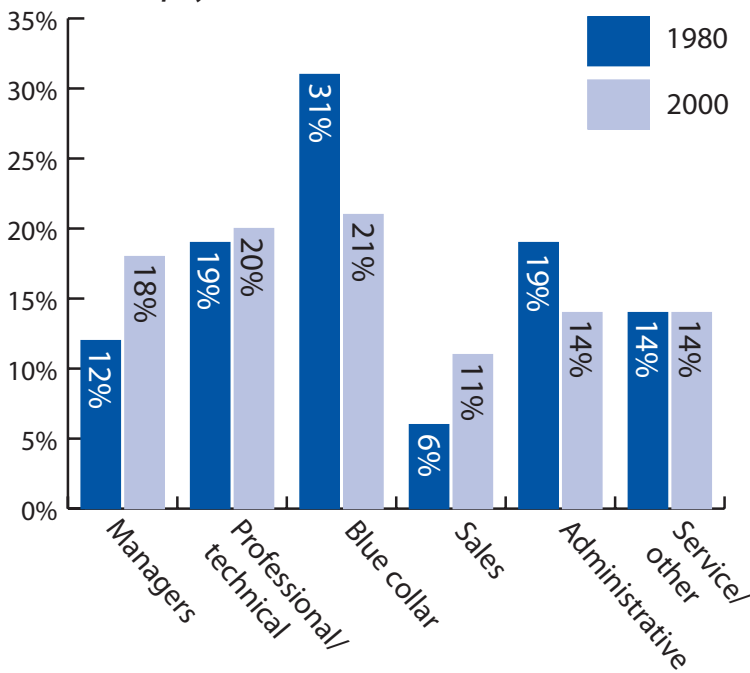
The changes in industrial employment have been accompanied by changes in the occupational structure of the workforce, with a decline in the share of well-paying blue collar and administrative support occupations and an increase in the share of higher paying professional/technical and managerial occupations. (Chart 2)

**How is the nature of jobs and employment changing?** In their recent book, *The New Division of Labor*, Murnane and Levy identified a broad pattern of changes in occupational composition reflecting changes in skills valued by employers in a wide-range of industries. Occupations that involve rou-

tine tasks that can be broken down into simple “rules-based” tasks and those involving manual labor are declining due to automation or outsourcing, and occupations that involve interaction with customers and fellow workers and require use of expert judgment and complex communication skills are growing. Levy and Murnane predict that not only will well-paid jobs will require advanced education, but even less well-paid jobs will require English language proficiency, good communication skills and a demonstrated ability to develop and maintain relevant “expert knowledge.” Even in industries losing employment such as manufacturing, technological innovation requires incumbent workers to upgrade their skills and education.

**Supply Pipeline Constraints** In healthcare the reasons for a supply-demand gap are more complex. Jobs in the healthcare practitioners and technicians occupational group typically require a college education and have licensing requirements that serve as barriers to entry. In addition, the supply of workers is constrained by the capacity of the educational pipeline and the time needed for the supply of labor to respond to additional demand for workers. Currently there is a severe shortage of registered nurses and an insufficient capacity in nursing programs, due to insufficient numbers of nursing faculty, among other factors. These supply constraints are made worse by the desire of hospitals for nurses with a four year degree.

**Chart 2: Massachusetts Occupational Employment Trends (% of total employment)**



Source: Geographic Profiles of Employment and Unemployment, Bureau of Labor Statistics and Occupations Employment Statistics

**Slow Growing and Aging Labor Force and Increasing Reliance on Immigration** A quarter of the foreign-born workers in Massachusetts do not speak English well and more than a quarter lack a high-school diploma or equivalent. Employers are concerned about replacing retiring baby-boomers, and at a time when skill, educational and communication requirements for many jobs are increasing, many entering the labor force lack the necessary preparation.

### What are possible implications?

As employers have difficulty filling jobs there are short-term and long-term implications. In the short-term, employers’ productivity or ability to service customers is affected while positions lie vacant. As employers increase wages to attract more workers their costs go up. As a result employers’ competitiveness is affected and there is a likely increase in the overall cost structure in the state and region. The long-term implications are that employers who have the choice of other locations may expand elsewhere. For employers that provide

5. More on this topic can be found in Commonwealth Corporation Research and Evaluation Brief, *Moving Out of Massachusetts*, Volume 1, Issue 14.

local services, the result is an increase in cost. It also affects the quality of services offered especially for regulated sectors such as health-care and education where there is limited or no ability to increase “prices.” In the long run this affects the competitiveness of the Massachusetts economy, and may lead to increasing income inequality, persistent structural unemployment, and the out-migration of workers to other parts of the country.<sup>5</sup>

## What can be done?

All these issues require a multi-faceted approach from policy-makers and workforce development practitioners that addresses changing educational and skill requirements, slow labor force growth, increased dependence on immigration, and a changing industrial structure.<sup>6</sup>

Over the long run, a learning and responsive workforce development system is required to provide an effective connection between business, education, CBO and public agencies through: improved access to information on emerging economic and industry trends; and programs that anticipate changing education and skills needs, and facilitate career transitions for both high-skilled and less-skilled displaced workers.

Next steps in the short-term include:

- Promote policies and programs to attract immigrant labor to help fill the need for workers in targeted industries and occupations.
- Develop programs that enable immigrant workers with specialized training credentials from other countries to obtain local credentials.
- Implement policies that encourage employers to continue to employ older workers.

Ultimately, longer-term investments in the educational infrastructure will be needed to improve the quality of education and increase the number of students completing high school and college:

- Quality, affordable education and training programs that develop the expert thinking and complex communication skills identified by Murnane and Levy are needed.
- Develop innovative programs, such as the Commonwealth Information Technology Initiative (CITI), to ensure that students gain basic knowledge in science and technology.
- Encourage economic development by strengthening the educational pipeline in lower cost regions of the state.
- Support alternative high school learning programs, apprenticeship and work-based learning, mentorship, career education and planning.

Long-term investments in the training infrastructure for those already in the workforce are needed to create opportunities for low-skilled, less-educated workers who are in low-paying jobs:

- Facilitate incumbent worker access to adult basic education (ABE) programs and strengthen ABE-to-college transition programs.
- Expand career advancement and education/training initiatives targeted at individuals holding positions paying less than family-sustaining wages.<sup>7</sup> These programs should build on existing models such as the Nursing Career Ladder Initiative and Extended Care Career Ladder Initiative and may be operated by employers in partnership with colleges and universities, community-based providers and other agencies.
- Provide incentives and resources for employers to implement workplace designs and programs that support skill development.

6. *Future Labor and Skill shortages Jeopardize American prosperity*, Employment Policy Foundation, Employment Forecast, Contemporary Issues in Employment and Workplace Policy, October 23, 2001.

7. JOLTS does not provide separate job openings rates for Administrative and Support Services or professional and technical services within the “Professional and business services sector.”

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are produced by Commonwealth Corporation  
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