

Labor Market Problems in Massachusetts
From the End of the Labor Market Boom in
2000 Through 2003

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Introduction

Effective workforce development policymaking and program planning at the state and local level are dependent on the availability of timely and statistically reliable information on labor market developments in the state and its local labor markets. Targetting of scarce training and employment-related education resources should be based on knowledge of how many individuals and which individuals are unemployed, underemployed, members of the labor force reserve, or working but unable to achieve an adequate income to support themselves or their families.¹ At the same time, the selection of specific industries and occupations for job training and placement efforts should be based on knowledge of current employment developments, the number of available job vacancies in industries and occupations across the state, and the characteristics of those jobs (skill requirements, wages, and benefits).

This paper is designed to track and assess key employment developments and unemployment, underemployment, and other labor market problems throughout the Commonwealth of Massachusetts from 2000 through calendar year 2003. The report is based on findings from several statewide surveys of employment, labor force, and unemployment developments, including the monthly Current Employment Statistics program and the monthly Current Population Surveys conducted by the U.S. Census Bureau for the U.S. Bureau of Labor Statistics. The authors have secured the public use micro-data files from the CPS surveys for Massachusetts to conduct these highly disaggregated analyses. To place the findings for Massachusetts in perspective, we frequently will compare results for our state with those for the New England region and the entire nation over the same three year period.

Our paper will begin with an overview of payroll employment developments in Massachusetts from the labor market boom year of 2000 through calendar year 2003. Some of the payroll employment survey's findings will be extended through the first two months of calendar year 2004. This employment review will be followed by an analysis of key unemployment developments in our state over the 2000-2003 period, including analyses of the changing durations of the unemployment spells faced by jobless workers and the changing incidence of permanent job displacement problems among the unemployed. Trends in the

¹ The numbers and the demographic and socioeconomic characteristics of target groups will vary dramatically by type of labor market problem. The labor force reserve consists of those individuals who wish to be employed but are not actively looking for work. Estimates of the number of persons in the labor force reserve in Massachusetts in recent years will be presented in a following section of this paper.

magnitude and character of unemployment problems will be followed by an analysis of underemployment problems and other labor underutilization problems including the labor force reserve. Changes in the incidence of each of these three types of labor underutilization problems across educational subgroups of the resident labor force of the state over the past three years will be highlighted. The final two sections of the paper will be devoted to a brief review of changes in multiple job-holding rates across the state since 2000 and the potential implications of our findings for the design of future workforce training initiatives in the Commonwealth.

Employment Trends in Massachusetts and the U.S., 2000 to 2003

The ability of employment related education and training programs to boost the employability and earnings of program participants is dependent in large part on new job opportunities made available in the labor market. After experiencing substantial growth in payroll employment between 1992 and 2000, the Massachusetts economy saw job growth come to an immediate halt in early 2001, and job losses have piled up over the past three years.² Knowledge of the magnitude and character of these employment development is critical for the design of current workforce development initiatives in our state. There are two monthly surveys that are used by the U.S. Bureau of Labor Statistics and the Massachusetts Department of Employment and Training to track employment developments in the U.S. and Massachusetts. The first is the monthly Current Population Survey (CPS), a national survey of nearly 60,000 households conducted by the U.S. Census Bureau for the U.S. Department of Labor's Bureau of Labor Statistics.³ Approximately 1,200 households are interviewed each month in our state. The CPS survey collects monthly labor force data from all household members 16 and older. The findings of the national CPS survey are used to produce monthly estimates of the numbers of working-age individuals who are employed and unemployed and the nation's unemployment rate. The second national and state monthly survey is called the Current Employment Statistics (CES) survey. Nationally, the CES survey collects data from 390,000 non-farm businesses and government agencies. A similar survey is conducted at the state level by the Massachusetts

² Between 1992 and 2000, annual average nonfarm wage and salary employment in Massachusetts increased by 525,000 or nearly 19%, see: Andrew Sum, Paul Harrington, et.al., *The State of the American Dream in Massachusetts: 2002*, Massachusetts Institute for A New Commonwealth, Boston, 2002.

Department of Employment and Training. The CES program collects data on wage and salary employment, weekly hours of work, and hourly and weekly earnings of workers on the non-farm payrolls of private firms and government agencies. In this paper, we have used employment estimates from both surveys and unemployment/underemployment data from the CPS to track recent labor market developments in Massachusetts, the New England region, and the U.S.

The rate of job creation in the U.S. and Massachusetts during the 1990s was quite remarkable. The nation created 22.8 million net new non-farm wage and salary jobs between 1992 and 2000. Every state in the nation experienced double digit growth in the number of their non-farm jobs during this time period. Massachusetts alone created more than one-half million additional non-farm jobs between 1992 and 2000. This remarkable rate of non-farm employment growth came to an immediate halt in Massachusetts in early 2001 at the same time that the national recession began. Despite the fact that the national recession officially ended more than two years ago in November 2001, the state's overall employment situation remains fairly bleak even today. Massachusetts has not been able to generate any net new wage and salary jobs for its workforce over the past two years during which the nation has experienced recovery from the national recession.

Estimates of non-farm wage and salary employment changes in the U.S., New England, and Massachusetts between 2000 and 2003 are displayed in Table 1. The data represent annual averages for both years. For the U.S., payroll employment in 2003 was 1.633 million below its level in 2000, representing a decline of 1.2%. Even in December 2003, non-farm wage and salary employment in the U.S. was still 800,000 below its level in November 2001 at the bottom of the 2001 recession. New England was harder hit by these economic changes than the nation. Regional payroll employment in 2003 was only 6.862 million or 155,000 below its 2000 level, a decline of 2.2%. Massachusetts was the state most adversely affected. Payroll employment in our state in 2003 was 137,000 or 4.1% below its level in 2000. This rate of job loss was three and one-half times higher than that for the nation over the same three year period.

³ For a review of the employment concepts and measures and the design features of these two surveys, see: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, December 2003, "Appendix A and B", Washington D.C., 2004.

Table 1:
Trends in Non-Farm Wage and Salary Employment in the U.S., New England, and
Individual New England States, 2000 to 2003
 (Numbers in 1000s, Annual Averages)

State/Region	2000	2003	Absolute Change	Percent Change
Massachusetts	3,323	3,186	-136	-4.1
New England	7,017	6,862	-156	-2.2
U.S.	131,743	130,110	-1,633	-1.2

Source: Current Employment Statistics (CES) programs, U.S. Bureau of Labor Statistics and State Workforce Information agencies.

The actual magnitudes of the payroll job losses in Massachusetts are even worse than depicted in Table 1. Payroll employment grew strongly throughout calendar year 2000 and did not peak until early 2001. In January and February of 2001, there were 3.372 million wage and salary jobs in Massachusetts, but during the same two months of 2004, payroll employment had declined to 3.157 million, a decline of 215,000, or 6.4%.⁴ The rate of job loss in Massachusetts over this three year period was the highest in the nation, a dubious achievement for the state.

Table 2:
Trends in Non-Farm Wage and Salary Employment in Massachusetts,
January-February 2001 to January-February 2004
 (Numbers in 1000s, Seasonally Adjusted)

	(A)	(B)	(C)	(D)
	January/ February 2001	January/ February 2004	Absolute Change	Percent Change
Employment Level	3,372	3,157	-215	-6.4

What is somewhat puzzling, however, is why the official unemployment rate of the state has not risen far more than has been estimated over the past three years. During January-February of 2001, the unemployment rate of the state (seasonally adjusted) was estimated to be between 2.7 and 2.8 percent. During the first two months of 2004, the state's unemployment rate averaged 5.5 percent, representing an increase of 2.7 percentage points over 2001. How can we explain such a comparatively low unemployment rate given a loss in payroll employment of

⁴ For recent media coverage of the payroll employment declines in the state, See: (i) Stephen J. Glain, "State tops U.S. in Job Loss Rate," *The Boston Globe*, March 11, 2004, pp. E-1, E-3; (ii) Robert Gavin, "Loss of Jobs Greater than Estimated," *The Boston Globe*, February 28, 2004, pp. D-1, D-2.

6.4% and an estimated rise in the resident civilian labor force of 72,000 or 2.2 percent over the same time period. Given these two developments, one would have expected the unemployment rate of the state to have risen to 11% by January/February of 2004. This unemployment rate is considerably higher than the official, average 5.5% unemployment rate for this two month period.

In a series of earlier papers, the authors have attempted to explain the sizable gaps between the national CPS and CES surveys' estimates of employment change in the nation between the bottom of the recession (November 2001) and early 2004.⁵ The CPS household survey has shown a rise in total civilian employment of more than 2.3 million between the first quarter of 2002 and the fourth quarter of 2003 while the payroll survey revealed a decline of approximately 520,000 non-farm wage and salary jobs over the same time period.⁶ This gap of more than 2.8 million between these two employment growth estimates was historically unprecedented. We have argued, unlike many other labor market analysts including those at the Federal Reserve Bank in Washington, D.C., that both of the national surveys are telling us important results. More people across the nation are working today than indicated by the CES payroll survey. These additional employed persons include the self-employed, independent contractors employed by a wide array of industries, and persons working off the books; i.e., under the table. The number of workers reporting themselves on self-employed in January/February 2004 was nearly one million greater than at the trough of the national recession in the late fall of 2001. These self-employed incorporate a wide variety of individuals, including classic entrepreneurs attempting to establish new businesses, professionals/managers/blue collar workers who are working on their own after being displaced from their former career jobs, and early retirees who are working part-time on their own after accepting early retirement from their former employers, both private and public.

In Massachusetts, the gap between the CES estimates of payroll employment declines since the beginning of 2001 and the first two months of 2004 and those of the Local Area Unemployment Statistics System (LAUS) is the largest in the country in relative terms. While

⁵ See: Paul Harrington and Andrew Sum, *Getting the Job Story Right: Reconciling the Differences Between the Payroll and Household Surveys' Estimates of Employment Change Since the End of the 2001 Economic Recession*, Center for Labor Market Studies, Northeastern University, Boston, March 2004.

the CES survey reveals a decline of 215,000 payroll jobs in Massachusetts between the first two months of 2001 and 2004, estimates from the LAUS system indicate that total employment of working-age residents has declined by only 22,000 over the same time period. The gap of 193,000 between the two estimates of employment change over this three year period is extremely high and historically unprecedented. Part of the gap can be explained by changes in self-employment and independent contractor employment in the state and by a reduction in multiple job holding over the past few years, but there are important unexplained parts of the gaps that require further research.⁷

The absence of any net new growth in national payroll employment over the past few years is also somewhat perplexing, given the renewed growth in national real output since early 2002 and the strong growth in the real GDP of the nation in the last two quarters of calendar year 2003. An important research question is the following: why despite renewed economic growth, are the nation's employers not adding any new jobs to their payrolls in the current recovery? There are several important labor market developments in recent years that likely influenced these results. The first is rapidly rising labor productivity: employers are securing, if not squeezing, more work from their existing workforce, thus, they have not had to add any net new workers on to their formal payrolls so far. A second factor is the rise in self-employment and temporary workers, including the hiring of contract workers by many companies, to meet their current production needs. These self-employed persons and contract workers are not counted on the official payrolls of employers, thus, the CES employment numbers at both the national and state level are understating the true growth in overall employment. The third is the much talked about labor market phenomenon by the media and policymakers in recent months: labor outsourcing.⁸ Outsourcing of U.S. jobs, including white collar positions, to foreign countries has

⁶ See: (i) Andrew Sum, Paul Harrington, Paulo Tobar, and Ishwar Khatiwada, *The Unprecedented Rising tide of Corporate Profits and the Simultaneous Ebbing of Labor Compensation: Gainers and Losers from the National Economic Recovery in 2002 and 2003*, Center for Labor Market Studies, Northeastern University, March 2004.

⁷ As revealed in a latter section of this paper, a decline in multiple jobholders of 30,000+ between 2000 and 2003 has taken place in our state. A person losing one of his/her multiple jobs would reduce CES payroll employment but leave CPS employment unchanged.

⁸ To review current evidence and alternative views on this issue of labor outsourcing, see: (i) Stephen Baker and Manjeet Kriplani, *Will Outsourcing Hurt America's Supremacy?* Business Week, March 1, 2004, pp. 82-95; (ii) Jyoti Thottam, *Is Your Job Going Abroad?* Time, March 1, 2004, pp. 26-36; (iii) *The New Job Migration*, The Economist, February 21, 2004, pp. 11; (iii) Edward Alden and Dan Roberts, *Bush Labels Democratic Critics of Outsourcing 'Isolationists'*, Financial Times, March 10, 2004, pp. 1. (iv). *A Heftier Dose to Swallow: Rising Cost of Health Care in U.S. Gives Other Developed Countries an Edge in Keeping Jobs*, Washington Post, March 6, 2004. (v) Christopher A. Novak, Mathew F. Kazmierczak, and William T. Archey, *Offshore Outsourcing In An*

been widely cited as a factor contributing to the lack of non-farm job growth in the U.S.; however, the exact impact of outsourcing on U.S. job losses is not yet clear due to the absence of any systematic and timely data on this phenomenon. It is clearly a factor and contributes in an important manner to estimates of labor productivity growth, but much more needs to be known about this phenomenon.

Knowledge of changes in payroll employment by industrial sector in Massachusetts is critical to workforce development planning. Which sectors have been shedding labor and which ones, (though few) are adding new workers?

Most industrial sectors in Massachusetts, with the exception of construction, educational and health services, leisure and hospitality, and other services, experienced declines in wage and salary employment between 2000 and 2003. The size of these job declines ranged from lows of 2 percent in the financial sector and government services to highs of 18 percent in information services and 20 percent in manufacturing. The largest absolute and relative decline in wage and salary employment occurred in the manufacturing sector. The state's manufacturing sector alone lost 82,000 wage and salary jobs between 2000 and 2003 (Table 3). Both manufacturing and information services were major export oriented industries. Thus, job losses in these sectors had multiplier effects on the rest of the economy.

Increasingly Competitive and Rapidly Changing World: A High-Tech Perspective, Prepared by American Electronics Association (AEA), March 2004. (vi) Jacob Kirkegaard, *Outsourcing- Stains on the White Collar?*, Institute for International Economics, February 2004. (vii) James Cooper, *The Price of Efficiency: Stop Blaming Outsourcing. The Drive for Productivity Gains Is the Real Culprit Behind Anemic Job Growth*, Business Week, March 22, 2004. (viii) Hal Varian, *Economic Scene: Information Technology May Have Cured Low Service-Sector Productivity*, New York Times, February 12, 2004. (ix) Ashok Deo Bardhan and Cynthia A. Karoll, *The New Wave of Outsourcing*, Fisher Center for Real Estate and Urban Economics, University of California, Berkeley, Fall 2003. (x) *The Impact of Offshore IT Software and Services Outsourcing on the U.S. Economy and the IT Industry*, Global Insight (USA), Inc, March 2004. (xi) Michael Schroeder, *Outsourcing May Create U.S. Jobs*, Wall Street Journal, March 30, 2004, pp. 2. (xii) Robert Gavin *Treasury Chief Calls Outsourcing a Plus for U.S.*, The Boston Globe, March 31, 2004.

Table 3:
Trends in Non-Farm Wage and Salary Employment in Massachusetts by
Major Industry, 2000 to 2003
 (Numbers in 1000s, Annual Averages)

Industry	2000	2003	Absolute Change	Percent Change
Total Non-Farm	3,323	3,186	-136	-4.1
Construction	129	137	8	6.2
Manufacturing	408	326	-82	-20.0
Trade, Transportation, and Utilities	597	573	-24	-3.9
Information	111	91	-20	-17.7
Financial Activities	228	224	-4	-1.9
Professional and Business Services	493	437	-56	-11.3
Educational and Health Services	546	575	30	5.4
Leisure and Hospitality	275	287	13	4.6
Other Services	111	117	6	5.7
Government	425	416	-8	-2.0

Source: Current Employment Statistics (CES) programs, U.S. Bureau of Labor Statistics and State Workforce Information agencies.

Trends in the Levels and Rates of Unemployment in Massachusetts, 2000 to 2003

Strong economic and labor market conditions from the mid to the late 1990s in Massachusetts helped to substantially reduce both the level and rate of unemployment in the state. The annual average number of unemployed persons in Massachusetts in 2000 was 89,000, representing only 2.6 percent of the state's civilian labor force compared to a 4.0 percent unemployment rate for the entire nation (Tables 4 and 5). The 2.6 percent unemployment rate in Massachusetts in 2000 was the lowest in the past thirty-four years for which such CPS-based unemployment data for the state have been available. The Massachusetts unemployment rate in calendar year 2000 ranked fourth lowest among the 50 states in the U.S.

Labor markets in Massachusetts unfortunately began to deteriorate in early 2001, with losses occurring in wage and salary jobs that accelerated over the next two years. The number of unemployed in Massachusetts rose substantially from 89,000 in calendar year 2000 to nearly 203,000 in 2003, an increase of 127 percent during this three year period versus only a 54 percent increase for the nation as a whole. (Table 4). The unemployment rate in Massachusetts rose to 5.8 percent in 2003 compared to only a 2.6 percent rate in 2000. The state's unemployment rate ranked 29th in 2003 versus 4th lowest in 2005 (Table 5).

Table 4:
Number of Unemployed in the U.S., New England, and Massachusetts, 2000-2003
(Annual Averages)

State/Region	2000	2003	Absolute Change	Percent Change
Massachusetts	89,118	202,686	113,568	127.4
New England Total	201,407	411,937	210,530	104.5
U.S. Total	5,725,033	8,851,809	3,126,776	54.6

Source: Current Employment Statistics (CES) programs, U.S. Bureau of Labor Statistics and State Workforce Information agencies.

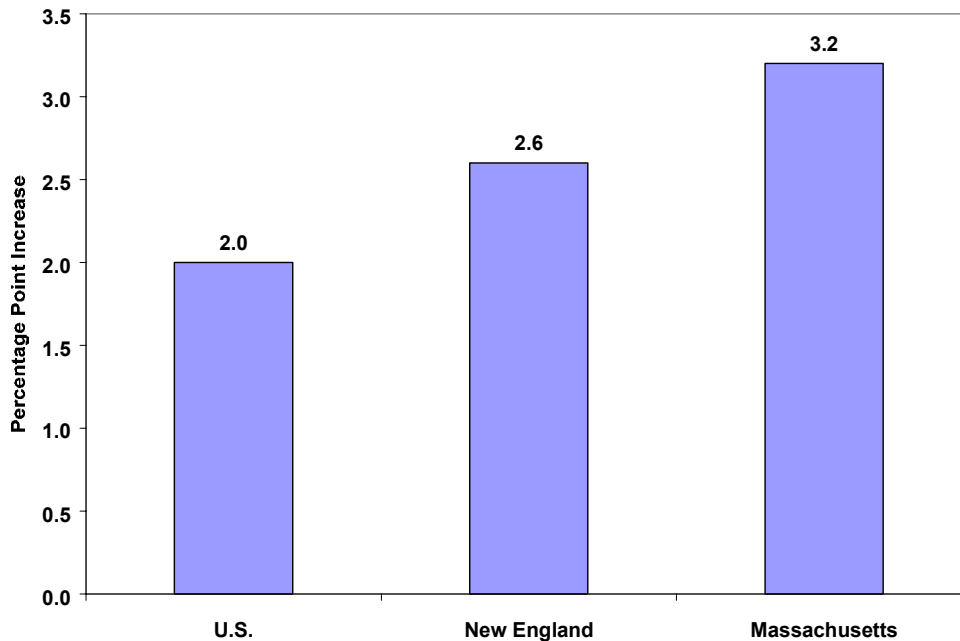
Clearly, unemployment problems in Massachusetts have increased at a far more rapid pace over the past three years than they have nationally. Massachusetts experienced an absolute increase of 3.2 percentage points in its unemployment rate between 2000 and 2003 compared to a 2.6 and 2.0 percentage point rise for the New England region and the entire nation, respectively. (Chart 1).

Table 5:
Trends in Unemployment Rates in the U.S., New England, and Massachusetts, 2000-2003
(Annual Averages in Percent)

State/Region/Country	2000	2003	Percentage Point Change
Massachusetts	2.6	5.8	+3.2
New England	2.8	5.4	+2.6
U.S.	4.0	6.0	+2.0

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

Chart 1:
Percentage Point Increases in Unemployment Rates in the U.S.,
New England, and Massachusetts, 2000 -2003



The Rising Numbers of Unemployed, Dislocated Workers in Massachusetts, 2000-2003

The deterioration in overall labor market conditions in Massachusetts and the nation between 2001 and 2003 has left a large number of workers without jobs. The types of unemployment problems experienced by unemployed persons in 2003 in our state are quite different from those encountered by their counterparts in 2000, especially in terms of the average durations of their unemployment spells and the reasons for becoming unemployed. There has been a steady rise in the number of permanent job losers or dislocated workers in Massachusetts in the past three years. These are individuals who became unemployed as a result of their job becoming permanently eliminated. This group of unemployed is frequently referred to as “dislocated workers”. The number of unemployed, dislocated workers in Massachusetts more than tripled from 26,000 in 2000 to 84,000 in 2003, an increase of 226% in three years, surpassing the growth rate of 155% in the number of dislocated workers for the entire U.S. The growth rate of dislocated workers in the entire New England region between 2000 and 2003 was 234%. (Table 6).

Table 6:
Trends in the Number of Unemployed Permanent Job Losers in the
U.S., New England, and Massachusetts, 2000-2003
(Annual Averages)

State/Region/Country	2000	2003	Absolute Change	Relative Change
Massachusetts	26,346	85,850	59,504	225.9
New England	48,360	161,712	113,352	234.4
U.S.	1,123,751	2,869,599	1,745,848	155.4

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

What percent of all unemployed workers in Massachusetts were permanent job losers or dislocated workers in the past few years? Our estimates for Massachusetts are displayed in Table 7. Forty-two percent of all of the unemployed in 2003 were permanent job losers, representing an increase in their share of all unemployed persons of 13 percentage points since 2000. Many of these permanent job losers tend to experience greater difficulties in finding immediate re-employment, thereby lengthening the average durations of their unemployment spells, and they often incur larger wage losses when they do become re-employed. The sharp rise in the number of unemployed, dislocated workers in need of re-employment services also has placed greater strains on the state and local workforce development system in our state and region.

Table 7:
Percent of Unemployed Who Were Permanent Job Losers in the U.S.,
New England, and Massachusetts, 2000 to 2003

State/Region/Country	2000	2003	Percentage Point Increase
Massachusetts	29.6	42.4	+12.8
New England	24.0	39.3	+15.2
U.S. Total	19.6	32.4	+12.8

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

Trends in the Average Durations of Unemployment Spells in Massachusetts

Another key characteristic of the unemployment problems faced by workers is the average duration of their on-going spells of unemployment; i.e., the consecutive number of

weeks that they have been unemployed.⁹ The “average” duration of unemployment spells can be measured in two different ways: the median or the mean duration. The median duration is that duration of unemployment which divides the distribution of unemployment spells into two equal groups. One half of the unemployed have a duration less than the median, and the other half have an unemployment spell that is longer than the median. The mean duration of unemployment is that duration which represents the simple arithmetic average of the durations of the unemployment spells faced by all of the unemployed. If the distribution of the durations of unemployment spells was normal, then the median and the mean would be identical. Such is not the case, however, either nationally or in Massachusetts. The distribution of unemployment spells tends to be substantially skewed to the right. This skewness in the distribution raises the mean duration well above the median duration of unemployment implying that the probability of becoming re-employed decreases sharply as the duration of unemployment increases. In both Massachusetts and the U.S., the mean duration of unemployment spells has typically been twice as high as the median in recent years (Table 8). For example, in 2003, the median duration of unemployment spells in Massachusetts was only 12 weeks versus 21 weeks for the mean duration.

Table 8:
Mean and Median Durations of Unemployment Spells in the U.S.,
New England, and Massachusetts, 2000 to 2003
(Numbers in Weeks)

State/Region	Mean Duration			Median Duration		
	2000	2003	Change	2000	2003	Change
Massachusetts	11	21	+11	6	12	+6
New England	11	20	+9	6	11	+5
U.S.	13	19	+6	7	10	+3

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

In Massachusetts, both the median and mean durations of on-going unemployment spells have nearly doubled over the past three years. In calendar year 2000, the mean duration of

⁹ For earlier national and state reviews of the changing durations of unemployment in recent years, see: (i) “Another Bush, Another Jobless Recovery”, *The Economist*, May 20, 2003, pp. 25-26; (ii) Daniel Kadler, “Where Did My Raise Go”, *Time*, May 20, 2003, pp. 44-45; (iii) Ed Mason, “Hard Core Jobless Soar in Bay State”, *Boston Business Journal*, February 3, 2003; (iv) Andrew Sum and Ishwar Khatiwada with Sheila Palma. *The Impacts of the 2001*

unemployment spells in Massachusetts was only 11 weeks; however, by 2003, the mean duration had risen to 21 weeks, two weeks higher than the national mean duration of unemployment of 19 weeks. This finding indicates the existence of greater difficulties faced by the recent unemployed in securing re-employment due to deteriorating labor market conditions over the past three years that have reduced the number of job offers made available to them.

Trends in the Numbers of Long Term and Hard Core Unemployed in Massachusetts, 2000-2003

The data on the durations of on-going spells of unemployment are used by the U.S. Bureau of Labor Statistics and other labor market analysts to classify the unemployed into various categories based on the length of their current unemployment spells. Those persons unemployed for 15 weeks or longer are frequently referred to as the long term unemployed while those continuously out of work for 27 weeks or longer are often classified as the very long term or hard core unemployed. Typically, after collecting 26 weeks of unemployment benefits, the insured unemployed will exhaust their unemployment benefits unless the U.S. Congress enacts legislation to extend the length of such benefits. As of March 2004, there was no such extended UI benefit legislation. Findings on the numbers of unemployed workers with unemployment spells longer than 15 and 27 weeks in the U.S., New England, and Massachusetts are displayed in Tables 9 and 10.

During the historically low unemployment year of 2000, there were only 17,000 long-term unemployed persons in Massachusetts, representing a long-term unemployment rate of only 0.5%. However, by 2003, the number of long-term unemployed in the state had risen to 89,000, a 412 percent increase in their numbers compared to a 156 percent increase in the long-term unemployed for the entire nation (Table 9).

Table 9:
Trends in the Number of People Unemployed for 15 Weeks or Longer in the
U.S., New England, and Massachusetts, 2000 to 2003
(Annual Averages)

State/Region/Country	2000	2003	Absolute Change	Relative Change
Massachusetts	17,277	88,513	71,236	412.3
New England	38,860	179,007	140,147	360.6
U.S.	1,337,717	3,425,986	2,088,269	156.1

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

The number of unemployed workers in Massachusetts who have been out of work for more than six months also has skyrocketed over the past three years. In calendar year 2000, on average, there were only 8,000 hard core unemployed persons in the state, representing a hard core unemployment rate only slightly higher than 0.2%. Their numbers, however, rose to 54,000 during 2003, an increase of 597 percent, substantially surpassing the growth rate of this unemployed group for the entire nation (156 percent), a dramatic turnaround in the state's labor market fortunes (Table 10).

Table 10:
Trends in the Number of People Unemployed for 27 Weeks or Longer in the
U.S., New England, and Individual New England States, 2000 and 2003
(Annual Averages)

State/Region/Country	2000	2003	Absolute Change	Percent Change
Massachusetts	7,777	54,237	46,460	597.4
New England	18,328	100,912	82,584	450.6
U.S.	1,337,717	3,425,986	2,088,269	156.1

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

The above findings clearly reveal that the sharp rise in the average durations of unemployment has been a key factor underlying the steep rise in the unemployment rate of the state over the past three years. While the pool of individuals entering the ranks of the unemployed during any given year has clearly risen, the problem is intensified by their far greater difficulty in leaving the ranks of unemployed due to the absence of job growth in the state.

The Rise in Underemployment Problems in Massachusetts and the U.S., 2000-2003

A second type of labor market underutilization problem takes the form of underemployment.¹⁰ One category of underemployment captured by the CPS household surveys consists of individuals who are employed part-time for economic reasons; i.e., slack work in their firms, material shortages, or an inability to find a full-time job. Persons working part-time for economic reasons typically average only 21-22 hours of paid work per week, only half of the average hours worked by the full-time employed. Their considerably lower weekly hours of work substantially reduce their weekly wages and their contribution to the output of their firms and the economy, thereby lowering the nation's Gross Domestic Product and the state's Gross State Product (GSP).

Underemployment problems in Massachusetts declined considerably during the labor market boom from 1992 to 2000. By 2000, on average, only 55,000 workers were working part-time for economic reasons each month, accounting for only 1.7 percent of all employed workers in the state. Underemployment problems in the past three years have intensified in Massachusetts, with the annual average number of workers employed part-time for economic reasons rising to 81,000 in 2003, a 47 % increase, matching the national growth rate in the number of underemployed over the same three year period (Table 11). These underemployed workers' share of the total number of employed workers rose to 2.5 percent in 2003. An additional important point to note here is that some of these underemployed workers may have been contract workers and under the table workers not on the official payrolls of their employers. They would be counted as employed in the CPS household survey and in the LAUS employment statistics, but would not appear on the wage and salary payrolls of employers in the CES survey. Thus, the rise in underemployment in the state since early 2001 may account for part of the large

¹⁰ Another type of underemployment problem involves people working in jobs that do not fully utilize their existing skills or education. This problem often has been referred to as "mal-employment" or "over-education" in the human resource literature. Problems of mal-employment or over education reduce the productivity and earnings of these workers. For a discussion of mal-employment concepts and measures, see: (i) Frederick Harbison, *Human Resources as the Wealth of Nations*, Oxford University Press, New York, 1973; (ii) Andrew Sum and Neeta Fogg, *Measuring and Analyzing Labor Market Problems at the State and Local Level*, National Labor Market Information Training Institute, Washington, D.C., 1997.

gap between the employment change estimates of the LAUS and CES surveys in our state over the past few years.¹¹

Table 11:
Comparisons of the Numbers of Persons Employed Part-Time for
Economic Reasons in the U.S., New England, and Massachusetts, 2000 and 2003
(Annual Averages)

State/Region/Country	2000	2003	Absolute Change	Percent Change
Massachusetts	54,825	80,612	25,787	47.0
New England	128,166	206,145	77,979	60.8
U.S. Total	3,194,478	4,705,717	1,511,239	47.3

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

The Labor Force Reserve in Massachusetts and the U.S., 2000-2003

The civilian labor force estimates from the CPS household surveys include the employed and the unemployed. Some of those persons not counted as members of the active labor force may, however, wish to be employed even though they are not actively seeking work. Each month, the CPS survey captures information on the current job desires of those persons who are not actively participating in the labor force. Those persons who reply “yes” or “maybe” to the question on their desire for immediate employment are classified as members of the labor force reserve.¹² Past evidence at the national and regional level suggests that many of the members of the labor force reserve could be enticed to join the labor force if suitable job opportunities were made available to them.

The size of the pool of individuals in the labor force reserve in Massachusetts and the U.S. previously has been found to be cyclically sensitive, rising during periods of increasing unemployment and falling job opportunities and declining during periods of strong job growth and declining unemployment. In 2000, at the peak of the state labor market boom, there were only 56,000 members in the labor force reserve in Massachusetts, representing 3.6 percent of the persons not active in the labor force during that year compared to nearly 6 percent for the entire

¹¹For a more detailed discussion of this phenomenon, see: Andrew Sum, Paul Harrington, Ishwar Khatiwada, et.al., “Employment Developments in the U.S. Since the End of the Recession of 2001: Conflicting Tales from Two National Surveys”, Center for Labor Market Studies, Northeastern University, November 2003.

¹² The labor force reserve is substantially different from the count of the discouraged workers who are a small subset of the labor force reserve. Some analysts loosely use the “discouraged worker label” to describe the labor force reserve.

nation. Since the end of the labor market boom in early 2001, the number of working-age persons who are members of the labor force reserve in Massachusetts has risen. During 2003, the labor force reserve in Massachusetts is estimated to be 74,000, representing a 32% increase from 2000 levels, surpassing the national growth rate for this group during the same time period (9%) (Table 12). This evidence clearly indicates that depressed labor market conditions in the state in recent years have discouraged a growing number of working-age teens and adults from actively looking for work. There is, thus, a growing pool of underemployed in the state whose numbers are not captured by the official unemployment statistics. Many of these individuals could benefit from employment and training services.

Table 12:
Size of the Labor Force Reserve in the U.S., New England, and Massachusetts, 2000 and 2003
(Annual Averages)

State/Region/Country	2000	2003	Absolute Change	Percent Change
Massachusetts	56,047	74,254	18,207	32.5
New England	140,513	186,333	45,820	32.6
U.S. Total	3,940,173	4,290,222	350,049	8.9

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

A Broader View of Labor Underutilization Problems in Massachusetts and the U.S., 2000 and 2003

The official unemployment statistics are the most widely cited measure of labor force underutilization problems in the nation and the state even though they are not well understood by either most economic pundits or the public at large. Yet, as the above analyses have revealed, labor underutilization problems in Massachusetts and the nation go well beyond the official unemployment statistics, including at a minimum those experiencing underemployment problems and the members of the labor force reserve, a type of hidden unemployment.¹³ Estimates of the number of Massachusetts residents (16 and older) who experienced one of these three labor market problems during calendar years 2000 and 2003 are displayed in Table 13.

In Massachusetts during 2000, on an average month, there were 89,000 persons who were unemployed, 55,000 employed persons working part-time for economic reasons, and another 56,000 who were members of the labor force reserve. The combined number of persons

experiencing one of these three mutually exclusive labor market problems in calendar year 2000 was nearly 200,000, representing 6.0% of the adjusted resident civilian labor force.¹⁴ By 2003, the number of state residents who encountered one of these three underutilization problems had risen considerably. The pool of unemployed persons had more than doubled to 203,000, those working part-time for economic reasons had increased by 47 percent to 81,000, and the labor force reserve rose from 56,000 to 74,000. The combined pool of residents with an underutilization problem had increased to an average level of 358,000 in 2003, representing 10.8 percent of the state's adjusted labor force. Thus, nearly one of every nine members of the state's adjusted labor force were experiencing an underutilization problem in 2003.

Table 13:
Number of Labor Force Participants in Massachusetts Who Were Unemployed, A Member of the Labor Force Reserve or Working Part-Time for Economic Reasons, 2000 and 2003
(Annual Averages)

Group	2000 ⁽¹⁾	2003
Total Civilian Labor Force	3,249,291	3,488,432
Labor Force Reserve	56,047	74,254
Working Part-Time for Economic Reasons	54,825	80,612
Unemployed	89,118	202,686
Labor Force Reserve, Working Part-Time for Economic Reasons, and Unemployed Combined	199,990	357,552
Adjusted Civilian Labor Force Including Reserve	3,305,338	3,562,686
Percent of the Adjusted Labor Force Who were Unemployed, A Member of the Reserve Labor Force or Working Part-Time for Economic Reasons	6.0%	10.8%

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

Note: ⁽¹⁾ The size of the state's 2000 civilian labor force was adjusted upward by the BLS in the past year but the 2000 CPS numbers on the data files cannot be revised.

Labor underutilization problems clearly have increased sharply in Massachusetts over the past three years. These problems also grew in intensity in the nation and region. The percentage point increase in the incidence of these underutilization problems in Massachusetts, however, surpassed that of the nation and the New England region between 2000 and 2003. (Table 14). Massachusetts workers were, however, somewhat less likely to be underutilized than their national counterparts (10.8% vs. 11.8%).

¹³ Other underutilization problems include the mal-employed, those who lost overtime hours, and persons who were unable to hold two or more jobs, i.e., multiple job holders whose numbers also have shrunk over the past three years.

¹⁴ The adjusted resident civilian labor force consists of the civilian labor force and the labor force reserve.

Table 14:
Percent of Labor Force in the U.S., New England, and Massachusetts
Who Were Unemployed, A Member of the Reserve Labor Force or Working Part-Time for
Economic Reasons, 2000 and 2003

State/Region/Country	2000	2003	Percentage Change
U.S.	8.9	11.8	+3.0
New England	6.4	10.3	+3.9
Massachusetts	6.1	10.8	+4.8

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

The Incidence of Labor Underutilization Problems Among Workers by Educational Attainment in Massachusetts

The severe labor market downturn in Massachusetts since early 2001 has substantially increased the number of workers experiencing labor market problems in the state. National and local media stories over the past few years often have emphasized the employment problems of college graduates and managers/professionals, especially those affected by the downturn in the DOT.com, telecommunications, computer software, and financial service industries, and by the recent outsourcing of labor to India and China. These stories, however, have seldom been accompanied by objective data to back up their interesting anecdotes. How has the deterioration in labor market conditions affected different educational subgroups of workers in the state? To begin to answer this question, we examined the incidence of labor underutilization problems among key educational subgroups of the labor force in Massachusetts in calendar years 2000 and 2003. The members of the labor force in the state were classified into the following four educational subgroups:

- Those persons lacking a regular high school diploma/GED certificate
- Those persons possessing a high school diploma/GED, but who completed no years of post-secondary schooling
- Those persons completing 13 to 15 years of schooling, including Associate degree holders
- Those persons with a Bachelor's or more advanced degree

For each educational group, we estimated the percentage share of the members of the adjusted labor force who experienced one of the above three labor underutilization problems in

calendar years 2000 and 2003. During the labor market boom year of 2000, the incidence of such underutilization problems in Massachusetts varied quite considerably across these four educational subgroups, ranging from a low of 3.2 percent among those persons holding a bachelor's or higher degree to 6.7 percent for high school graduates and to a high of 15.3 percent for those lacking a high school diploma (Table 15). Teens and adults lacking a high school diploma were nearly five times as likely to experience a labor underutilization problem as four year college graduates. After the end of the state labor market boom in early 2001 and the continuing job losses of the last two years, there has been a steady rise in underutilization problems among these four educational subgroups in the state. The incidence of underutilization problems within each of these educational subgroups in Massachusetts increased between 2000 and 2003. However, in 2003, the incidence of such problems continued to vary considerably across these four groups, ranging from a low of 6.6 percent among those persons with a bachelor's or higher degree to a high of 21 percent among those individuals lacking a high school diploma or a GED certificate. Slightly more than 1 of every 5 teens and adults lacking a high school diploma experienced one of these three underutilization problems in the past calendar year. These problems are over and above the declining real wage prospects that they have faced over the past two decades.

Table 15:
Incidence of Underutilization Problems Among Massachusetts
Labor Force Members by Educational Attainment, 2000 and 2003

Educational Attainment	2000	2003	Percentage Point Change
Less than 12 or 12, No Diploma	15.3	21.2	+5.9
High School Graduate	6.7	11.6	+4.9
1-3 Years of College	5.8	10.0	+4.2
Bachelor's Degree or Higher	3.2	6.6	+3.4
Total	6.2	10.2	+4.0

Source: Monthly Current Population Surveys (CPS), 2000 and 2003, tabulations by authors.

Trends in Multiple Job Holding in Massachusetts and the U.S. Between 2000 and 2003

The deterioration in state labor market conditions over the past three years has affected workers in a myriad number of ways. One additional change has been that of multiple job

holding rates.¹⁵ The monthly CPS household survey collects data on the number of employed persons holding two or more jobs at the time of the survey. This group of employed persons is known as multiple job holders or moonlighters in the labor economics literature. During calendar year 2000, 5.9% of Massachusetts workers were estimated to be multiple job holders, a rate essentially identical to the U.S. multiple job holding rate of 5.8% (Table 16). Since 2000, the multiple job holding rate of Massachusetts workers has declined, falling to 5.0% in 2003. This near one percentage point decline in the multiple job holding rate in Massachusetts is equivalent to a drop of approximately 30,000 multiple job holders, a nontrivial number.

Table 16:
Trends in Multiple Job Holding Rates in the U.S.,
New England, and Massachusetts, 2000 and 2003

State/Region/Country	2000	2003	Percentage Point Change
Massachusetts	5.9	5.0	-0.9
New England	6.8	5.8	-1.0
U.S.	5.8	5.5	-0.3

Source: Monthly Current Population Surveys (CPS), 2000 and 2003 tabulations by authors.

Summary of Key Findings and Their Implications for Future Workforce Development Training Initiatives

Findings presented in this paper have revealed the existence of very steep declines in payroll employment across the state since early 2001. Nearly 220,000 wage and salary jobs have been lost in the state over the past three years, representing a far greater rate of job loss than that experienced by the nation as a whole over the same time period. Job losses were particularly intense in the state’s manufacturing and information industries, key elements of the state’s export base that have generated declines in other industries via the multiplier effect. These severe job declines have substantially increased problems of open unemployment, underemployment and other forms of labor underutilization in the state. The level of unemployment has more than doubled over the past three years, a rising fraction of the unemployed have been permanently displaced from their jobs, and the average durations of unemployment also have nearly doubled over the past three years. The combined set of labor underutilization problems have intensified

¹⁵ Those persons holding two self-employment positions or two unpaid family worker positions are not classified as multiple job holders by the U.S. Bureau of Labor Statistics. They have been excluded from our estimates of the number of multiple job holders.

among workers in each major educational group in our state over the past three years although workers lacking high school diplomas face by far the most severe labor market problems.

While overall payroll employment in Massachusetts has declined considerably over the past three years and has yet to show any signs of substantive recovery, some industrial sectors have added jobs, and vacancies do exist in a number of industrial and occupational job niches.¹⁶ Job training programs targetted upon those industries and occupations with currently available and projected future job openings can both address the skill shortages and improve the employment and earnings prospects of the trainees. The Workforce Training Initiative should aim to improve our knowledge base on the geographic, industrial, and occupational distribution of available job vacancies in the state and assess their potential to achieve desired earnings objectives for training program participants. Given the critical need for new job creation to address the growing numbers of underutilized workers in the state, it would be highly desirable to directly link more job training activities to economic development initiatives at the state and local level.

¹⁶ Job vacancy estimates have been produced by the Massachusetts Division of Employment and Training for the past year. A new round of vacancy estimates will be produced in the early spring.