

**The Summer and Senior Year Work Experiences of Boston  
Public High School Graduates and Their Influence on  
Their Employment Status in the Year Following  
Graduation from High School**

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## Introduction

Each year since the mid-1980s, the Boston Private Industry Council has conducted an annual survey of the early post-high school college enrollment and labor market experiences of new graduates from the city of Boston's public high schools. The follow-up questionnaire used in carrying out this survey collects information on the work activities of graduates during the summers of their high school years and during the senior year of high school as well as their employment status and job characteristics at the time of the follow-up survey. The survey is typically conducted by career specialists during the later winter and early spring of the year following graduation from high school.

This research paper is designed to describe key findings of PIC follow-up surveys of recent high school graduates over the past six years with respect to the senior year and summer work experiences of Boston public school graduates and to analyze the influence of these in-school work experiences on the employment status of Class of 2005 BPS graduates at the time of the winter/spring 2006 follow-up survey. A substantial body of previous research over the past few decades at the national, state and local level has revealed the existence of strong positive links between the in-high school work experiences of students and their employment experiences in the early years following graduation from high school.<sup>1</sup> The favorable impacts of in-high school work experience, especially during the junior and senior years of high school, can last for up to a decade for those graduates who do not attend four year colleges for substantial periods of time.

The labor market for teenagers in Massachusetts and the U.S. has been substantially depressed in recent years, with steep declines in teen employment rates during both the school year and the summers since 2000.<sup>2</sup> We will, thus, begin our study with a brief overview of changes in the employment rates of Massachusetts high school students 16 and older between 2000 and 2005, with breakouts of the findings for gender and race-ethnic

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<sup>1</sup> For a review of research findings at the national, state, and local level on the links between in-school work experience and the early transition to the labor market upon graduation, see: (i) Andrew Sum, Neeta Fogg, and Garth Magnum, Confronting the Youth Demographic Challenge: The Labor Market Prospects of At-Risk Youth, Sar Levitan Center on Social Policy Studies, Johns Hopkins University, Baltimore, 2000; (ii). Andrew Sum, Joseph McLaughlin, and Ishwar Khatiwada, The Summer Teen Job Market in 2005 and the Predicted Outlook for 2006: Implications of Summer Employment for Jobs for America's Graduates Program, Report Prepared for the Jobs for America's Graduates Network, Alexandria, Virginia, 2007; (iii). Neeta Fogg and Andrew Sum, In-School Work Experiences of JAG Senior Year Program Participants and Their Influence on Their Post-Program Labor Market Outcomes: Findings for the Class of 2005, Report Prepared for the Jobs for America's Graduates Network, Alexandria, Virginia, 2007.

<sup>2</sup> See: Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin with Sheila Palma and Paulo Tobar, "The Declining Teen Labor Force", Research and Evaluation Brief, Vol. 4, Issue 9, Commonwealth Corporation, March 2007.

groups. Trends in the summer employment rates of U.S. teens over the 2000-2006 period also will be described.

The state and national findings on teen labor market developments will be followed by a review of trends in the senior year and summer work experiences of Boston public school graduates from the Classes of 2000 to 2005. The simple statistical associations between the senior year and summer employment experiences of BPS graduates from the Class of 2005 and their employment status at the time of the 2006 follow-up survey will be analyzed. The final sections of the paper will present findings of a set of multivariate statistical analyses of the relationships between the summer and senior year employment experiences of graduates from the Class of 2005 and their employment status at the time of the winter/spring 2006 follow-up surveys.

## **Recent Trends in the Summer Employment Rates of the Nation's Teens**

Following the end of the 1990's national labor market boom in early 2001, the labor market for the nation's teens deteriorated considerably over the next four years. Employment opportunities fell far more sharply for teens than for any other age group, and they have not improved to any substantive degree over the past three years (2004-2006) despite renewed wage and salary job growth across the country.<sup>3</sup> The average, year-round teen employment rate (36.6%) in the past three years (2004-2006) was the lowest in the past 60 years. (Chart 1).

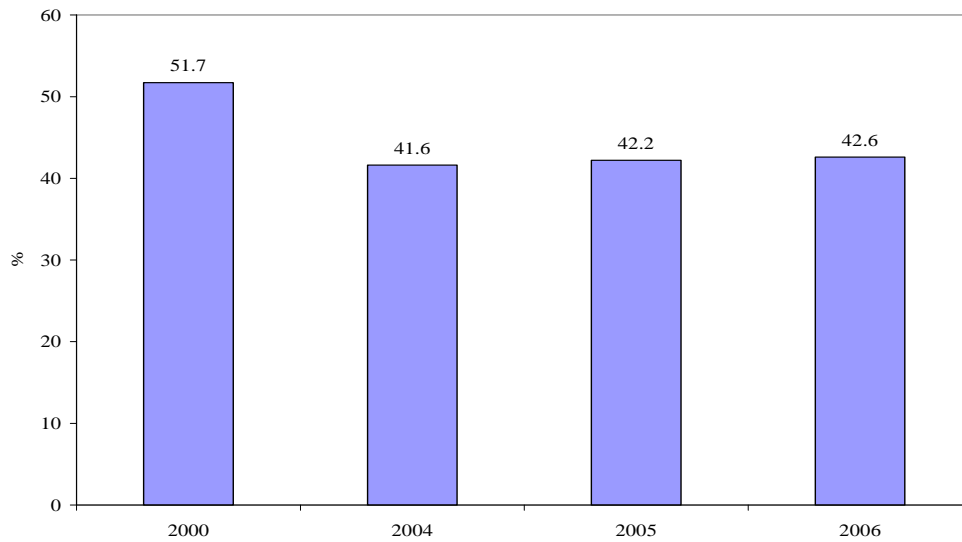
The summer job market for the nation's teens also has been substantially depressed in recent years. In the summer of 2000 (June-August), nearly 52 of every 100 teens (16-19 years old) were employed during a typical month.<sup>4</sup> The summer employment rate for teens fell steadily and strongly over the following four years, declining to a new historical low of 41.6 percent in 2004 before modestly improving last summer to 42.6%.

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<sup>3</sup> See: Joseph McLaughlin, Andrew Sum, and Ishwar Khatiwada, The Projected Summer 2007 Job Outlook for the Nation's Teens and the Implications of Summer Employment for Jobs for America's Graduates Program, Prepared for Jobs for America's Graduates, Alexandria, Virginia, 2007.

<sup>4</sup> These summer employment rates for teens are the average employment/population ratios for these three months not seasonally adjusted. The teen E/P ratio represents the share of the nation's teens in the civilian, non-institutional population that were employed during a given month. An E/P ratio of 42 percent implies that 42 of every 100 teens were working during this time period.

Chart 1: Trends in the Summer Employment Rates of Teens in the U.S., Selected Summers, 2000 to 2006 (in %, not seasonally adjusted)



## **The Employment Rates of Massachusetts High School Students in 2000 and 2005**

One subgroup of teens of particular interest to national and state workforce development policymakers over the past few decades has been high school students, especially those from low income families and communities.<sup>5</sup> A variety of dropout prevention, school-to-work transition, and school-to-career programs have been implemented to improve the ability of high school students to graduate from high school and move more smoothly from high school to the labor market and college after graduation. The Massachusetts legislature recently has provided additional funding for Connecting Activities Programs to support the employment of youth in paid internship and regular unsubsidized positions in private industry during the school year and the summer.

Findings of the 2000 Census and the 2005 American Community Surveys were used to estimate the employment rates of working-age high school students in Massachusetts both overall and for gender, age, race-ethnic, and family income subgroups.<sup>6</sup> At the time of the 2000 Census, nearly 40% of high school students (16 and older) in Massachusetts were working. Female high school students were somewhat more likely to be working than boys

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<sup>5</sup> The recent Youth Opportunity Grants program (YOG) of the U.S. Department of Labor, which included demonstration efforts in Boston and Brockton, was designed to improve educational and employment outcomes for 14-21 year olds living in high poverty neighborhoods of central cities and rural areas.

<sup>6</sup> The much larger sample sizes from the 2000 Census PUMS files and the ACS 2005 surveys, the latter of which contained information on more than 2,000 high school students 16 and older, allow us to analyze the high school student population in much more detail than the CPS surveys.

(41% vs. 38%) (Table 1 and Chart 2). During the national and state recession of 2001 and the largely jobless recovery of 2002-2004 in Massachusetts, the employment rates of state teens declined steadily and sharply, and high school students were particularly adversely affected. By 2005, the employment rate of the state's high school students had declined sharply to 31%, an 8.5 percentage point lower employment rate than that prevailing in 2000. The relative size of this decline was 21%. The employment rates of both boys and girls fell considerably; however, the decline among high school boys was larger than that of girls, 10 percentage points versus 7 percentage points. The relative size of the drop in the employment rate of boys was 26 per cent, an extraordinarily large decline. Male high school students faced more severe competition for available jobs from older males (20 and older) and from a substantial influx of young, relatively poorly educated immigrant males from Central and South America, a high fraction of whom work in the same retail and service industries that employ many male high school students.<sup>7</sup>

Table 1: Comparisons of the Employment Rates of High School Students (16+) in Massachusetts in 2000 and 2005, All and by Gender (in %)

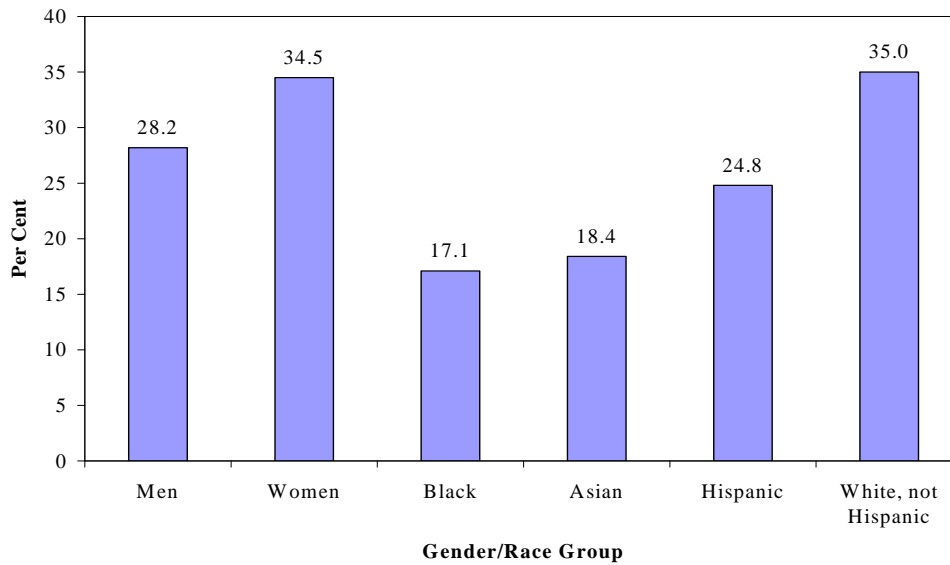
	(A)	(B)	(C)	(D)
Group	2000	2005	Percentage Point Change	Per Cent Change
All	39.7	31.2	-8.5	-21
Men	38.3	28.2	-10.1	-26
Women	41.4	34.5	-6.9	-16

Sources: (i) 2000 Census of Population and Housing, 5-100 PUMS files, tabulations by authors; (ii) 2005 American Community Surveys, public use files, tabulations by authors.

Employment rates of the state's high school students in 2005 varied quite widely across race-ethnic groups, ranging from lows of 17 to 18 percent for Blacks and Asians to a high of 35 percent for White, non-Hispanics. (See Chart 2). Among each race-ethnic group, employment rates of high school students were higher when they lived with both parents who worked and when family incomes were higher.

<sup>7</sup> Unlike their Asian and European counterparts, few of the immigrant males from Central and South America have college degrees, and many of them lack high school diplomas. These less educated immigrants compete directly with young high school students and graduates for available jobs.

Chart 2: Employment Rates of High School Students 16 and Older in Massachusetts by Gender and Race-Ethnic Group in 2005



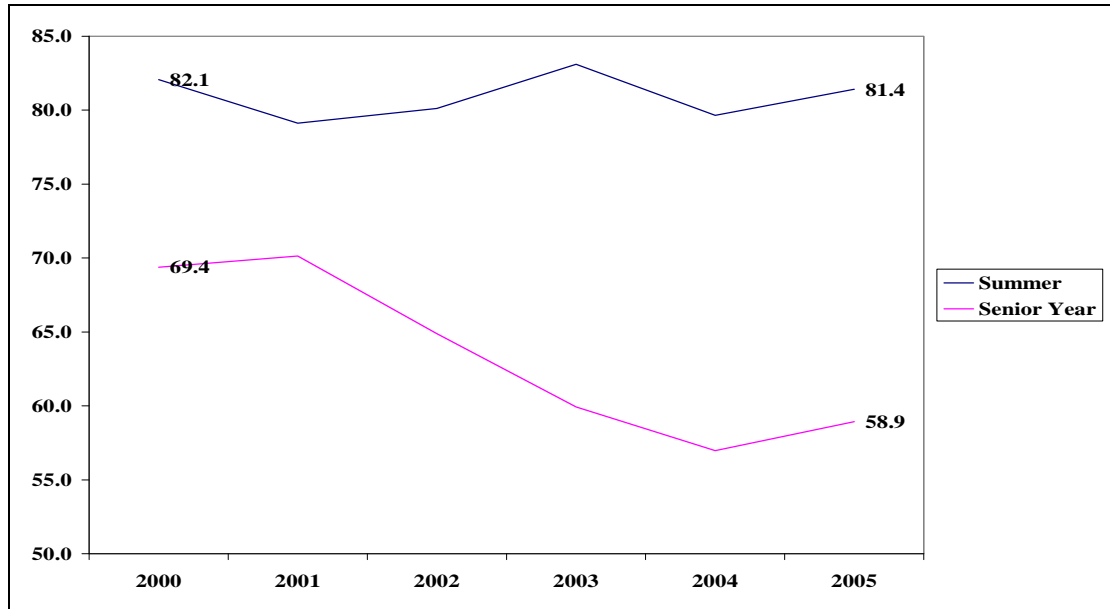
### **Trends in the Senior Year and Summer Work Experiences of Boston Public High School Graduates, 2000-2005**

The Boston PIC follow-up surveys of each year's public high school graduating class collect information on respondents work experiences during the summers of their high school years and during the senior year. For the senior year, information is collected on the number of weeks that they were employed (0-39 weeks). Research findings over the past decade have shown a substantial majority of high school graduates have been able to obtain some employment during the summers of their high school years. Thanks to the relentless efforts of the Mayor and the professional staff of the Boston Private Industry Council, most graduates were able to find jobs in the summer even during the more depressed labor market conditions of recent years. Chart 3 displays trends in the summer and senior work experiences of Boston public high school graduates over the past six years. Between 2000 and 2005, 80 to 83 percent of the graduates from Boston public high schools worked at least one summer while enrolled in high school.

In contrast to the persistently strong summer employment rates, the percent of graduates who worked during the senior year of high school has declined fairly steadily over the past five years. Sixty-nine to seventy percent of graduates from the Classes of 2000 and 2001 worked during the senior year while only 59 percent of graduates from the Class of 2005 reported to have worked, a drop of 10 percentage points in the senior year employment rate over this 5-year period. This drop in employment was attributable to the deteriorating labor market situation of teens in recent years in the city and the state as a whole. This trend

of declining high school employment rates was not unique to Boston, but as noted earlier was prevalent across the entire nation.

Chart 3: Trends in Summer and Senior Year Work Employment Rates of Boston Public High School Graduates, 2000-2005 (In %)



Over the 2000-2005 time period, the senior year employment rates of BPS graduates fell for each gender and race-ethnic group. The declines in the employment rates of men and women were quite similar. Both male and female graduates experienced a 10-percentage point decline in their employment rates. (Table 2). Each race-ethnic group also encountered a decline in their employment rate during high school, but the size of these declines varied somewhat across race-ethnic groups being larger for Black and White graduates. Across the four major race-ethnic groups, employment rates fell 12.2 percentage points for Black graduates, 11.8 percentage points for White graduates, 9.1 percentage points for Asian graduates and 5.8 percentage points for Hispanic graduates. Male Hispanic graduates were the only gender/race-ethnic group to come close to maintaining the employment rate that they held in 2000. The senior year employment rate of male Hispanic graduates in 2005 was 69.2%, only one percentage point below their 2000 rate. However, male Hispanic graduates were still 6 percentage points below their peak employment rate in 2001. The steep declines in senior year employment over the past six years should be viewed as troubling, given the importance of such work experience in helping graduates transition to the labor market upon graduation.

Table 2: Trends in Senior Year Employment Rates of Boston Public High School Graduates by Gender and Race-Ethnic Group, Classes of 2000-2005 (In %)

		(A)	(B)	(C)	(D)	(E)	(F)
Gender	Race/Ethnic	2000	2001	2003	2004	2005	Percentage Point Change, 2000-2005
Female	Black	72.5	73.9	62.5	62.0	60.3	-12.2
	White	73.7	68.9	63.6	64.7	62.8	-10.9
	Asian	45.8	54.4	46.2	39.7	41.4	-4.4
	Hispanic	72.2	75.1	63.1	60.5	62.3	-9.9
	Total	69.8	71.0	60.9	59.5	59.0	-10.8
Male	Black	73.0	71.7	60.6	54.1	60.9	-12.0
	White	67.9	68.0	60.2	63.1	55.0	-12.9
	Asian	52.2	51.7	42.3	35.7	38.5	-13.7
	Hispanic	70.1	75.6	62.6	55.1	69.2	-1.0
	Total	68.9	69.1	58.6	53.6	58.9	-10.0
Total	Black	72.7	72.9	61.7	58.7	60.6	-12.2
	White	71.1	68.4	62.0	64.0	59.3	-11.8
	Asian	49.1	53.2	44.5	37.9	40.0	-9.1
	Hispanic	71.3	75.3	62.9	58.1	65.4	-5.8
	Total	69.4	70.1	59.9	57.0	58.9	-10.4

Despite the substantial downturn in the summer labor market for teens nationally and in Massachusetts, most recent BPS graduates have been able to obtain some summer job experience during their high school years. Slightly over 81% of the graduates from the Class of 2005 had obtained some summer job experience while in high school, approximately the same rate as for the Class of 2000. Between 2000 and 2005, the summer work experience rate for male graduates declined by 3.6 percentage points while female graduates had achieved a slightly higher rate of summer work experience in 2005 than in 2000. (Table 3). White male graduates experienced the largest decline in summer work experience among the eight gender/race-ethnic groups.

**Table 3: Trends in Summer Job Experiences of Boston Public High School Graduates by Gender and Race-Ethnic Group, Classes of 2000-2005 (% with Some Summer Work Experience)**

		(A)	(B)	(C)	(D)	(E)	(F)
Gender	Race	2000	2001	2003	2004	2005	Percentage Point Change, 2000-2005
Female	Black	81.6	80.1	84.5	81.6	84.1	2.4
	White	91.2	88.1	92.8	84.6	88.1	-3.1
	Asian	73.8	74.3	86.1	79.8	79.9	6.1
	Hispanic	74.7	69.9	78.7	75.9	77.3	2.6
	Total	81.1	78.4	84.9	80.7	82.7	1.6
Male	Black	83.5	80.5	82.2	76.8	82.5	-1.0
	White	94.3	89.8	84.6	90.3	84.0	-10.3
	Asian	78.0	68.0	71.8	75.0	72.8	-5.2
	Hispanic	76.1	75.4	78.5	73.3	75.7	-0.4
	Total	83.2	80.0	80.7	78.3	79.8	-3.4
Total	Black	82.5	80.3	83.6	79.5	83.4	0.9
	White	92.6	89.0	88.9	87.1	86.2	-6.4
	Asian	76.0	71.4	79.8	77.6	76.4	0.5
	Hispanic	75.3	72.3	78.6	74.8	76.6	1.2
	Total	82.1	79.1	83.1	79.6	81.4	-0.6

### **The Influence of Senior Year and Summer Work Experience on the Employment Status of Class of 2005 Boston Public High School Graduates at the Time of the 2006 Follow-up Survey**

The early post-high school labor market success of youth is significantly influenced by their work experiences in high school. Our earlier research for Boston high school graduates and those in 26 other states across the country over the past decade has consistently revealed that employment of youth is path dependent, i.e., the current employment status of youth is highly dependent on their past work experience. There are important economic and social benefits from gaining work experience at an early age. Youth with high school employment are more likely to gain soft skills demanded by employers, less likely to be engaged in criminal activities or to be incarcerated, and more likely to be employed after high school with higher earnings. Work experience during high school also can instruct youth on the importance of school learning for labor market success and provides youth with soft-skills that are considered important at the work place. There is a substantial body of empirical research findings at the national, state, and local level that confirms the statistical links

between work experience in high school and the early post-high school employment experiences of high school graduates.<sup>8</sup>

Charts 4 and 5 display the employment-population ratios of Class of 2005 Boston public high school graduates at the time of the winter/spring 2006 follow-up survey based on their summer and senior year work experiences during their high school years. The findings are straightforward- the more an individual works in the summers or during the senior year of high school, the higher the probability of employment in the early post-high school years. Only 38 percent of BPS graduates from the Class of 2005 who did not work in the senior year of high school were employed at the time of the winter/spring 2006 survey versus 51 percent of those who worked 1-13 weeks, 54 percent of those who worked 14-26 weeks, and more than 65 percent of those who worked 27 or more weeks in the senior year of high school. The employment rate gap between Class of 2005 Boston public school graduates who did not work at any time in the senior year of high school and those who worked 27 weeks or more was a very substantial 27 percentage points.

Graduates who worked more summers in high school also had modestly higher employment rates than their peers who did not work in any summer while in high school. The employment rate difference between all graduates who did not work in any summer and those who worked 1 or more summers was only 3 percentage points (50 percent versus 53 percent). However, the employment rate difference between these two groups was much larger for those graduates who were not enrolled in any post-secondary educational program at the time of the follow-up survey. Non-enrolled graduates who did not work in any summer in high school had an E/P ratio of only 66 percent versus a 77 percent ratio for those who worked 3-4 summers in high school.

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<sup>8</sup> See: Andrew Sum, Joseph McLaughlin, Ishwar Khatiwada, and Tim Barnicle, Educational and Labor Market Outcomes for the Nation's Teens and Young Adults Since the Publication of America's Choice, Report Prepared for the National Center on Education and the Economy, New National Commission on the Skills of the American Workforce, Washington, D.C., 2006.

Chart 4: Employment-Population Ratios of Class of 2005 Boston Public High School Graduates at the Time of the Spring 2006 Follow-up Survey by their Work Experience During the Senior Year of High School (In %)

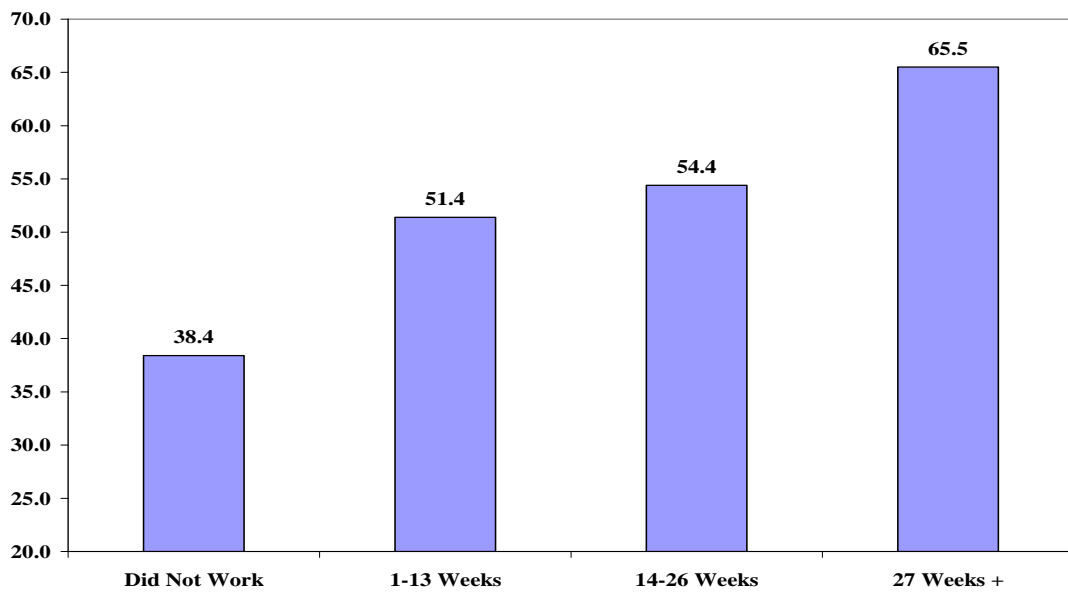
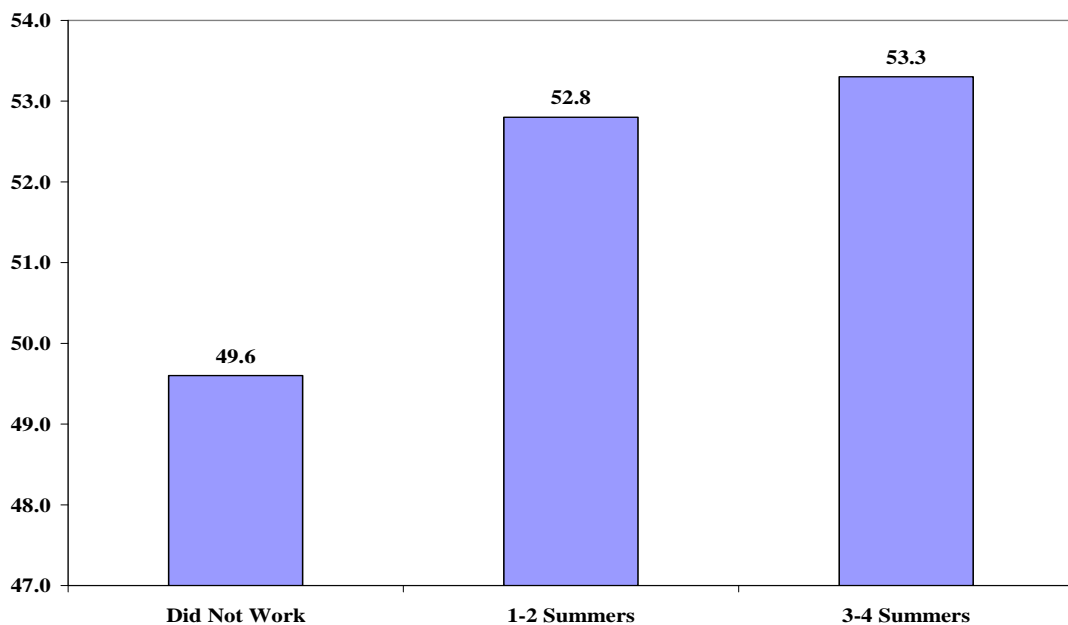


Chart 5: Spring 2006 Employment-Population Ratios of Class of 2005 Boston Public High School Graduates by their Summer Work Experiences During High School



The above findings on the links between the in-school employment experiences of Class of 2005 graduates and their post-high school employment rates were based a simple set of cross tabulations not controlling for the influence of other variables. To estimate the independent impacts of high school work experience on the employment status of Boston public high school graduates at the time of winter/spring 2006 follow-up survey, we constructed a set of multivariate regression models of the probability of employment of graduates at the time of the follow-up survey. Our major objective is to estimate the impacts of summer and senior year work experience on the likelihood of being employed at the time of the follow-up survey. Table 4 displays the variables appearing in our regression models. The dependent variable is the employment status of the Boston public high school graduate at the time of the winter/spring 2006 follow-up survey. The employment status variable is a dichotomous variable that takes on the value of 1 if the graduate was employed and the value of 0 if they were not employed at the time. The predictor variables include gender, race-ethnic origin, school-to-career program participation status in high school, post-secondary education enrollment status of graduates at the time of the follow-up survey, and summer and senior year work experiences of the graduate in high school.

Table 4  
Definitions of the Dependent and Independent Variables Appearing in the  
Multiple Regression Models of the Follow-up Employment Status of Boston Public High  
School Graduates from the Class of 2005

Variable Name	Definition of Variable
<u>Dependent Variable</u>	
Employed	A dichotomous variable representing the employment status of Boston public high school graduates from Class of 2005 at the time of the Spring 2006 follow-up survey 1 = if employed 0 = if else
<u>Independent Variables:</u>	
Male	A dichotomous gender variable 1 = Male 0 = Female
Black	A dichotomous race/ethnic variable 1 = if Black, non-Hispanic 0 = if else
Asian	A dichotomous race/ethnic variable

	1 = if Asian, non-Hispanic 0 = if else
Hispanic	A dichotomous race/ethnic variable 1 = if Hispanic 0 = if else
STCPROG	A dichotomous variable representing school-to-career program participation status 1 = if graduate participated in a school-to-career program in high school 0 = if else
Enrolled	A dichotomous variable representing the graduate's post-secondary education enrollment status 1 = if graduate was enrolled in a post-secondary educational program 0 = if else
SnYr1-12Weeks	A dichotomous variable representing number of weeks worked during the senior year in high school 1 = if worked 1-12 weeks 0 = if else
SnYr13-26Weeks	A dichotomous variable representing number of weeks worked during senior year in high school 1 = if worked 13-26 weeks 0 = if else
SnYr27PlusWeeks	A dichotomous variable representing number of weeks worked during the senior year in high school 1 = if worked 27 or more weeks 0 = if else
Worked1-2Summers	A dichotomous variable representing the number of summers worked during high school 1 = if worked 1-2 summers 0 = if else
Worked3Summers	A dichotomous variable representing the number of summers worked during high school 1 = if worked 3 summers 0 = if else
Worked4Summers	A dichotomous variable representing the number of summers worked during high school 1 = if worked 4 summers 0 = if else

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We have constructed three separate regression models to estimate the independent impacts of in-high school senior year and summer employment experiences of graduates on their post-high school employment rates. In the first model, we estimated only the independent impacts of summer work experience in high school on post-high school employment, excluding senior year employment. In the second model, we estimated independent impacts of senior year work experience on employment, excluding summer employment. In the third model, we estimated simultaneously the independent impacts of both senior year work experience and summer work experience together on the post-high school employment status of Boston public high school graduates.

In the first model, summer work experience had positive impacts on the probability of post-high school employment. The estimated coefficients on the three summer work experience variables were statistically significant at the .01 or .05 level. (Table 5). A number of other predictor variables also had significant impacts on the probability of employment at the time of the follow-up survey. Hispanic graduates, *ceteris paribus*, were 10.5 percentage points more likely to be employed than their base group peers (White, non-Hispanic graduates). Participating in a school-to-career program had an estimated small positive coefficient, but the coefficient was not statistically significant. Graduates enrolled in post-secondary educational program at the time of the follow-up, *ceteris paribus*, were 25 percentage points less likely to be employed than their non-enrolled counterparts. Graduates who worked 1-2 summers in high school were 8.1 percentage points more likely to be employed than those graduates who did not work in any summer while in high school. The estimated coefficients for graduates who worked three summers and all four summers were even larger, 7.8 and 12.8 percentage points, respectively.

Table 5: Findings of the Multiple Regression Analysis of the Spring 2006 Follow-up Employment Status of Class of 2005 Boston Public High School Graduates (Model I)

Variable	Coefficient	Standard Error
Constant	0.595***	0.041
Male	-0.002	0.021
Black	0.027	0.030
Hispanic	0.105**	0.035
Asian	-0.037	0.038
STCPROG	0.025	0.023
Enrolled	-0.253***	0.026
Worked1-2Summer	0.081**	0.029
Worked3Summers	0.079**	0.035
Worked4Summers	0.128***	0.036

Model Summary		
R-Squared	.062	
Degrees of Freedom; N	9; 2,156	
F-Statistic	15.73***	

Note: \*\*\* implies significance at .01 level

\*\* implies significance at .05 level

\* implies significance at .10 level

In the second model, the number of weeks worked during the senior year of high school was entered into the model in the place of the summer work experience variables. Each of the three senior year employment variables were statistically significant and had positive impacts on post-high school employment. (Table 6). Graduates who worked 1-12 weeks during the senior year were 18 percentage points more likely to be employed at the time of the follow-up survey. The coefficient for those graduates who worked 13-26 weeks during the senior year was somewhat though not significantly smaller than those graduates who worked only 1-12 weeks. The estimated coefficient for this variable was approximately 12 percentage points. Working 27 weeks or more had the highest impact on post-high school employment. If a graduate from the Boston public high schools had worked 27 weeks or more in the senior year, the probability of being employed at the time of the follow-up survey was 28.2 percentage points higher than their peers who did not work during the senior year of high school.

Table 6: Findings of the Multiple Regression Analysis of the Spring 2006  
Employment Status of Class of 2005 Boston Public High School Graduates (Model II)

Variable	Coefficient	Standard Error
Constant	0.549***	0.035
Male	-0.001	0.020
Black	0.010	0.028
Hispanic	0.078**	0.033
Asian	-0.009	0.036
STCPROG	0.021	0.022
Enrolled	-0.261***	0.025
SnYr1_12Wks	0.179**	0.063
SnYr13_26Wks	0.119***	0.033
SnYr27PIWks	0.282***	0.022

Model Summary		
R-Squared		.122
Degrees of Freedom; N	9; 2,156	
F-Statistic	33.37***	

Note: \*\*\* implies significance at .01 level

    \*\* implies significance at .05 level

    \* implies significance at .10 level

In the third model, we included sets of variable representing both summer and senior year work experiences of Class of 2005 graduates to assess their combined impacts on post-high school employment. Somewhat surprisingly, none of the coefficients for the summer work experience variables were significant. Once the senior year work experience variables were entered into the model, they washed out the summer work impacts on post-high school employment. (Table 7). Each of the three coefficients for variables measuring the number of weeks worked in the senior year was highly significant. Those graduates who worked more than 27 weeks during the senior year were nearly 29 percentage points more likely to be employed at the time of the follow-up survey than their peers with no paid weeks of work experience. The impact of intensive senior work experience was also significantly higher than that of work experience for 26 or fewer weeks. A high intensity of work during the senior year substantially raises the probability of being employed at the time of the spring follow-up survey.

Table 7: Findings of the Multiple Regression Analysis of the Spring 2006 Employment Status of Class of 2005 Boston Public High School Graduates (Model III)

Variable	Coefficient	Standard Error
Constant	0.546***	0.040
Male	-0.001	0.020
Black	0.009	0.029
Hispanic	0.074**	0.034
Asian	-0.012	0.037
STCPROG	0.017	0.022
Enrolled	-0.260***	0.025
Worked1-2Summer	0.020	0.029
Worked3Summer3	-0.037	0.036
Worked4Summer3	-0.003	0.036
SnYr1_12Wks	0.178**	0.063
SnYr12_26Wks	0.120***	0.033
SnYr27PIWks	0.289***	0.023
Model Summary		
R-Squared	.124	
Degrees of Freedom; N	12; 2,153	
F-Statistic	25..37***	

Note: \*\*\* implies significance at .01 level

\*\* implies significance at .05 level

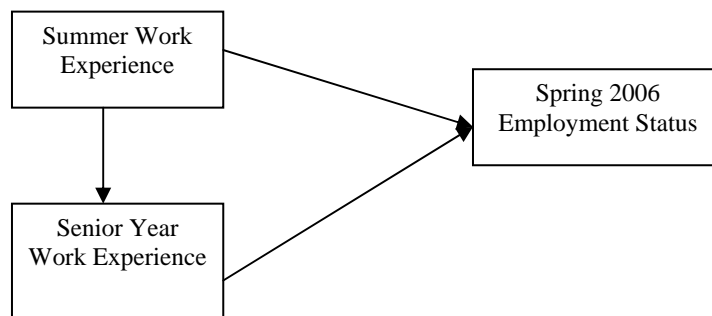
\* implies significance at .10 level

While summer work experience was found to have a significant positive impact on post-high school employment in model I, the inclusion of the senior year work experience variables in our third regression model washed out the impacts of summer jobs. What could be the cause for this result? Were these variables highly inter-correlated? Does summer work experience in high school have an indirect independent impact on follow-up employment status of graduates via its ability to raise senior year employment while in high school? In Chart 6, we model the potential indirect effects of summer work experience on employment at the time of the follow-up via its effects on increasing senior year employment. To answer the above questions, we first conducted simple correlation tests<sup>9</sup> between the degree of summer work experience and your senior work experience and also built a regression model to estimate the impacts of summer work experience on the likelihood of senior year employment. The dependent variable in this last regression model was a dichotomous

<sup>9</sup> The correlation tests involve the estimation of Pearson correlation coefficients for each pair of variables and tests of their statistical significance. The value of the correlation coefficient can range from +1.00 to -1.00. A +1.00 coefficient would imply perfect, positive correlation between the two variables; i.e., they move up and down together at the exact same rate. A correlation coefficient of 0 would imply no relationship between the movement of the two variables.

variable representing senior year employment status. It takes on the value of 1 if the graduate was employed in the senior year and 0 if else. The independent variables were gender, race-ethnic origin, participation in a school-to-career program, type of high school attended (exam schools or non-exam schools), and number of summers worked in high school.

Chart 6: Modeling the Potential Direct and Indirect Effects of Summer Work Experience on the Employment Status of BPS High School Graduates at the Time of the Spring 2006 Follow-up Survey



The simple correlation coefficient for these two variables (number of summers worked and senior year work status) was  $+0.264$ , indicating positive correlation. The estimated correlation coefficient was highly significant at the  $.01$  level. Table 8 displays the estimated coefficients on the summer work experience variables in the regression model of senior work experience. All of the coefficients on the variables representing the number of summers worked in high school were positive and highly significant. Students who worked 1-2 summers were 27-percentage points more likely to be employed in the senior year than their peers who did not work during the summers. The coefficient for 3-summer work experience was 45.5, indicating a near 46-percentage points impact on senior year employment. If the student worked all four summers while in high school, he/she was 51 percentage points more likely to be working in the senior year. Thus, the intensity of summer work experiences in high school appear to have very powerful impacts on the likelihood of some senior year employment.

The estimated impacts of summer work experience on the probability of a BPS graduate being employed in the spring following graduation from high school are, thus,

indirect via their influence on being employed during the senior year. Future research efforts should attempt to analyze the impacts of the types and quality of summer work experiences on the employment status of graduates in the year following graduation. This will require additional data collection during the school years and the follow-up survey.

Table 8: Findings of the Multiple Regression Analysis of the Senior Year Employment Status of Class of 2005 BPS Graduates

Variable	Coefficient	Standard Error
Constant	0.314***	0.037
Male	-0.005	0.020
Black	0.006	0.029
Hispanic	0.079**	0.034
Asian	-0.116	0.036
STCPROG	0.021	0.022
ExamSchool	-.123***	0.027
Worked1-2Summers	0.270***	0.027
Worked3Summers	0.455***	0.033
Worked4Summers	0.508***	0.034

Model Summary

R-Squared	.137
Degrees of Freedom; N	9; 2,156
F-Statistic	33.94***

Note: \*\*\* implies significance at .01 level

\*\* implies significance at .05 level

\* implies significance at .10 level