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Uncertain Futures? Youth Attachment to the Labor Market in the United States and New England

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Uncertain Futures? Youth Attachment to the Labor Market in the United States and New England

I. Introduction

In the wake of the Great Recession, high levels of unemployment and low labor force participation rates among American youth are of great concern, receiving considerable attention in the popular press.[1] During the Great Recession, the youth population in the United States—individuals who are 16 to 24 years-old—experienced marked declines in attachment to the labor force, as measured by the share of the youth population that is employed or actively seeking employment. During the Great Recession, the employment-to-population ratio dropped by over 5 percentage points among American youth. As a result, the youth unemployment rate rose to a peak of 19.6 percent—nearly double the rate for all U.S. workers. Roughly five years since this peak, the youth unemployment rate remains elevated, standing at 11.6 percent for 20–24 year-olds and 20.8 percent for 16–19 year-olds as of November 2013. Even more striking, the share of youth participating in the U.S. labor market—either working or looking for work—fell to an all-time low of 54.0 percent in August 2012.[2]

As a result, it is an open question as to what the future path of employment will look like for younger workers. Of particular concern is the share of the youth population that is idle, or what is technically termed "not in employment, education, or training" (NEET). These individuals are particularly vulnerable to continued adverse labor market outcomes in the wake of the Great Recession and their prolonged detachment from the labor market may be costly.[3] In addition to the social costs of unemployment or underemployment—including lost income, lower tax revenues, increased government payments, and decreased economic output—NEETs also tend to experience future wages and lifetime earnings that are lower as well as more frequent future spells of unemployment (Belfield, Levin, and Rosen 2012).[4]

Moreover, the decline in youth labor force attachment began even prior to the onset of the Great Recession—primarily among teens. Youth unemployment is generally higher than that of older workers and youth typically fare worse during recessions, in part due to their fewer years of experience and shorter job tenure (Jaimovich, Pruitt, and Siu 2009; Hoynes, Miller, and Schaller 2012). However, between 2000 and 2006,

1 See Jillian Berman, "America's Youth Unemployment Problem Could Cost $18 Billion Over the Next Decade: Analysis," *The Huffington Post*, May 20, 2013. Available at http://www.huffingtonpost.com/2013/05/20/america-youth-unemployment_n_3306089.html. Dustan Prial, "Dire Youth Unemployment Growing Worse," *Fox Business News*, May 10, 2013. Available at http://www.foxbusiness.com/economy/2013/05/09/youth-unemployment-grows-worse-by-month/. "The Jobless Young Left Behind," *The Economist*, September 8, 2011. Available at http://www.economist.com/node/21528614.

2 These data were obtained from the Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey* [database].

3 See David Leonhardt, "The Idled Young Americans," *New York Times*, May 3, 2013. Available at http://www.nytimes.com/2013/05/05/sunday-review/the-idled-young-americans.html?_r=0. Peter Gumbel, "Why the U.S. Has a Worse Youth Unemployment Problem than Europe," *Time*, November 5, 2012. Available at http://business.time.com/2012/11/05/why-the-u-s-has-a-worse-youth-employment-problem-than-europe/.

4 Belfield, Levin, and Rosen (2013) estimate an overall taxpayer burden of approximately $1.5 trillion and an overall social burden of $4.75 trillion over the lifetime of a 16 to 24 year-old cohort that is not working or in school.

the employment-to-population ratio fell by 5.8 percentage points for teens aged 16 to 19 years—roughly equivalent to the decrease observed for this age group during the Great Recession. The sharp drop in employment among youth since 2000 stands out amidst a more gradual decline observed for the broader U.S. population over the past several decades. An aging population explains part of the decline, but even workers in the prime of their professional lives are less likely to be employed today than a decade ago. In contrast, individuals aged 60 to 65 years have experienced gains in employment since 2000.

What factors might be driving the recent decline in labor market attachment among U.S. youth? Recent studies have argued that the youth labor market has experienced structural changes in recent decades—either on the demand side, the supply side, or some combination of the two (Sum, Gillis, Khatiwada, and Palma 2013). On the demand side, previous research has demonstrated that labor demand has shifted away from routine work and towards jobs that require technical skills or post-secondary training (Autor, Levy, and Murnane 2003; Acemoglu and Autor 2010). Some observers have suggested that education and workforce institutions have not kept pace with these shifts and fail to provide today's youth with the relevant skills to obtain employment—particularly for those individuals who do not complete college (Annie E. Casey Foundation 2012; Pathways to Prosperity Project 2011). On the supply side, there is evidence that the labor market has become increasingly polarized over time with a hollowing out of middle-skill jobs (Autor, Katz, and Kearney 2008). This trend has led some observers to question whether lower-paying service occupations traditionally held by youth are instead being filled by alternative sources of labor—such as adult middle-skill workers or immigrants (Smith 2011; 2012).

To what degree does the decline in youth labor market attachment reflect structural versus cyclical forces? Cyclical factors typically encompass temporary and reversible changes in employment due to decreases in aggregate demand, such that a worker who experienced a job loss during a recession may be able to locate a similar job more quickly in the same industrial sector as the economy recovers. In contrast, structural factors represent a permanent realignment of employment across industries or occupations, such that a displaced worker must update or gain new skills in order to become re-employed.

It is important to determine the degree to which recent trends in the U.S. labor market stem from structural versus cyclical forces in order to assess just how uncertain the future looks for the nation's youth and what course of action policymakers might take to address this uncertainty. For example, will youth employment rates pick up commensurately as overall employment increases or will reduced labor force attachment among youth persist despite an improving economy? If the decline in youth labor market attachment since 2000 primarily reflects cyclical factors that disproportionately affect this demographic group, then policymakers may want to develop programs aimed at ameliorating the impact of the Great Recession on the current cohort of youth workers while the labor market continues to recover. If the decline in youth labor market attachment appears structural in nature, then policymakers may want to focus on creating alternative pathways to address the labor market challenges that 16 to 24 year-olds have faced since 2000.

To date, most of the existing research on youth labor market attachment has focused on either the long-term structural trends or the short-term cyclical impacts. Yet the sharp drop in youth employment during the Great Recession occurred amidst a backdrop of declining youth labor market attachment even before this most recent downturn. Less emphasis has been placed on separating the structural trends observed for youth employment during the pre-recession period (2000–2006) from the cyclical impacts of the Great Recession (2008–2010). Few studies have attempted to put this most recent downturn into a more historical perspective by tracing youth labor force attachment over a longer time series. Moreover, less attention has been devoted to examining the role

of additional long-term factors that may explain the recent decline in youth labor force attachment—such as the growth in school enrollment, changes in the composition of the youth population over time, and structural and cyclical shifts across industrial sectors and within industries and occupations.

This report attempts to address these gaps in the current literature by using individual- and industry-level data from multiple sources to trace the experience of youth workers over the past two decades and quantify the contributing forces that may be driving their declining labor force attachment.[5] We examine trends separately for two groups of youth that possess varying labor market and educational characteristics: individuals aged 16 to 19 years ("teens") and 20 to 24 year-olds ("young adults"). We also explore trends across gender, racial, and ethnic groups—focusing on both levels and *changes* in labor market attachment over time, as measured at successive points in time in the cross-sectional data as well as over the worklife for successive cohorts of youth. Finally, we assess earlier trends in youth employment by occupation and industry in the period just prior to the Great Recession (2000–2006) separately from the cyclical impacts of the most recent downturn. Using this framework, we address the following research questions:

- To what extent has youth labor market attachment changed in recent decades, including changes in the share of youth that are idle/NEET?
- Are the recent changes in labor market attachment being driven by a particular demographic group, or are the changes more widespread across all youth?
- What impacts have structural shifts in the economy across industries and occupations had on the youth labor market before the Great Recession?
- What role did the Great Recession play in reinforcing the long-term decline in youth labor market attachment?

Where possible, we provide regional analysis to inform policymakers about changes in youth labor market attachment in New England, including the degree to which youth are idle. Regional policymakers have expressed concern regarding the labor market challenges facing New England's youth, as well as the impact of limited job prospects on the region's young people and prospects for economic growth.[6] Human capital has traditionally been an engine of growth within New England, yet the region has historically relied on higher education institutions to produce the skilled labor that has fueled this growth. While the New England region has experienced decreases in youth labor force attachment that were similar to those of the nation, there are slight differences in the timing and magnitude. Recent changes in the youth labor market may suggest the need for shifts in policies or practices that encompass a broader range of post-secondary education and training options.

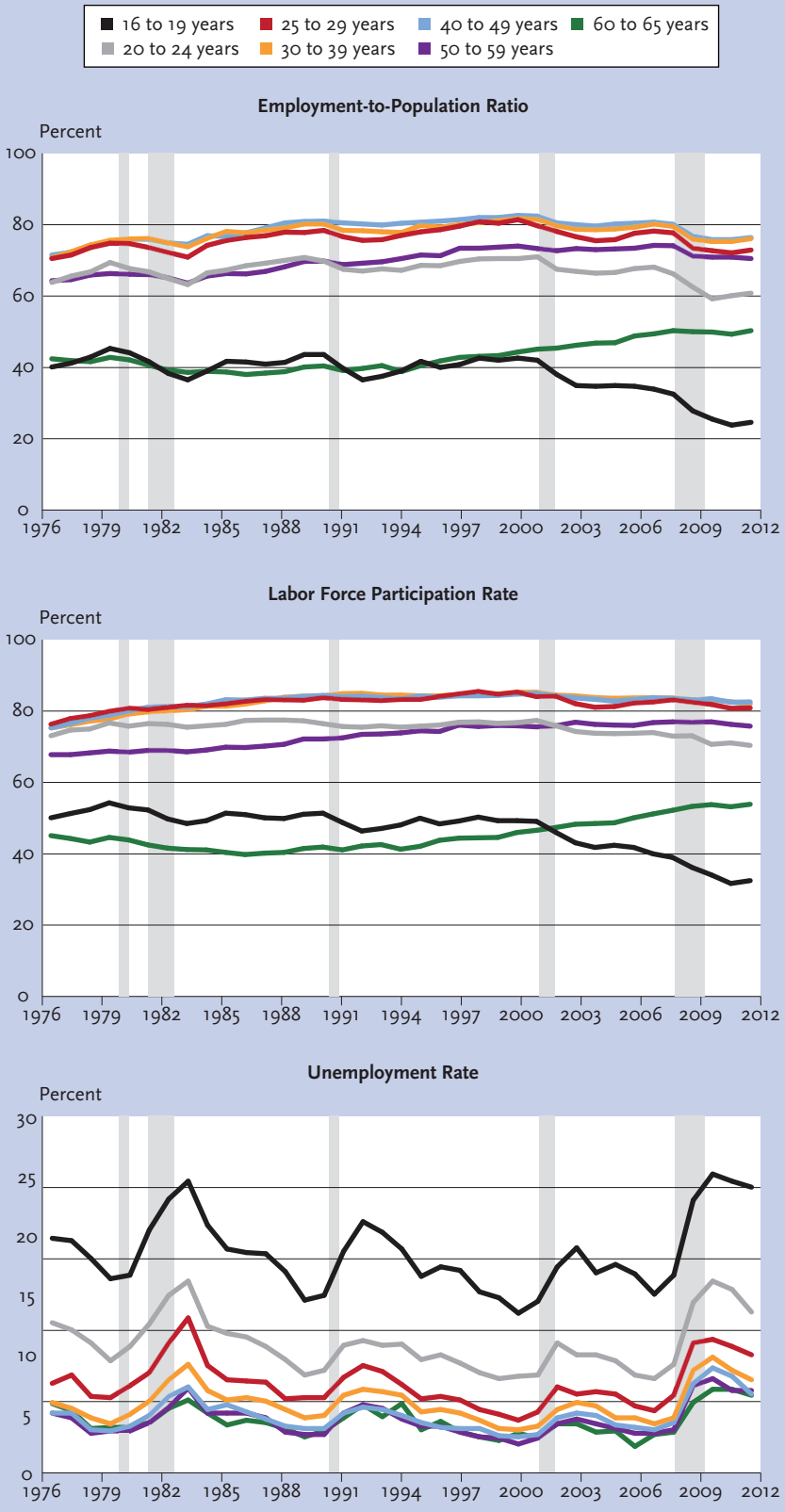
In some respects, our findings are similar to those of earlier studies, yet the data we use tell a more nuanced story. For example, employment and labor force participation fell sharply for 16–19 year-olds prior to the Great Recession, but was fairly steady for 20–24 year-olds between 2000 and 2006, a result that potentially suggests the need for different policy interventions for the two age groups. In addition some, but not all, demographic groups of youth appear to be investing in their

5 The data sources used to perform the analyses in this report include the March Current Population Survey (CPS) from the Integrated Public Use Microdata Series (IPUMS)-CPS (King et al. 2010), the Decennial Census and American Community Survey (ACS) from IPUMS-USA (Ruggles et al. 2010), and the Current Employment Statistics (CES) published by the Bureau of Labor Statistics (BLS). See appendix D: Data and Methodology for details. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

6 Danielle Curtis, "Unemployment Higher among NH's Young Workers," *The Telegraph*, May 5, 2013. Available at http://www.nashuatelegraph.com/news/1003439-469/unemployment-higher-among-nhs-young-workers.html. Martin Powers, "Tough Times for Young Job Seekers in Mass," *Boston Globe*, December 17, 2012. Available at http://www.bostonglobe.com/metro/2012/12/17/job-prospects-for-mass-young-people-remain-daunting-studies-say/ysFEEptOtWwuZsGsWStqjK/story.html.

Figure 1. Since 2000, Youth Labor Force Attachment Has Declined, Particularly Among Teens—A Trend That Intensified During the Great Recession

U.S. Labor Force Attachment Measures by Age Group, 1976–2012



Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. Shaded areas indicate recessions.

education and simply delaying their entry into the labor market—although the success of this pathway is not entirely clear at this point.

In some instances, we uncover a set of facts that runs counter to the conventional wisdom or tells a story that puts current trends into better long-term perspective. For example, the share of U.S. youth that is not in school and not working (NEET) is procyclical—rising during recessions and falling during recoveries—yet idleness among today's 16 to 24 year-olds is no higher than it was two decades ago, just after the 1990–1991 recession. Moreover, although minorities have lower *levels* of labor market attachment, labor force participation has been declining among *all* youth in the United States. However, as other studies have pointed out, closing the gap between native whites and minority groups remains a worthy policy goal (Hanushek and Rivkin 2006).

One key contribution that we make to the existing literature is the documentation of trends in youth employment by industry and occupation. For example, we find that falling employment among youth since 2000 was not driven by shifts in employment *across* industries and occupations over time, but rather by a shift away from employing youth *within* most industries and occupations. Moreover, it appears that the Great Recession, while having a negative impact on employment for all youth, has intensified these long-run structural trends for teens.

The remainder of this report is structured as follows. Section II traces trends in youth labor force attachment over several decades, including trends in school enrollment and the magnitude of youth idleness. Section III examines the extent that labor force attachment varies by different demographic groups of youth. Section IV traces the degree of persistence in labor market attachment over the lifecycle for successive generations of youth cohorts. Section V analyzes structural shifts in the youth labor market prior to the Great Recession and quantifies the role of the Great Recession in deepening these trends. Section VI concludes by discussing the policy implications of this report's findings.

II. Putting Recent Trends in Perspective: To What Degree has Youth Labor Market Attachment Changed in Recent Decades?

The United States has experienced substantial changes in youth labor market attachment over the past several decades. Compared to older workers, unemployment among youth is typically higher and youth tend to fare worse during recessions, partially due to their fewer years of work experience and shorter job tenure. This pattern was also true during the Great Recession, when the unemployment rates among individuals aged 16 to 24 years rose to a peak of 19.6 percent—nearly double the unemployment rate for all workers. Yet the drop in youth employment also coincided with a steep decline in labor force participation, such that the share of youth participating in the labor market—either working or looking for work—fell to an all-time low of 54.0 percent in August 2012.[7]

Moreover, this shift does not simply reflect cyclical factors stemming from the Great Recession. Since the early 1980s, youth employment has followed a cyclical pattern similar to that of other workers (see figure 1). The share of youth who had jobs rose during expansions and fell during recessions, but otherwise remained essentially unchanged over time. During the 2001 recession, the employment-to-population ratio fell sharply for youth and failed to rebound to its earlier cyclical peak before dropping sharply again during the Great Recession.[8] Prior to the Great Recession, the decline in employment among youth between 2000 and 2006 primarily reflected a decrease in labor force participation rather than an increase in joblessness—particularly among teens. In contrast, employment and labor force participation for most other age groups returned to pre-recession peaks by 2006, and even exceeded those levels in the case of individuals who were 60 to 65 years-old.

While all U.S. youth have been affected by the Great Recession, only teens appear to have had a decline in labor force attachment in the period prior to the most recent downturn. Table 1 shows that both groups of youth experienced a significant deterioration in labor market attachment during the Great Recession, yet only the younger group experienced large declines in the years just prior to this event. Among 16–19 year-olds there were significant declines in both the employment-to-population ratio (–5.8 percentage points) and the labor force participation rate (–5.4 percentage points) between 2000 and

New England Box 1. The Decline in Youth Labor Market Attachment in New England, 1990–2010

The decline in youth labor market attachment in New England was similar to trends observed nationally, with slight differences in timing and magnitude. Youth employment and labor force participation have typically been higher in New England, compared to the United States as a whole; although, the gap has narrowed since the early 1980s (see figure A1 in appendix A).[1] Among teens living in New England, employment and labor force participation rates decreased sharply during the recession of the early 1990s, partly reflecting the greater severity of downturn's impact in this region relative to the nation. Between 2000 and 2006, the employment-to-population ratio among teens fell by roughly 6 percentage points for both New England and the United States. Yet teens fared slightly better in New England during the Great Recession, a trend reflected in both a lower unemployment rate as well as slightly higher labor force participation rate. In addition, youth idleness is typically lower in the New England as a result of higher school enrollment among teens in the region. Similar trends in employment and education were observed for New England's young adults; although, declines in employment and labor force participation in the 2000–2006 period leading up to the Great Recession were steeper in New England than for the rest of the nation, despite similar increases in school enrollment.

1 Detailed statistics on labor force attachment and schooling trends for the region as well as each of the New England states is available in appendix B: New England Region and State-Level Labor Force Attachment and School Enrollment Trends. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

7 These data were obtained from the Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey* [database].

8 Note that these data are obtained from the March Current Population Survey. As such, employment status is determined based on activities in the week containing the 12th day of March each year. Teen employment is typically higher in the summer months with the peak occurring in July. However, an examination of these trends by each month of the calendar reveals a similar decline in labor market attachment. See appendix D for details. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

Table 1. Changes in U.S. Labor Market Attachment and School Enrollment Over Time by Age Group, 1980–2010

	Percent					Percentage Point Difference							
	1980	1990	2000	2006	2010	1980–1990		1990–2000		2000–2006		2006–2010	
Employment-to-Population Ratio													
Teens Aged 16 to 19 Years	**42.2**	**42.1**	**41.2**	**35.4**	**27.5**	**–0.1**	*	**–0.8**	***	**–5.8**	***	**–7.9**	***
Young Adults Aged 20 to 24 Years	**67.8**	**69.2**	**67.2**	**66.7**	**61.8**	**1.4**	***	**–2.0**	***	**–0.5**	***	**–5.0**	***
Aged 25 to 29 Years	73.5	77.1	74.7	75.4	73.0	3.6	***	–2.3	***	0.6	***	–2.3	***
Aged 30 to 39 Years	74.8	78.9	75.7	77.1	75.3	4.1	***	–3.2	***	1.4	***	–1.8	***
Aged 40 to 49 Years	74.4	80.4	77.6	77.6	75.8	6.0	***	–2.8	***	0.0		–1.8	***
Aged 50 to 59 Years	64.8	69.3	70.5	71.4	70.4	4.5	***	1.2	***	1.0	***	–1.0	***
Aged 60 to 65 Years	41.4	40.2	42.3	47.1	48.6	–1.2	***	2.1	***	4.7	***	1.5	***
Labor Force Participation Rate													
Teens Aged 16 to 19 Years	**49.1**	**50.6**	**50.5**	**45.1**	**38.4**	**1.5**	***	**0.0**		**–5.4**	***	**–6.7**	***
Young Adults Aged 20 to 24 Years	**75.1**	**76.6**	**74.9**	**75.2**	**73.8**	**1.4**	***	**–1.7**	***	**0.3**	***	**–1.4**	***
Aged 25 to 29 Years	78.9	82.6	79.3	81.4	82.3	3.7	***	–3.3	***	2.1	***	0.9	***
Aged 30 to 39 Years	78.7	83.3	79.3	81.5	82.7	4.6	***	–4.1	***	2.2	***	1.2	***
Aged 40 to 49 Years	77.7	83.9	80.7	81.5	82.5	6.2	***	–3.2	***	0.8	***	1.0	***
Aged 50 to 59 Years	67.6	72.3	73.0	74.6	76.3	4.7	***	0.7	***	1.6	***	1.7	***
Aged 60 to 65 Years	43.3	42.0	43.9	48.9	52.6	–1.3	***	2.0	***	5.0	***	3.6	***
Unemployment Rate													
Teens Aged 16 to 19 Years	**14.0**	**16.8**	**18.4**	**21.4**	**28.4**	**2.7**	***	**1.6**	***	**3.0**	***	**7.0**	***
Young Adults Aged 20 to 24 Years	**9.7**	**9.6**	**10.3**	**11.3**	**16.3**	**–0.1**		**0.6**	***	**1.0**	***	**5.0**	***
Aged 25 to 29 Years	6.8	6.6	5.7	7.4	11.2	–0.2	***	–0.9	***	1.7	***	3.8	***
Aged 30 to 39 Years	5.0	5.3	4.5	5.4	9.0	0.3	***	–0.8	***	0.9	***	3.6	***
Aged 40 to 49 Years	4.3	4.2	3.9	4.8	8.2	0.0		–0.3	***	0.9	***	3.4	***
Aged 50 to 59 Years	4.1	4.2	3.5	4.2	7.7	0.1	***	–0.7	***	0.8	***	3.5	***
Aged 60 to 65 Years	4.3	4.1	3.6	3.8	7.6	–0.1	**	–0.5	***	0.2	***	3.8	***
Share Enrolled in School													
Teens Aged 16 to 19 Years	**70.1**	**77.3**	**79.7**	**83.5**	**84.6**	**7.2**	***	**2.4**	***	**3.8**	***	**1.1**	***
Young Adults Aged 20 to 24 Years	**23.5**	**33.6**	**35.5**	**40.0**	**42.3**	**10.1**	***	**1.8**	***	**4.5**	***	**2.4**	***
Aged 25 to 29 Years	10.3	13.8	14.5	15.2	17.2	3.4	***	0.7	***	0.8	***	1.9	***
Aged 30 to 39 Years	6.1	8.8	7.5	7.7	8.5	2.7	***	–1.3	***	0.2	***	0.8	***
Aged 40 to 49 Years	3.2	5.7	4.8	4.3	4.4	2.5	***	–1.0	***	–0.5	***	0.2	***
Aged 50 to 59 Years	1.5	2.7	2.5	2.3	2.3	1.2	***	–0.2	***	–0.2	***	0.0	
Aged 60 to 65 Years	0.8	1.6	1.2	1.0	1.0	0.7	***	–0.4	***	–0.2	***	0.0	**
Share Not in School and Not Working													
Teens Aged 16 to 19 Years	**12.4**	**9.9**	**9.0**	**7.9**	**8.7**	**–2.5**	***	**–0.9**	***	**–1.0**	***	**0.7**	***
Young Adults Aged 20 to 24 Years	**21.3**	**17.2**	**18.7**	**17.2**	**19.4**	**–4.1**	***	**1.5**	***	**–1.5**	***	**2.2**	***
Aged 25 to 29 Years	23.5	19.1	21.0	20.0	21.3	–4.4	***	1.9	***	–1.0	***	1.2	***
Aged 30 to 39 Years	23.7	18.9	22.3	20.8	22.1	–4.8	***	3.4	***	–1.5	***	1.3	***
Aged 40 to 49 Years	24.9	18.4	21.2	21.3	22.9	–6.5	***	2.8	***	0.1	*	1.7	***
Aged 50 to 59 Years	34.7	29.9	28.8	27.9	28.9	–4.7	***	–1.1	***	–0.9	***	1.0	***
Aged 60 to 65 Years	58.1	58.9	57.0	52.5	51.0	0.8	***	–1.9	***	–4.6	***	–1.5	***

Source: Authors' analysis of 1980–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. The asterisks indicate that changes across years are significantly different from zero at the 10 (*), 5 (**), or 1 (***) percent level.

2006—similar in magnitude to the decline that occurred for this age group during the Great Recession. In contrast, although the employment-to-population ratio decreased slightly (–0.5 percentage points) for 20–24 year-olds between 2000 and 2006, the labor force participation for this group actually increased slightly during the period just prior to the Great Recession.

These changes in youth labor market attachment have occurred against a backdrop of continual increases in school enrollment over the past several decades. Both teens and young adults significantly increased their school enrollment from the mid-1980s onwards, and the period immediately preceding the Great Recession was no exception (see table 1). Between 2000 and 2006, school enrollment increased by 3.8 percentage points for teens and 4.5 percentage points for young adults.

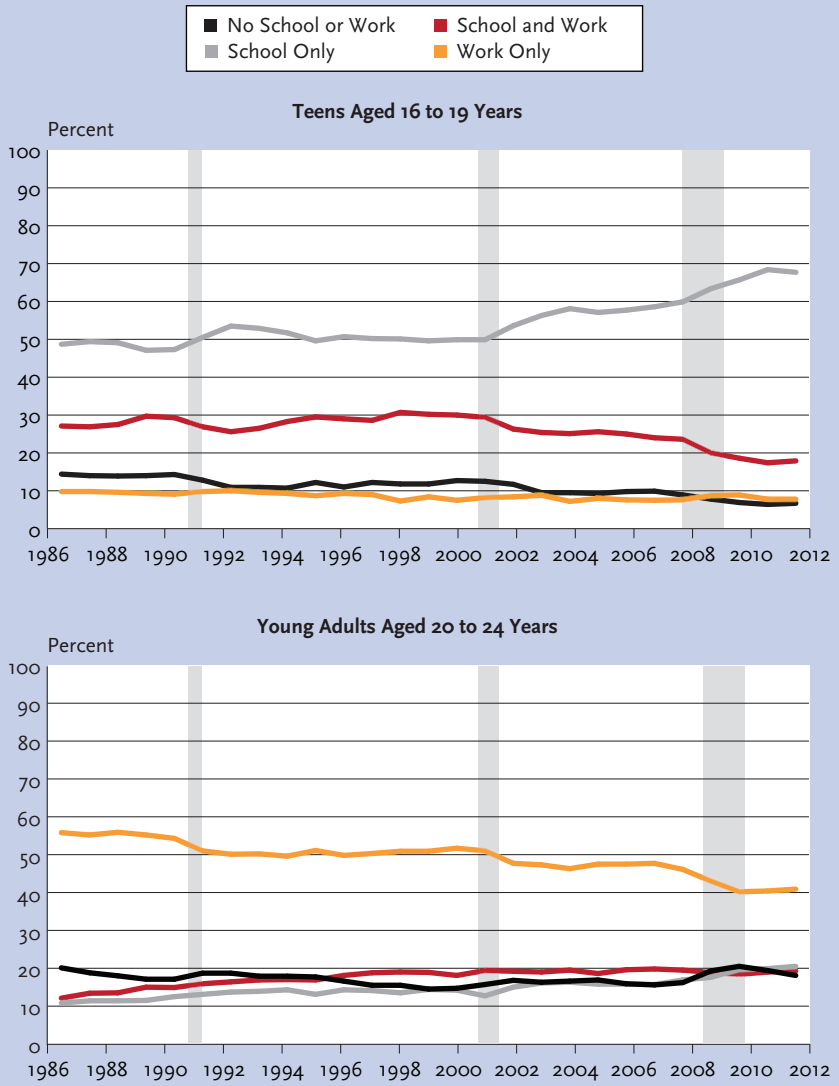
What has changed since 2000 is the degree to which youth combine school and work, with the recent increase in school enrollment perhaps coming at the expense of time spent in the paid labor market.

Among teens, there has been a sharp increase in the percent exclusively attending school and a concurrent decrease in the percent combining school and work (see figure 2). Among young adults, the increase in the percent exclusively attending school has meant that there are fewer individuals working exclusively, while the share combining school and work held steady over this period. This shift away from work and toward school is also reflected in a decreasing share of youth reporting that they want a job and an increasing share reporting that they did not work during the prior year because they were attending school (see table 2). These changes may reflect a number of factors, including a shift in preferences on the part of students and/or parents towards school as the central youth activity or employers becoming increasingly resistant to hiring teens—with the result that going to school has become the de facto youth activity.

Due to rising school enrollment, youth did *not* become increasingly idle prior to the Great Recession, despite their sharp decrease in labor force attachment—a finding contrary to conventional wisdom. The share of youth that is idle or NEET is largely procyclical—rising during recessions and falling during recoveries. Indeed, idleness among youth peaked in 2010 in the wake of the Great Recession and the subsequent jobless recovery (see figure 2). Yet there is no long-term upward trend that would suggest rising idleness among American youth. In fact, the share of youth not employed and not

Figure 2. Over Time, Youth Have Shifted Away From Combining Work and Schooling Towards Attending School Exclusively, But Idleness Has Not Increased

Trends Among U.S. Youth Regarding Work, School Attendance, and Idleness, 1986–2012



Source: Authors' analysis of Current Population Survey data, March 1986–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. CPS data on school enrollment not available prior to 1986. Shaded areas indicate recessions.

Table 2. Changes in the Reasons for Labor Market Detachment Among U.S. Youth, 2000–2012

	Teens Aged 16 to 19 Years							Young Adults Aged 20 to 24 Years						
	Percent			Percentage Point Difference				Percent			Percentage Point Difference			
	2000	2006	2012	2000–2006		2006–2012		2000	2006	2012	2000–2006		2006–2012	
Share Not in the Labor Force														
Wants a Job	12.6	10.8	9.5	–1.8	**	–1.3	**	15.4	13.1	13.7	–2.3	**	0.6	
Does Not Want a Job	87.4	89.2	90.5	1.8	**	1.3	**	84.6	86.9	86.3	2.3	**	–0.6	
Reasons for Not Working Last Year														
Going to School	87.7	89.2	89.0	1.6	**	–0.2		49.9	53.7	57.9	3.8	**	4.2	***
Could Not Find Work	2.0	2.1	3.6	0.2		1.5	***	7.6	6.4	12.4	–1.2		5.9	***
Taking Care of Home/Family	5.4	4.6	3.2	–0.8		–1.4	***	26.8	25.3	16.9	–1.5		–8.4	***
Ill or Disabled	2.0	2.0	2.2	–0.1		0.3		7.2	7.9	7.8	0.7		–0.1	
Other	2.9	2.1	1.9	–0.9	**	–0.2		8.5	6.7	5.1	–1.8	*	–1.6	**
Reasons for Unemployment														
Entering Labor Force	22.3	36.8	54.8	14.5	***	18.0	***	5.6	7.6	16.2	2.0		8.6	***
Re-entering Labor Force	52.3	44.4	27.9	–7.8	**	–16.6	***	37.8	41.0	38.6	3.2		–2.3	
Job Loss	16.2	12.2	13.7	–4.0	*	1.5		39.3	36.7	35.3	–2.6		–1.4	
Left Job	9.3	6.6	3.7	–2.7		–2.9	**	17.3	14.7	9.8	–2.6		–4.9	***
Reasons for Working Part-Time Last Year														
Wanted Part-Time Job	73.1	66.9	60.0	–6.2	***	–6.9	***	54.6	52.7	43.9	–1.9		–8.8	***
Could Not Find Full-Time Job	4.6	6.0	10.3	1.4	**	4.3	***	9.5	10.3	17.8	0.8		7.5	***
Slack Work	4.1	4.7	8.9	0.6		4.2	***	11.7	12.9	17.3	1.2		4.4	***
Other	18.2	22.4	20.8	4.2	***	–1.6		24.2	24.1	20.9	–0.1		–3.1	***

Source: Authors' analysis of Current Population Survey data, March 2000, 2006, and 2012, IPUMS-CPS.
Notes: "Share Not in the Labor Force" categories are expressed as a share of the total number of youth in a given age group who are not in the labor force. "Reasons for Not Working Last Year" are expressed as a share of youth in a given age group who did not work in the previous year. "Reasons for unemployment" are expressed as a share of the total number of youth in a given age group who are unemployed. This universe includes individuals who are new-entrants ("Entering the Labor Force") who are actively seeking employment, but were not previously part of the labor force. "Reasons for working part-time last year" are expresses as a share of youth in a given age group who worked part-time for at least one week last year. The asterisks indicate that changes across years are significantly different from zero at the 10 (*), 5 (**), or 1 (***) percent level.

enrolled in school has fallen since 2010 and is no higher than it was two decades ago in the years just after the 1990–1991 recession.

If teens and young adults have not become increasingly idle over the past several decades, is there still cause for concern? In short, yes. The decrease in labor force attachment prior to the Great Recession cannot entirely be accounted for by rising school enrollment. Between 2000 and 2006, youth labor force participation decreased regardless of school enrollment, although more so for those attending school (see figure 3). Although there is no long-term upward trend in idleness, roughly 9 percent of teens and approximately 19 percent of young adults have consistently not been enrolled in school nor employed.

In addition, teens appear to have experienced increasing difficulty in making the transition from school to work—even prior to the Great Recession. Between 2000 and 2006, the share of teens reporting that they are unemployed because they are "entering the labor force" and seeking their first job jumped by 14.5 percentage points (see table 2). It may be the case that there are fewer pathways leading teens from school to careers, particularly if they are not enrolling in college when finishing high school.

Some have suggested that the expansion of alternative pathways—such as apprenticeships or vocational and technical high schools—may boost labor force attachment among teens who face difficulties in entering the workforce without acquiring additional postsecondary training or education (Pathways to Prosperity 2011). Yet a recent report on career and technical education (CTE) programs finds that even these programs encounter difficulty in meeting their goals of both academic achievement as well as career preparation (U.S. Department of Education 2013). Roughly half of CTE students do not directly enter college upon leaving high school. Many of these students were having difficulty finding employment before the Great Recession; now finding employment is even more difficult for these individuals.

In contrast, young adults seem to have fared better than teens in the period prior to the Great Recession; however, young adults have borne a disproportionate share of the labor market impact of this most recent downturn, compared to older workers. Over the course of the Great Recession, "entering the labor force" increased as the reason given for unemployment among young adults between 20 and 24 years of age (see table 2). The unemployment rate among this group remains roughly twice that of the general U.S. population. Some have referred to this group as a "lost generation" of youth who have missed out on having early labor market experience, a scenario with potentially long-run ramifications for both individuals and society.[9] In the short run, while the labor market continues to strengthen, programs such as tax credits or subsidized jobs that allow employers to try out workers for eight weeks on a voluntary basis—while the person receives unemployment benefits and training (for example, GeorgiaWorks)—could help young adults obtain work experience during a critical early period in their careers. In the long run, strengthening partnerships between academic institutions and private industry groups can help ensure that programs of study lead to employment and possibly provide relevant work experience through structured internship and cooperative opportunities.

III. Diagnosing the Problem: To What Degree Has Youth Labor Market Attachment Changed for Different Demographic Groups?

Over the past several decades, the composition of the youth population has shifted along a number of dimensions. This compositional change reflects increasing shares of minority and immigrant populations in the United States as well as widening income inequality among families (Johnson and Lichter 2012; Sasser 2010). Minority, immigrant, and low-income groups typically have lower levels of labor market attachment and school enrollment compared to middle-class whites born in the United States. How much of the recent changes in youth labor market attachment can be attributed to changes in the composition of the youth population towards greater representation among demographic groups with lower attachment levels? Have these groups fallen even further behind?

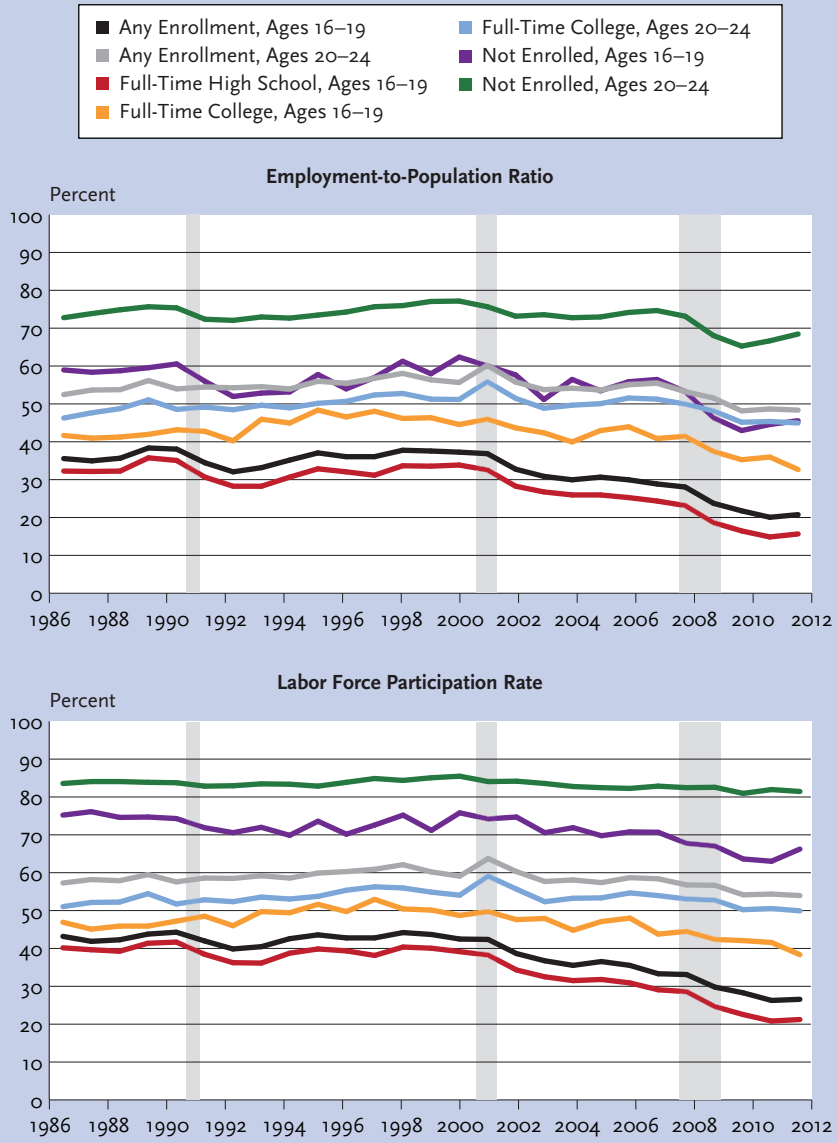
Looking at employment and educational trends across various demographic groups illustrates that, while disadvantaged groups typically have lower *levels* of labor market attachment the decreases in attachment, prior to and during the Great Recession have been fairly widespread across *all* demographic groups. For example, among teens, the employment-to-population ratio fell for both whites and minority groups even prior to the Great Recession (see figure 4).[10] Among young adults, employment dipped only among whites during this period. Moreover, U.S. college enrollment increased similarly across all major racial and ethnic groups, suggesting that the decrease in labor force attachment among whites is not entirely explained by greater college attendance.

9 "Idle Youth Raises 'Lost Generation' Fear," *CBS News*, November 27, 2009. Available at http://www.cbsnews.com/8301-18563_162-5792877.html. "The Jobless Young Left Behind," *The Economist*, September 10, 2011. Available at http://www.economist.com/node/21528614.

10 Labor force participation rates show a similar trend by race over time.

Figure 3. Youth Labor Force Attachment Has Decreased Regardless of School Enrollment, Although the Decline Is Greater for Those in School

Decrease in Labor Force Attachment Among U.S. Youth by School Enrollment, 1986–2012



Source: Authors' analysis of Current Population Survey data, March 1986–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. CPS data on school enrollment not available prior to 1986. Shaded areas indicate recessions.

Similarly, since 2000, foreign-born youth have experienced smaller decreases in employment and larger increases in college attendance, narrowing the gap with those born in the United States. Between 2000 and 2006, foreign-born youth experienced little change in employment rates while the rates for U.S.-born youth fell (see figure 5). During the Great Recession both groups experienced similar declines in employment. The share of foreign-born youth enrolled in college has increased substantially since 2000, approaching that the level observed for native-born youth. Interestingly, second-generation immigrants have experienced the largest decrease in employment and largest increase in college enrollment since 2000.[11]

Additional breakdowns by family income quartile reveal that labor force attachment fell similarly across all family incomes yet school enrollment increased more sharply among youth from low and middle-income families. Among teens, employment rates were higher for those with family incomes above the median, yet all income groups experienced a similar decrease in employment between 2000 and 2006 (see figure 6).[12] College enrollment among teens was fairly steady across all income groups during this period. In contrast, college enrollment increased significantly for young adults from low- and middle-income families—particularly among those in upper middle-class households between the 50th and 75th percentile of family incomes. Yet changes in employment were similar among all income quintiles for the 20–24 year-old age group.

How about changes by gender—are young women choosing to "opt out" of the labor force, similar to married women with children? Although in the past young women have had lower levels of labor market attachment and college enrollment compared to young men, this is no longer the case (Autor and Wasserman 2013). The gap in

11 "Second-generation immigrants" refers to individuals born in the United States to foreign-born parents.

12 Note that family income is based on the individual's relationship to the householder. For young adults between the ages of 20 and 24 years, there exists considerable variation in family income conditional on whether the respondent has established his/her own residency or still lives with a parent/guardian or other relative. Additionally, family income for most respondents who report living in group quarters (e.g. college dormitories) is equal to individual income. For teens age 16 to 19 years, over 90 percent of respondents report living with a parent/guardian or other relative, compared to only 48 percent of young adults age 20 to 24 years. As such, the reported measure of family income for young adults likely masks the degree of inequality related to the types of households from which these individuals originated. See appendix D for details. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

employment rates between male and female youth were at their narrowest point just prior to the 2001 recession (see figure 7). While both genders experienced similar declines in employment during the subsequent recession and recovery periods, the rate of college enrollment among young women exceeded that of young men—particularly among the young adult age group. While all teenagers experienced similar declines in employment during the Great Recession, young adult males were impacted more than their female counterparts.

Although it appears that all demographic groups in the United States experienced some decrease in labor market attachment during the past decade, detailed breakdowns by gender, race, and nativity show that most of the groups undergoing the greatest labor market declines experienced slower increases in school enrollment. For example, the employment-to-population ratio among teens was 20 percentage points lower for black versus white males as of 2000. Yet between 2000 and 2006 this ratio decreased by 7.1 percentage points for white males but only 4.3 percentage points for black males (see table 3A). Yet college enrollment increased by roughly 3 percentage points for both white and black males, suggesting that the decrease in labor force attachment among whites is not entirely explained by more schooling. In contrast, although school enrollment rose for all groups, the increase was greatest among Hispanics, followed by white females. As a result, while idleness fell among teens by at least 1 percentage point for most demographic groups, there was no significant change for native white males.

A similar pattern exists among young adults, with idleness actually increasing for native white males prior to the Great Recession. Among 20 to 24 year-olds, the employment-to-population ratio fell only for native whites (−3.6 percentage points for males and −1.3 percentage points for females) between 2000 and 2006, primarily reflecting lower labor force participation (see table 3B). However, for white females most of the decrease corresponds with a significant increase in school enrollment (+6.7 percentage points) that surpasses that for males (+4.3 percentage points). In contrast, labor force attachment actually increased for blacks and Hispanics between 2000 and 2006, rebounding after similar declines in the prior decade (1990–2000). School enrollment among both blacks and Hispanics also increased significantly—primarily among females. Finally, although the share of the population with no school or labor market attachment increased significantly for most groups during the Great Recession, this share had been decreasing for all groups except native white males between 2000 and 2006.[13]

How much of the observed changes in overall youth labor market attachment can be attributed to changes *between* demographic groups with lower levels of attachment versus changes in labor market attachment *within* demographic groups? Table 4 decomposes changes in labor market measures for youth into two parts. The first part is the change that occurred due to shifts between groups in the population's demographic structure, holding constant the labor force attachment of youth within each demographic group. The second part is the change that occurred due to shifts within groups, holding constant the population shares between demographic groups.

For teens, virtually all of the 5.8 percentage point decline in the employment-to-population ratio observed after 2000 can be attributed to falling employment *within* each demographic group. For example, if the demographic structure of the population had been constant between 2000 and

13 Given that native-born white males experienced the greatest decrease in labor force attachment (and have much lower rates of institutionalization than blacks or Hispanics), it does not appear that aggregate changes in labor force participation between 2000 and 2010 are being driven by incarceration. Other data from the Census (not shown here) indicate that native white males are institutionalized at far lower rates (roughly 1 percent of 16–19 year-olds and 2 percent of 20–24 year-olds) relative to Hispanics (twice the rate of whites) and blacks (four times the rate of whites). Moreover, the rate of institutionalization increased only slightly for native white males over this period. However, incarceration is likely to explain the relative large increase in the unemployment rate among black males aged 16–19 years. The share of black males that were institutionalized increased from 4.4 percent to 5.8 percent between 1990 and 2000 before falling to 4.5 percent in 2006.

Table 3A. Changes in Labor Market Measures for U.S. Teens Aged 16–19 Years by Demographic Group, 1980–2010

	Percent					Percentage Point Difference			
	1980	1990	2000	2006	2010	1980–1990	1990–2000	2000–2006	2006–2010
Employment-to-Population Ratio									
Male, White, Native	48.5	46.9	45.8	38.6	29.8	–1.5 ***	–1.2 ***	–7.1 ***	–8.8 ***
Female, White, Native	43.8	47.0	47.4	41.8	34.9	3.2 ***	0.4 **	–5.6 ***	–6.9 ***
Male, Black, Native	27.7	26.4	26.2	21.9	16.0	–1.3 ***	–0.2	-4.3 ***	-5.9 ***
Female, Black, Native	21.8	26.6	30.0	26.3	20.4	4.8 ***	3.5 ***	–3.8 ***	–5.9 ***
Male, Hispanic	42.4	39.8	39.9	35.0	25.0	–2.6 ***	0.1	–4.9 ***	–10.0 ***
Female, Hispanic	32.7	33.3	32.7	29.6	23.8	0.6	–0.6 *	–3.2 ***	–5.8 ***
Labor Force Participation Rate									
Male, White, Native	55.9	55.1	54.4	47.9	40.6	–0.8 ***	–0.7 ***	–6.5 ***	–7.3 ***
Female, White, Native	49.5	53.7	55.1	49.8	44.0	4.1 ***	1.4 ***	–5.3 ***	–5.8 ***
Male, Black, Native	36.8	39.5	40.5	37.2	30.7	2.7 ***	1.1 ***	–3.3 ***	–6.5 ***
Female, Black, Native	30.2	38.8	44.4	40.6	35.1	8.5 ***	5.6 ***	–3.8 ***	–5.4 ***
Male, Hispanic	50.5	51.6	50.1	45.1	37.6	1.0 ***	–1.5 ***	–5.0 ***	–7.5 ***
Female, Hispanic	38.7	42.8	42.2	38.7	34.2	4.1 ***	–0.6	–3.5 ***	–4.5 ***
Unemployment Rate									
Male, White, Native	13.3	14.8	15.9	19.3	26.6	1.5 ***	1.1 ***	3.4 ***	7.3 ***
Female, White, Native	11.5	12.3	13.9	15.9	20.7	0.8 ***	1.6 ***	2.0 ***	4.8 ***
Male, Black, Native	24.7	33.1	35.3	41.2	48.1	8.4 ***	2.2 ***	5.9 ***	6.8 ***
Female, Black, Native	27.9	31.5	32.4	35.3	41.9	3.6 ***	0.9 *	2.9 ***	6.6 ***
Male, Hispanic	16.1	22.8	20.2	22.4	33.4	6.7 ***	–2.6 ***	2.2 ***	11.0 ***
Female, Hispanic	15.3	22.0	22.5	23.6	30.4	6.7 ***	0.5	1.2 **	6.8 ***
Share Enrolled in School									
Male, White, Native	71.0	78.1	81.4	84.5	85.1	7.1 ***	3.3 ***	3.1 ***	0.6 ***
Female, White, Native	70.5	78.9	83.6	87.4	88.1	8.4 ***	4.7 ***	3.8 ***	0.7 ***
Male, Black, Native	68.8	73.4	75.7	78.9	79.8	4.6 ***	2.2 ***	3.2 ***	0.9 **
Female, Black, Native	70.8	76.0	79.0	82.3	83.9	5.1 ***	3.1 ***	3.3 ***	1.5 ***
Male, Hispanic	61.8	67.8	64.5	72.0	77.1	6.1 ***	–3.3 ***	7.5 ***	5.1 ***
Female, Hispanic	62.1	70.6	71.9	78.1	81.8	8.5 ***	1.3 ***	6.2 ***	3.7 ***
Share Not in School and Not Working									
Male, White, Native	8.8	7.1	6.2	6.1	7.5	–1.7 ***	–1.0 ***	–0.1	1.4 ***
Female, White, Native	12.4	8.7	6.6	5.7	6.1	–3.8 ***	–2.1 ***	–0.9 ***	0.4 ***
Male, Black, Native	17.1	16.3	15.8	14.5	15.1	–0.9 ***	–0.5 *	–1.3 ***	0.6
Female, Black, Native	20.3	15.9	12.7	11.1	11.1	–4.4 ***	–3.2 ***	–1.6 ***	–0.1
Male, Hispanic	15.0	13.0	14.1	10.7	11.4	–2.1 ***	1.2 ***	–3.5 ***	0.7 ***
Female, Hispanic	22.8	17.9	16.7	12.9	11.3	–4.8 ***	–1.2 ***	–3.8 ***	–1.5 ***

Source: Authors' analysis of 1980–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. The asterisks indicate that changes across years are significantly different from zero at the 10 (*), 5 (**), or 1 (***) percent level.

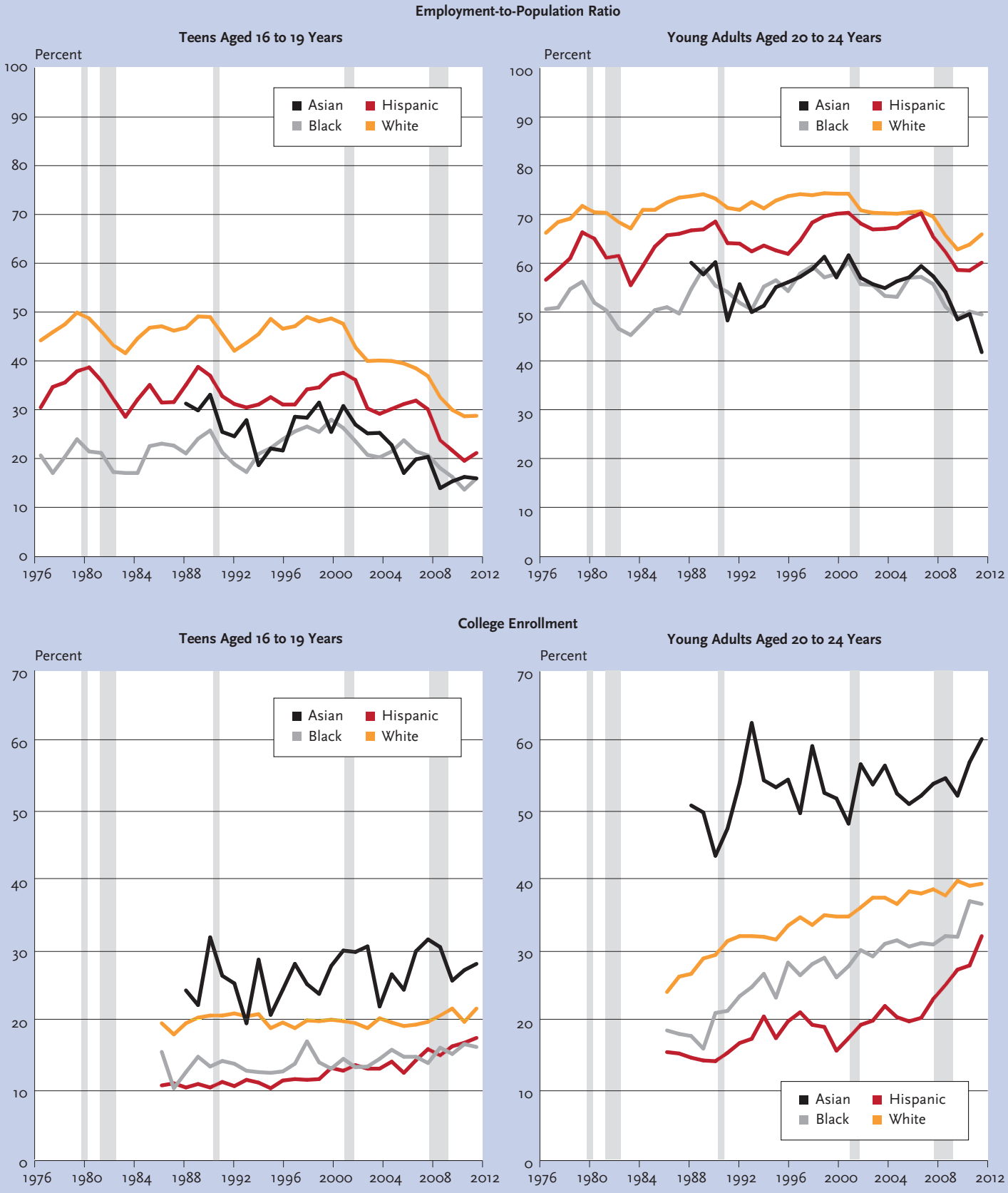
Table 3B. Changes in Labor Market Measures for U.S. Young Adults Aged 20–24 Years by Demographic Group, 1980–2010

	Percent					Percentage Point Difference							
	1980	1990	2000	2006	2010	1980–1990		1990–2000		2000–2006		2006–2010	
Employment-to-Population Ratio													
Male, White, Native	76.5	76.1	75.3	71.7	65.7	–0.4	***	–0.8	***	–3.6	***	–6.0	***
Female, White, Native	65.1	70.3	71.0	69.7	66.9	5.3	***	0.7	***	–1.3	***	–2.8	***
Male, Black, Native	60.4	57.3	49.9	51.8	44.9	–3.1	***	–7.4	***	1.9	***	–6.9	***
Female, Black, Native	50.1	52.6	57.2	57.8	53.4	2.6	***	4.6	***	0.6		–4.4	***
Male, Hispanic	74.8	74.3	68.6	74.5	67.1	–0.5	*	–5.7	***	6.0	***	–7.4	***
Female, Hispanic	52.6	55.1	52.5	57.5	56.7	2.5	***	–2.6	***	5.0	***	–0.8	*
Labor Force Participation Rate													
Male, White, Native	84.7	83.0	82.2	79.6	77.8	–1.7	***	–0.8	***	–2.5	***	–1.9	***
Female, White, Native	69.9	75.3	76.7	76.0	75.4	5.4	***	1.3	***	–0.7	***	–0.6	***
Male, Black, Native	73.8	71.8	64.6	68.6	65.8	–2.0	***	–7.2	***	4.0	***	–2.8	***
Female, Black, Native	61.5	66.2	71.1	72.8	71.9	4.7	***	4.9	***	1.7	***	–0.9	*
Male, Hispanic	83.8	84.0	76.3	82.4	80.5	0.2		–7.7	***	6.1	***	–1.9	***
Female, Hispanic	59.0	63.7	60.9	65.5	68.0	4.7	***	–2.8	***	4.6	***	2.5	***
Unemployment Rate													
Male, White, Native	9.7	8.3	8.3	9.9	15.5	–1.4	***	0.1		1.6	***	5.6	***
Female, White, Native	6.9	6.6	7.4	8.2	11.2	–0.3	***	0.7	***	0.9	***	2.9	***
Male, Black, Native	18.2	20.2	22.7	24.5	31.8	2.0	***	2.5	***	1.7	***	7.3	***
Female, Black, Native	18.6	20.5	19.5	20.6	25.8	1.9	***	–1.0	***	1.1	**	5.2	***
Male, Hispanic	10.8	11.6	10.2	9.6	16.7	0.8	***	–1.4	***	–0.6	**	7.1	***
Female, Hispanic	10.9	13.5	13.8	12.3	16.6	2.6	***	0.3		–1.6	***	4.3	***
Share Enrolled in School													
Male, White, Native	25.2	34.6	35.7	40.0	41.3	9.3	***	1.2	***	4.3	***	1.3	***
Female, White, Native	22.3	34.5	39.6	46.3	48.5	12.2	***	5.2	***	6.7	***	2.2	***
Male, Black, Native	19.1	24.6	27.1	29.4	31.9	5.4	***	2.6	***	2.3	***	2.4	***
Female, Black, Native	21.7	29.2	32.9	37.5	42.6	7.5	***	3.7	***	4.5	***	5.1	***
Male, Hispanic	18.5	25.1	20.9	22.4	26.9	6.6	***	–4.2	***	1.5	***	4.4	***
Female, Hispanic	17.8	28.5	27.5	32.3	36.2	10.7	***	–1.0	***	4.8	***	3.9	***
Share Not in School and Not Working													
Male, White, Native	12.0	9.9	11.1	12.2	15.8	–2.1	***	1.1	***	1.1	***	3.7	***
Female, White, Native	25.3	17.3	15.6	14.4	15.0	–8.0	***	–1.6	***	–1.3	***	0.6	***
Male, Black, Native	28.9	29.7	35.3	33.1	37.1	0.8	**	5.6	***	–2.2	***	4.0	***
Female, Black, Native	37.6	33.2	28.3	25.8	26.0	–4.5	***	–4.9	***	–2.4	***	0.2	
Male, Hispanic	17.3	17.0	23.0	16.6	20.8	–0.3		5.9	***	–6.3	***	4.2	***
Female, Hispanic	39.5	33.6	36.4	29.9	27.9	–6.0	***	2.8	***	–6.4	***	–2.1	***

Source: Authors' analysis of 1980–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. The asterisks indicate that changes across years are significantly different from zero at the 10 (*), 5 (**), or 1 (***) percent level.

Figure 4. Despite Lower Initial Levels of Labor Market Attachment for Minorities, Employment Has Fallen and College Enrollment Has Risen for All Demographic Groups Since 2000

Employment and College Enrollment Among U.S. Youth by Race and Ethnicity, 1976–2012



Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. "Asian or Pacific Islander" race category not available prior to 1988. CPS data on school enrollment not available prior to 1986. Shaded areas indicate recessions.

2006, the overall employment-to-population ratio for teens would have fallen by 5.7 percentage points (see table 4). Similarly, all of the increase in school enrollment and the corresponding decrease in the NEET share occurred within groups, suggesting that these trends reflect widespread forces across much of the youth population. Similar trends occurred during the Great Recession.

Likewise, the changes observed during the Great Recession appear to affect all demographic groups *within* the young adult population. In contrast, the smaller decrease in labor force participation that occurred among young adults between 1990 and 2000 appears to be evenly split between changes in the composition of the population versus changes in participation rates within each demographic group. For example, of the nearly 2 percentage point decline in the employment-to-population ratio between 1990 and 2000, nearly 1 percentage point was due to shifts in the demographic structure of the young adult population, with the remainder due to shifts in the employment-to-population ratio within each demographic group (see table 4).

Yet it could also be the case that declining labor market attachment among youth reflects changes in the size of more recent youth cohorts relative to earlier ones.[14] To explore this, we look at the share of total employment versus the share of total population accounted for by youth over time. Between 1990 and 2010, the youth share of the U.S. population declined by 0.9 percentage points for young adults but held fairly steady for teens (see figure 8). Thus it would appear that there has been no great increase in the labor supply of youth relative to older workers over the past several decades.

However, even prior to the Great Recession, the share of *employment* held by teens fell disproportionately relative to the change in their share of the population. Between 2000 and 2006, the teen employment share fell by 0.8 percentage points compared to a change of only –0.1 percentage points in the share of the population held by this group (see figure 8). In contrast, the change in the employment share of young adults was similar in magnitude to that of their population share. Moreover, employment shares have been increasing over time for individuals 50 years of age and older, as the Baby Boom generation continues to move through the labor force. Thus, it appears that the decline in teen employment since 2000 cannot be explained by changes in cohort sizes, but rather by something that is uniquely affecting more recent cohorts of youth relative to older workers. These forces are explored in the next section.

New England Box 2. Declining Labor Force Attachment Among New England Youth by Demographic Group, 2000–2010

Similar to the nation, declining labor force attachment among New England youth was due to decreases *within* each demographic group, rather than changes in the composition of the youth population. Falling employment within each demographic group of youth in New England accounted for nearly the entire 6 percentage point drop in the employment-to-population ratio for teens between 2000 and 2006 (see table A1 in appendix A). The magnitude of the decrease was virtually identical to the trend observed for teens in the region during the Great Recession. Among young adults, both employment and labor force participation decreased by 1.3 percentage points between 2000 and 2006—significantly different from what occurred across the nation and largely due to decreases within each demographic group. As a result, idleness did not decrease as much among young adults in the region, compared to the United States as a whole; although, the rate of idleness was still significantly lower in New England than the rest of the nation. During the Great Recession, both employment and labor force participation fell for young adults in New England—largely due to similar decreases between all demographic groups.

14 For example, it has been well documented that the influx of the Baby Boom generation into the labor market increased both the aggregate unemployment rate as well as the teen unemployment rate (Korenman and Neumark 2000; Abraham and Shimer 2001). The latter occurred as the increase in the youth population increased the labor supply of youth relative to older workers. Because youth are imperfect substitutes for more experienced workers, wages decrease in occupations typically held by youth but are constrained by the minimum wage and other factors, thereby leading to an increase in youth unemployment.

Table 4. Shift-Share Analysis of Change in Labor Market Measures for U.S. Youth by Demographic Group, 1990–2010

	Teens Aged 16 to 19 Years							Young Adults Aged 20 to 24 Years						
	Percent				Percentage Point Difference			Percent				Percentage Point Difference		
	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010
Overall Employment-to-Population Ratio														
Actual	42.08	41.24	35.44	27.51	–0.85	–5.80	–7.92	69.20	67.23	66.73	61.78	–1.98	–0.50	–4.95
Between Groups	42.08	41.34	41.00	40.51	–0.74	–0.34	–0.50	69.20	68.30	68.26	67.84	–0.91	–0.04	–0.42
Within Groups	42.08	41.98	36.31	28.73	–0.11	–5.67	–7.58	69.20	68.43	67.47	62.84	–0.78	–0.96	–4.62
Overall Labor Force Participation														
Actual	50.55	50.53	45.08	38.42	–0.02	–5.45	–6.67	76.59	74.93	75.20	73.78	–1.66	0.27	–1.42
Between Groups	50.55	49.92	49.65	49.28	–0.63	–0.28	–0.37	76.59	75.92	75.90	75.58	–0.67	–0.01	–0.32
Within Groups	50.55	51.22	45.89	39.50	0.67	–5.33	–6.39	76.59	75.97	75.81	74.57	–0.62	–0.16	–1.24
Overall Unemployment Share														
Actual	8.47	9.30	9.64	10.90	0.83	0.35	1.26	7.38	7.70	8.46	12.00	0.32	0.76	3.54
Between Groups	8.47	8.58	8.64	8.77	0.11	0.07	0.12	7.38	7.62	7.64	7.74	0.24	0.03	0.10
Within Groups	8.47	9.24	9.58	10.77	0.77	0.34	1.19	7.38	7.54	8.34	11.73	0.16	0.80	3.39
Overall School Enrollment Rate														
Actual	77.30	79.66	83.46	84.58	2.36	3.80	1.12	33.64	35.45	39.96	42.32	1.81	4.51	2.36
Between Groups	77.30	77.02	76.92	76.61	–0.28	–0.10	–0.31	33.64	33.66	33.64	33.60	0.02	–0.01	–0.05
Within Groups	77.30	80.28	84.05	85.22	2.98	3.77	1.17	33.64	35.90	40.69	43.04	2.26	4.79	2.35
Overall NEET Share														
Actual	9.87	8.97	7.94	8.68	–0.90	–1.03	0.73	17.21	18.73	17.20	19.36	1.52	–1.54	2.17
Between Groups	9.87	10.18	10.33	10.62	0.31	0.15	0.29	17.21	17.94	17.97	18.35	0.73	0.03	0.38
Within Groups	9.87	8.55	7.57	8.21	-1.32	–0.99	0.64	17.21	17.67	16.49	18.47	0.46	–1.18	1.98

Source: Authors' analysis of 1990–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.

Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. "Actual" refers to the actual value of the measure observed in the data. "Between Groups" refers to the value of the measure due to shifts in the population shares between groups, holding constant the value of the measure within each demographic group. "Within Groups" refers to the value of the measure due to shifts within each demographic group, holding constant the population shares between groups.

IV. Determining the Factors: How Have Shifts in Employment Across Industries and Occupations Affected Youth Labor Market Attachment?

What factors might be driving the recent decline in youth labor market attachment since 2000? Recent studies have argued that the youth labor market has experienced structural changes in recent decades—either on the demand side, the supply side, or some combination of the two (Sum et al. 2013). For example, it has been suggested that shifts in labor demand towards jobs that require higher levels of skill, education, and experience tend to favor older workers with greater qualifications, putting youth at a disadvantage—particularly those who do not complete college (Annie E. Casey Foundation 2012; Pathways to Prosperity Project 2011). This trend may have been exacerbated during the Great Recession as older workers—who lost substantial housing wealth and retirement savings—delayed their exit from or returned to the labor market, resulting in fewer positions opening up along the employment ladder (Edwards and Hertel-Fernandez 2010). Others point to the polarization of the labor market over time, which may have have resulted in lower-paying service occupations that were traditionally held by youth to become increasingly saturated by adult workers—particularly immigrants (Smith 2011; 2012). The suitability of using alternative sources of labor may have also been enhanced by changes in actual or perceived differences between youth and older workers in work behaviors such as punctuality, attendance, and quit rates (Commonwealth Corporation 2013). Finally, changes in institutional factors—such as labor laws that restrict the hours or types of work for teens or hiring practices that inadvertently screen out younger job applicants—may have created barriers to employing youth (Commonwealth Corporation 2013).

Shift-Share Analysis

To determine the degree to which the recent decline in youth labor market attachment reflects shifts in aggregate demand versus shifts towards using alternative sources of labor, we look at changes in employment across broad industry and occupation categories. On the one hand, shifts in employment *between* industries and occupations over the past several decades may have favored those firms that are less apt to employ youth labor. If this is the case, then perhaps policymakers may want to invest in programs that better prepare youth to find jobs in industries and occupations that are currently growing. Alternatively, over time there may have been a shift away from employing youth *within* industries and occupations and towards employing other workers, such as low-skilled adults or immigrants. If this is the case, a better understanding of the underlying factors behind this shift is necessary before weighing the costs and benefits of alternative policy solutions.

To assess the extent to which recent trends in youth employment can be attributed to shifts in employment *between* versus *within* industries and occupations, we do a shift-share analysis to decompose into two parts the change in the overall share of youth that are employed in the U.S. labor market. The first part is the decrease that occurred due to shifts in the U.S. economy's industrial or occupational structure, holding constant the share of youth employed within each industry. The second part is the decrease that occurred due to the lower employment of youth workers within industries and occupations, holding constant the employment shares between industries.

The shift-share analysis reveals that the overall decline in teen employment prior to the Great Recession does not simply reflect the decline of large industry or occupation groups, but rather indicates a shift away from employing teens within most industries and occupations. For example, the decomposition shows that between 2000 and 2006, the –0.73 percentage point decrease in the overall employment share for teens is entirely due to lower employment of youth workers *within* industries and occupations over time (see the left panel of table 5). In fact, if the employment share of teens within each industry had not decreased, the overall employment share of teens would have increased slightly from

New England Box 3. Falling Employment Shares for New England's Teens, 1990–2010

Falling teen employment shares in New England reflect large decreases in teen employment within occupations and industries. Although the decrease in employment shares observed for teens in New England were similar to those for the entire nation, the timing and magnitude of these changes varied somewhat. The region's teens and young adults both experienced larger decreases in employment between 1990 and 2000 compared to the nation (see table A2 in appendix A). These changes were entirely driven by decreasing employment of youth within industries and occupations versus shifts in demand between industries and occupations. In the period just prior to the Great Recession, employment shares in New England fell only slightly for teens and actually increased for young adults. For New England teens, falling employment shares reflected large decreases in employment within occupations and industries—similar to the nation as a whole. Yet for young adults, rising employment shares reflected a combination of increasing demand for the industries and occupations that typically employ 20 to 24 year olds as well as increasing employment of young adults within more industries and occupations.

5.3 percent in 2000 to 5.4 percent in 2006. In contrast, if the share of employment *between* industries had not shifted, the overall employment share of teens would have fallen even further to 4.3 percent in 2006. A similar pattern is observed for teens if we decompose employment shares by occupation. Again, this result suggests that there has been a shift away from employing teens within broad job categories, a trend that was underway well before the onset of the Great Recession. In contrast, we find no such pattern for young adults aged 20 to 24 years prior to the Great Recession. Between 2000 and 2006, the overall employment share for young adults was virtually unchanged (see the right panel of table 5).

During the Great Recession, employment was negatively impacted for all youth—a continuation of the ongoing trend away from employing youth *within* most industries and occupations. Between 2006 and 2010, the shift-share analysis shows the same pattern of within-industry and within-occupation shifts for both teens as well as young adults (see table 5). All of the variation over this period is due to lower employment shares for youth *within* industries and occupations rather than shifts in employment between industries and occupations that are growing versus shrinking.

Detailed Industry and Occupation Analysis

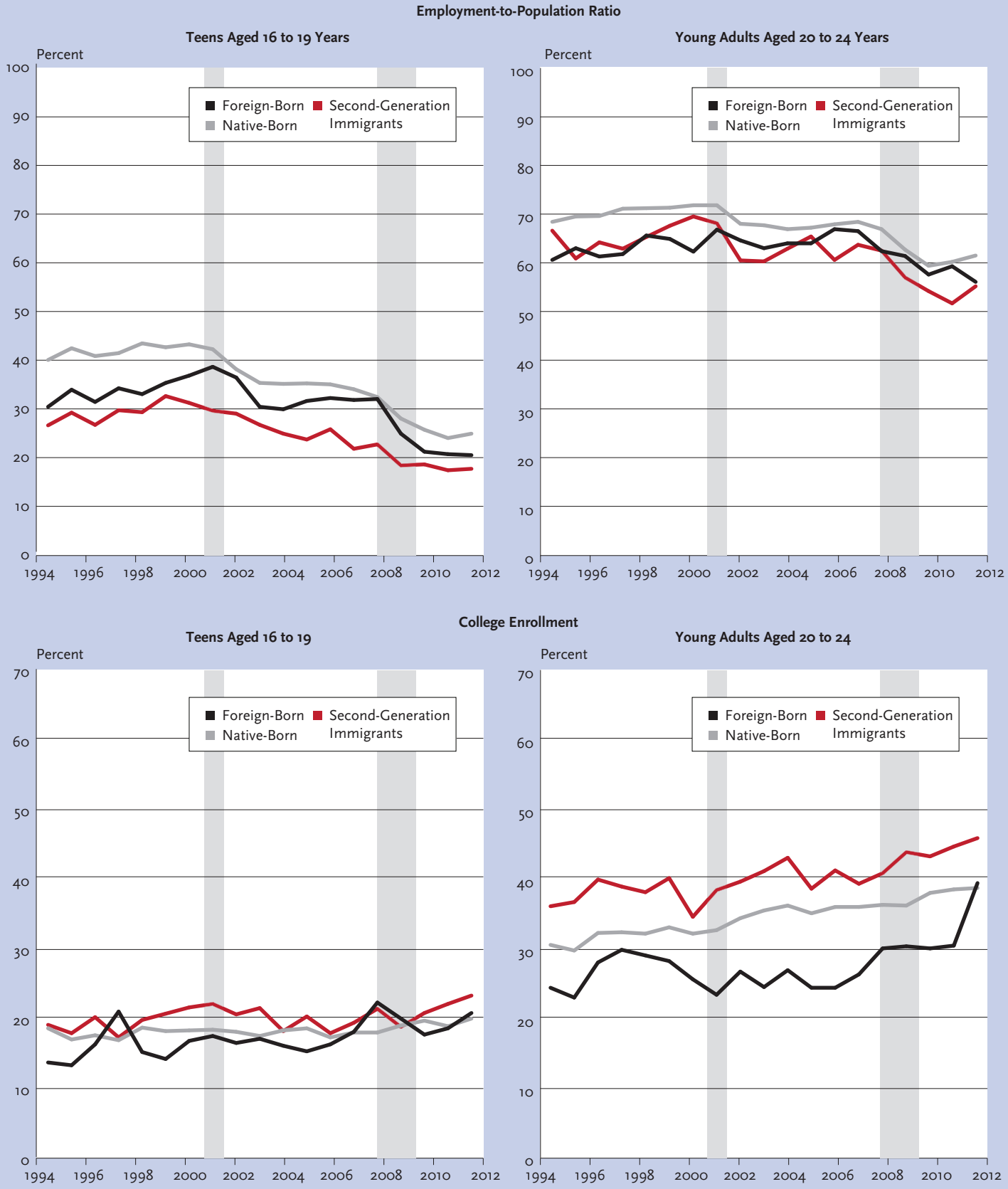
In fact, the industries and occupations that typically employ youth were growing during this period, not shrinking. The top panel of table 6 compares the employment growth between 2000 and 2006 by industry for teens versus all workers—for all industries combined as well as the "top teen industries," that typically employ a high share of teens.[15] Between 2000 and 2006, teen employment decreased by 7.6 percent for all industries combined compared to an increase of nearly the same magnitude (7.7 percent) for all workers. Even among the "top teen industries," such as eating and drinking establishments, employment fell by 4.9 percent for teens while growing by 12.1 percent for all workers combined.

The simple fact is that the U.S. economy is employing fewer teens within almost *all* industries—regardless of whether the particular industry's employment share is growing or declining. For example, as of 2000, the majority of teens (80.0 percent) were employed in teen-intensive industries where youth employment shares subsequently fell between 2000 and 2006 (see the top panel of table 6). Within these industries, about 30 percent of teens worked in declining industries in which teen employment fell much more steeply during the period (–25.3 percent) than employment for all workers combined (–0.9 percent). Yet, about 50 percent of teens worked in industries that were growing as a share of the U.S. economy between 2000 and 2006. Unfortunately, teen employment lagged far behind (+2.5 percent) that of all workers (+21.3 percent) within these industries. Only 6.6 percent of teens worked in the "top teen

15 "Top teen industries/occupations" or "teen-intensive industries/occupations" are defined as those ranked in the top 50 in terms of the number of youth employed or the share of youth employment within the industry or occupation in 2000 or 2006.

Figure 5. Since 2000, Foreign-Born Youth Have Experienced Smaller Decreases in Employment and Larger Increases in College Enrollment, Narrowing the Gap with Natives

Employment and College Enrollment Among U.S. Youth by Nativity, 1994–2012



Source: Authors' analysis of Current Population Survey data, March 1994–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. CPS data on nativity not available prior to 1994. "Second-generation immigrants" refers to individuals born in the United States to foreign-born parents. Shaded areas indicate recessions.

Table 5. Shift-Share Analysis of Change in Employment Share for U.S. Youth by Industry and Occupation, 1990–2010

	Teens Aged 16 to 19 Years							Young Adults Aged 20 to 24 Years						
	Percent				Percentage Point Difference			Percent				Percentage Point Difference		
	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010
Industry														
Overall Employment Share														
Actual	5.28	5.18	4.45	3.58	–0.10	–0.73	–0.86	11.30	10.08	10.17	9.85	–1.22	0.09	–0.32
Between Industries	5.28	5.26	5.38	5.56	–0.02	0.12	0.18	11.30	11.34	11.42	11.46	0.04	0.07	0.05
Within Industries	5.28	5.18	4.33	3.32	–0.10	–0.85	–1.01	11.30	10.00	9.96	9.46	–1.30	–0.04	–0.50
Occupation														
Overall Employment Share														
Actual	4.98	5.27	4.47	3.60	0.29	–0.80	–0.86	11.22	10.25	10.20	9.90	–0.97	–0.04	–0.31
Between Occupations	4.98	5.31	5.38	5.52	0.33	0.08	0.14	11.22	11.37	11.29	11.33	0.15	–0.09	0.04
Within Occupations	4.98	4.79	3.88	2.99	–0.18	–0.91	–0.89	11.22	9.85	9.75	9.16	–1.37	–0.10	–0.59

Source: Authors' analysis of 1990–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. "Actual" refers to the actual value of the measure observed in the data. "Between Industries/Occupations" refers to the value of the employment share for youth due to shifts in aggregate employment between industries/occupations, holding constant the share of youth employment within each industry/occupation. "Within Industries/Occupations" refers to the value of the employment share for youth due to shifts in the share of youth employment within each industry/occupation, holding constant the share of aggregate employment between industries/occupations.

industries" where youth employment shares subsequently grew between 2000 and 2006.

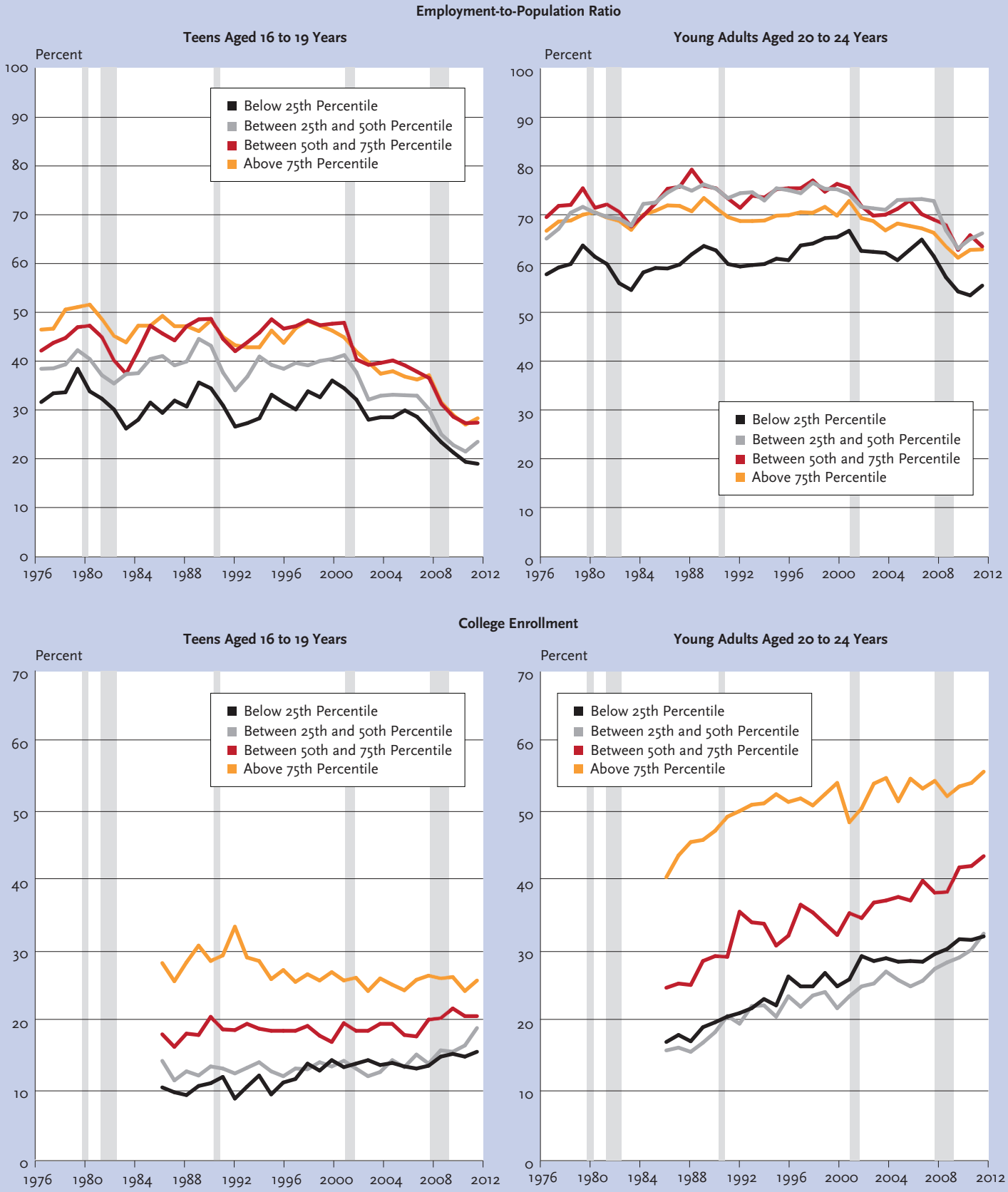
A very different picture emerges for young adults in the years leading up to the Great Recession. Between 2000 and 2006, employment for young adults grew slightly *faster* than the rate for all workers—for all industries combined as well as those that typically employ the majority of young adults (see the bottom panel of table 6). As of 2000, young adults were equally likely to be employed in industries where youth employment shares ultimately rose versus fell during the period preceding the Great Recession. They were also slightly more likely to be employed in industries that were growing as a share of the economy between 2000 and 2006.

In contrast to the experience of young adult workers prior to the Great Recession, what is driving the underlying trend towards lower teen employment within industries and occupations over time? There are two possibilities. First, aggregate employment may be falling, but teen employment is falling much more rapidly. This suggests a shift towards substituting more capital for labor—either in the form of technology or outsourcing—and this trend may disproportionately affect teenage workers. For example, the retail industry has historically been a source of employment for many teens, but department stores, grocery stores, and video rental stores now use self-checkout lanes and online ordering, curtailing the need for staff (see table 7). Other industries that historically employed teens to perform routine tasks—including agricultural production and automotive repair—now substitute technology to accomplish many routine activities.[16]

16 See appendix C, tables C1 and C3 for a detailed listing of industries and youth employment shares. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

Figure 6. Despite Initial Differences in the Level of Attachment, Trends in Employment and College Enrollment Were Fairly Similar Across Family Income Quartiles Between 2000 and 2006

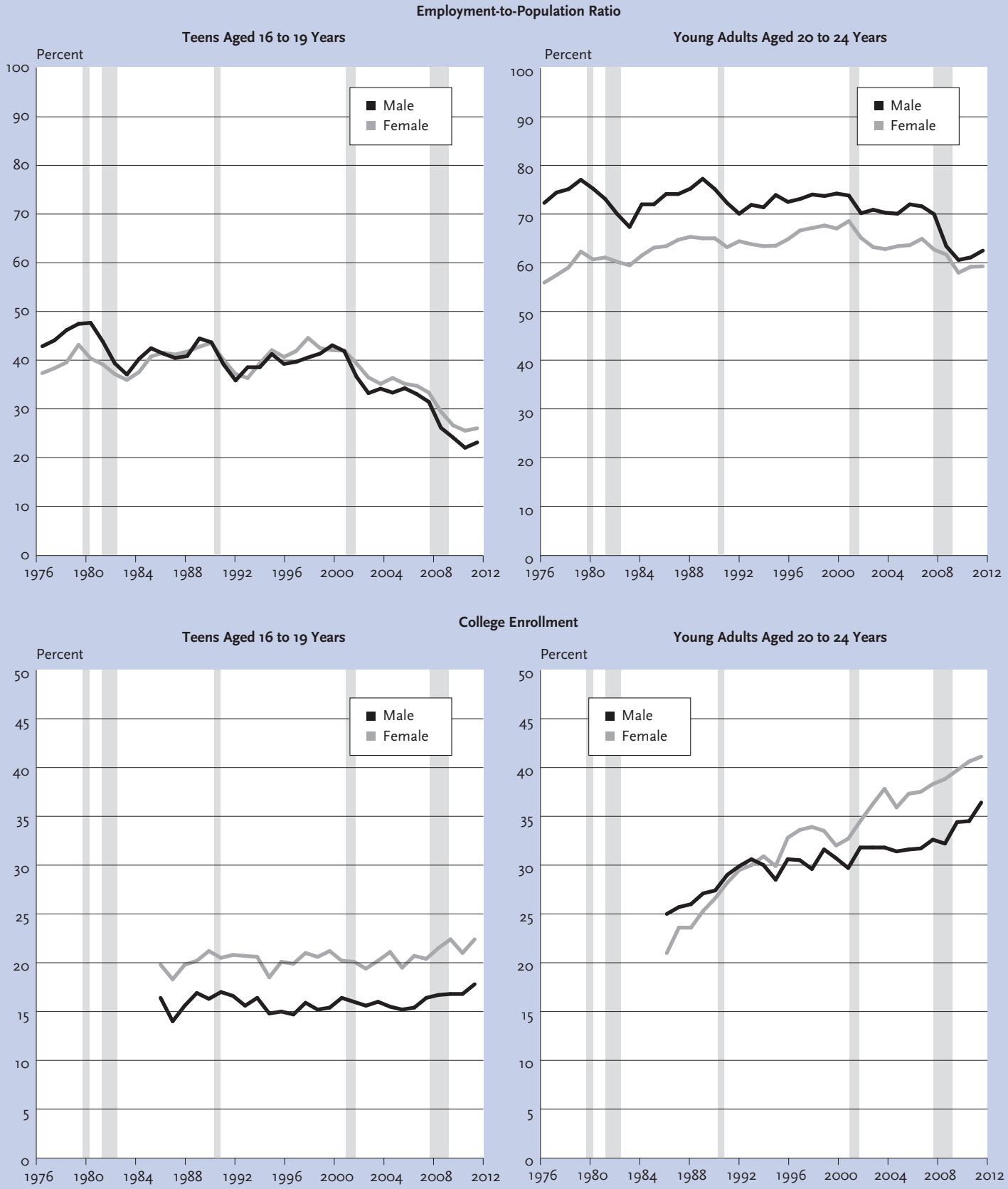
Employment and College Enrollment Among U.S. Youth by Family Income Quartile, 1976–2012



Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. CPS data on school enrollment not available prior to 1986. See appendix D for more information on reported family income. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm. Shaded areas indicate recessions.

Figure 7. Labor Force Attachment Has Decreased More for Males, While College Enrollment Has Increased More for Females—Particularly Among Youth Aged 20 to 24 Years

Employment and College Enrollment Among U.S. Youth by Gender, 1976–2012



Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. CPS data on school enrollment not available prior to 1986. Shaded areas indicate recessions.

Second, aggregate employment may be increasing; but teen employment may be increasing much less rapidly, or even falling. This suggests a shift towards substituting other workers for teens—possibly those that are more skilled, have fewer restrictions on hours or working conditions, or are willing to accept a lower wage. In the leisure and hospitality industry, for example, restaurants and lodging establishments may require that workers stay into the late evening hours (see table 7A). Indeed, recent survey evidence suggests that extensive screening of applicants and laws limiting the work schedules of teens have restricted teen employment in restaurants and retail/grocery stores (Commonwealth Corporation 2013). In addition, there is some evidence that adult immigrants may be substituting for teen labor in industries that have traditionally employed teens such as nursing and personal care facilities, landscaping firms, and personal services (Smith 2012). The bottom line is that there are a variety of demand, supply, and institutional factors that may be driving the declining teen employment rates.

However, it could be the case that the industry-level data is too aggregated to reveal shifts in demand that disproportionately affect youth. For example, it could be the case that while eating and drinking establishments are a growing industry, now automated order-entry systems and handheld devices for credit card payments allow restaurants to hire fewer wait staff and cashiers, yet still serve the same number of customers. But even when we examine the decrease in teen employment shares by occupation, there are many jobs (for example, wait staff) where employment is growing but just not among teens (see table 7B).[17] This analysis suggests that, in the United States, there is a broad shift away from employing teens.

Interestingly, many young adults have found employment in the very same industries and occupations that are shedding teens—a trend that was evident even before the Great Recession hit. These jobs include both declining occupations—such as bank tellers, garage and service station workers, and retail sales clerks—as well as growing occupations—such as cashiers, restaurant workers, janitors, laborers, and healthcare workers (see table 7B). Although other studies have documented this trend during the recovery after the Great Recession (Vedder, Denhart, and Robe 2013; Fogg and Harrington 2011), our analysis suggests that there may be other long-term factors at work which suggest either 1) that employers have an increasing preference to hire more mature youth workers or 2) there is an increasing supply of young adults willing to take jobs previously filled by teens. One could imagine that institutional factors—such as a rising minimum wage or teen work laws—could possibly make hiring young adults versus teens more attractive to employers. Alternatively, a greater share of young adults may be willing to take traditional teen jobs in the short term as more and more young adults seek to combine school with part-time work.

With so many young adults in the United States unemployed or underemployed, it has been suggested that older workers are crowding youth out of the labor market (Edwards and Shierholz 2010). Indeed, figure 1 shows that while employment and labor force participation declined for youth between 2000 and 2006, these measures rose among 60–65 year-olds. This gap in labor market attachment appears to have widened during the Great Recession as employment fell sharply among youth, while holding fairly steady for older workers. This has caused some to speculate that those older workers—who lost substantial housing wealth and retirement savings during the financial crisis—chose to delay retirement or to return to the labor market, resulting in fewer positions opening up along the employment ladder (Edwards and Hertel-Fernandez 2010).

However, a recent study finds no evidence that, in the aggregate, older workers are crowding out younger workers from the labor market. Controlling for national economic

17 See appendix C, tables C2 and C4 for a detailed listing of occupations and youth employment shares. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

conditions and changes in state labor markets over time, the employment rate for older workers has no significant impact on the employment rate for young adults between 20 and 24 years of age (Munnell and Wu 2012). Additional analyses find no consistent evidence that changes in the employment rates of older workers adversely affect the wage rates of their younger counterparts. These patterns are consistent for both men and women as well as for groups with different levels of education.

How can it be true that there is no evidence that older workers are crowding out younger workers when the popular perception suggests that youth are having a hard time getting entry-level, career-path jobs? There may well be some instances of older employees delaying retirement and thus impeding the hiring of younger workers within some companies, in certain locales, or in localized industries. Yet,

Table 6. Industry Breakdown of U.S. Youth Employment, 2000–2006

	Teens Aged 16–19 Years				
	Percent of Teens Employed in 2000	Teen Share as a Percent of Total Employment		Employment: Percent Change 2000–2006	
		2000	2006	Teens	All Workers
All Industries	**100.0**	**5.2**	**4.4**	**–7.6**	**7.7**
Top Teen Industries	**86.7**	**7.3**	**6.2**	**–4.9**	**12.1**
Industries for Which the Teen Share of Employment Fell between 2000 and 2006 and Represent:	80.0	7.2	6.0	–7.5	12.3
A Decreasing Share of the Economy	28.9	6.5	4.9	–25.3	–0.9
An Increasing Share of the Economy	51.1	7.8	6.6	2.5	21.3
Industries for Which the Teen Share of Employment Increased between 2000 and 2006 and Represent:	6.6	8.9	10.3	26.4	8.7
A Decreasing Share of the Economy	2.5	8.3	9.1	–7.4	–15.4
An Increasing Share of the Economy	4.1	9.3	10.9	47.0	25.1
	Young Adults Aged 20–24 Years				
	Percent of Young Adults Employed in 2000	Young Adult Share as a Percent of Total Employment		Employment: Percent Change 2000–2006	
		2000	2006	Young Adults	All Workers
All Industries	**100.0**	**10.1**	**10.2**	**8.6**	**7.7**
Top Young Adult Industries	**83.2**	**11.0**	**11.2**	**12.7**	**11.2**
Industries for Which the Young Adult Share of Employment Fell between 2000 and 2006 and Represent:	44.6	9.5	8.8	2.8	10.8
A Decreasing Share of the Economy	20.8	8.4	7.6	–10.0	–1.1
An Increasing Share of the Economy	23.8	10.7	9.8	14.0	23.9
Industries for Which the Young Adult Share of Employment Increased between 2000 and 2006 and Represent:	38.6	13.7	15.2	24.2	11.8
A Decreasing Share of the Economy	13.8	14.4	15.6	2.4	–5.7
An Increasing Share of the Economy	24.8	13.3	15.1	36.4	20.8

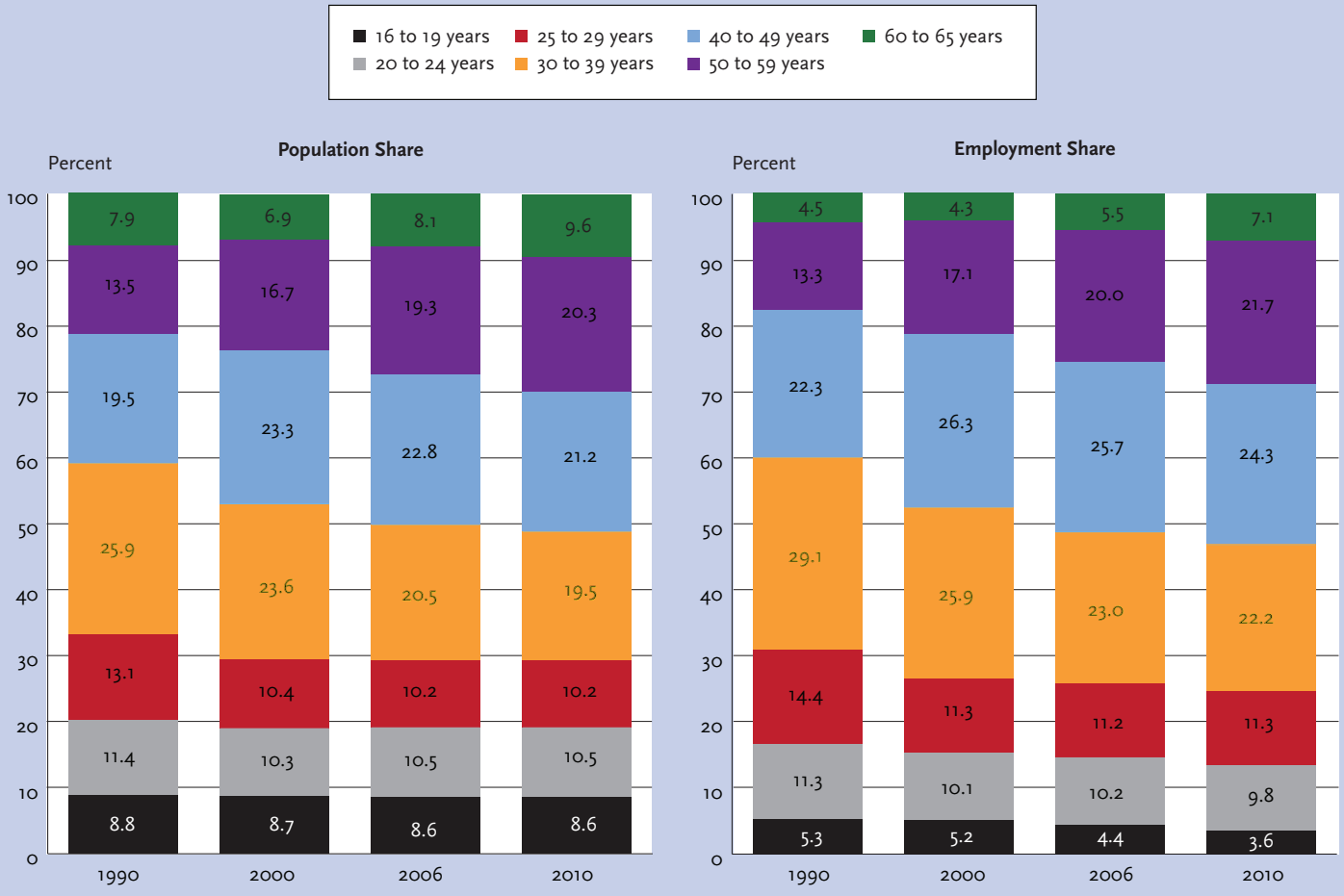
Source: Authors' analysis of 2000 U.S. Decennial Census and 2005–2007 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 are estimates from the 2005–2007 ACS 3-year PUMS. Industry analysis conducted at the subsector, three-digit level. To provide consistent industry classification over the entire period, the IPUMS-USA harmonized variable IND1990 is used. Industries classified as a "decreasing share of the economy" are those where industry employment is growing slower than aggregate employment and are further limited to those that account for at least 0.5 percent of youth employment in 2000 or 2006. Industries classified as an "increasing share of the economy" are those where industry employment is growing faster than aggregate employment.

across the entire U.S. working population, it does not appear that crowding out is a significant factor in explaining unemployment among youth—particularly young adults. Even though the *share* of older U.S. workers delaying retirement has increased relative to previous decades, the sheer size of the Baby Boom generation means that a significant *number* of seniors are still exiting the labor force, and these retirements continue to generate a sizable number of vacancies. A recent study estimates that over the next decade, retiring workers will create 14.3 million job openings, and there will be more job openings per young adults created from retirements than there were in the 1990s, when young adults' employment prospects were more robust (Carnevale, Hanson, and Gulish 2013).

It is also true is that for over a decade now, younger workers have simply faced greater challenges when entering the labor market compared to previous generations. Since 2000, youth have sought to enter a labor market buffeted by two recessions, the most recent one being the most severe economic downturn since the Great Depression. Young workers also are contending with a shift in labor demand towards jobs that require higher levels of skill, education, and experience. These labor market conditions tend to favor older workers with greater qualifications, putting today's youth at a disadvantage—particularly those who

Figure 8. The Teen Employment Share Fell Disproportionately Relative to Their Population Share Between 2000 and 2010

U.S. Population and Employment Shares by Age Group, 1990–2010



Source: Authors' analysis of 1990–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively.

Table 7A. Employment Changes for Industries Where U.S. Teen Employment Share Is Falling, 2000–2006

Industries for Which the Teen Share of Employment Fell between 2000 and 2006 and Represent:	Employment: Percent Change 2000–2006			Youth Share of Employment: Percentage Point Change 2000–2006	
	Teens Aged 16–19 Years	Young Adults Aged 20–24 Years	All Workers	Teens Aged 16–19 Years	Young Adults Aged 20–24 Years
A Decreasing Share of the Economy					
Agricultural Production, Crops	–8.2	6.3	0.1	–0.5	0.6
Automotive Repair and Related Services	–34.0	–7.6	–9.4	–1.3	0.2
Book and Stationery Stores	–17.2	–2.3	–2.8	–1.8	0.1
Department Stores	–27.2	12.8	0.1	–4.1	2.1
Gift, Novelty, and Souvenir Shops	–20.8	–6.0	–19.0	–0.3	1.9
Grocery Stores	–17.9	6.7	–5.9	–2.6	1.8
Hardware Stores	–12.9	13.8	3.7	–2.2	1.1
Household Appliance Stores	–39.4	15.2	–3.7	–2.5	2.5
Jewelry Stores	–14.7	16.3	5.1	–1.4	1.4
Retail Bakeries	–15.0	11.9	–7.3	–1.0	2.1
Retail Trade, N.S.	–46.2	–21.2	–27.2	–2.4	0.9
Video Tape Rental	–51.4	15.3	–16.0	–15.4	9.5
An Increasing Share of the Economy					
Apparel and Accessory Stores, Except Shoe	31.1	55.1	35.6	–0.7	3.0
Auto and Home Supply Stores	–20.9	21.5	10.1	–2.2	1.5
Beauty Shops	0.0	41.3	15.1	–0.5	2.3
Drug Stores	–11.8	49.3	22.5	–4.0	3.1
Eating and Drinking Places	2.8	32.7	20.0	–3.6	2.2
Food Stores, N.E.C.	–10.7	26.2	16.8	–3.5	1.1
Hospitals	–16.8	15.7	11.8	–0.3	0.2
Lumber and Building Material Retailing	3.4	39.9	26.9	–1.0	1.4
Miscellaneous General Merchandise Stores	188.1	366.1	248.2	–2.0	4.3
Miscellaneous Personal Services	4.6	34.1	30.9	–1.3	0.3
Miscellaneous Retail Stores	15.0	35.3	18.2	–0.2	1.7
Motor Vehicle Dealers	–16.4	18.5	10.5	–1.1	0.8
Nursing and Personal Care Facilities	–12.2	19.8	9.2	–1.0	0.9
Residential Care Facilities, Without Nursing	26.0	53.9	45.9	–0.7	0.6
Shoe Stores	0.9	19.2	8.1	–1.7	2.5
Sporting Goods, Bicycles, and Hobby Stores	–4.8	26.2	11.2	–2.6	2.5
Theaters and Motion Pictures	–2.4	18.8	9.4	–2.0	1.1
Veterinary Services	–5.6	40.0	29.4	–2.8	1.3

Source: Authors' analysis of 2000 U.S. Decennial Census and 2005–2007 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 are estimates from the 2005–2007 ACS 3-year PUMS. Industry analysis conducted at the subsector, three-digit level. To provide consistent industry classification over the entire period, the IPUMS-USA harmonized variable IND1990 is used. Industries classified as a "decreasing share of the economy" are those where industry employment is growing slower than aggregate employment and are further limited to those that account for at least 0.5 percent of youth employment in 2000 or 2006. Industries classified as an "increasing share of the economy" are those where industry employment is growing faster than aggregate employment.

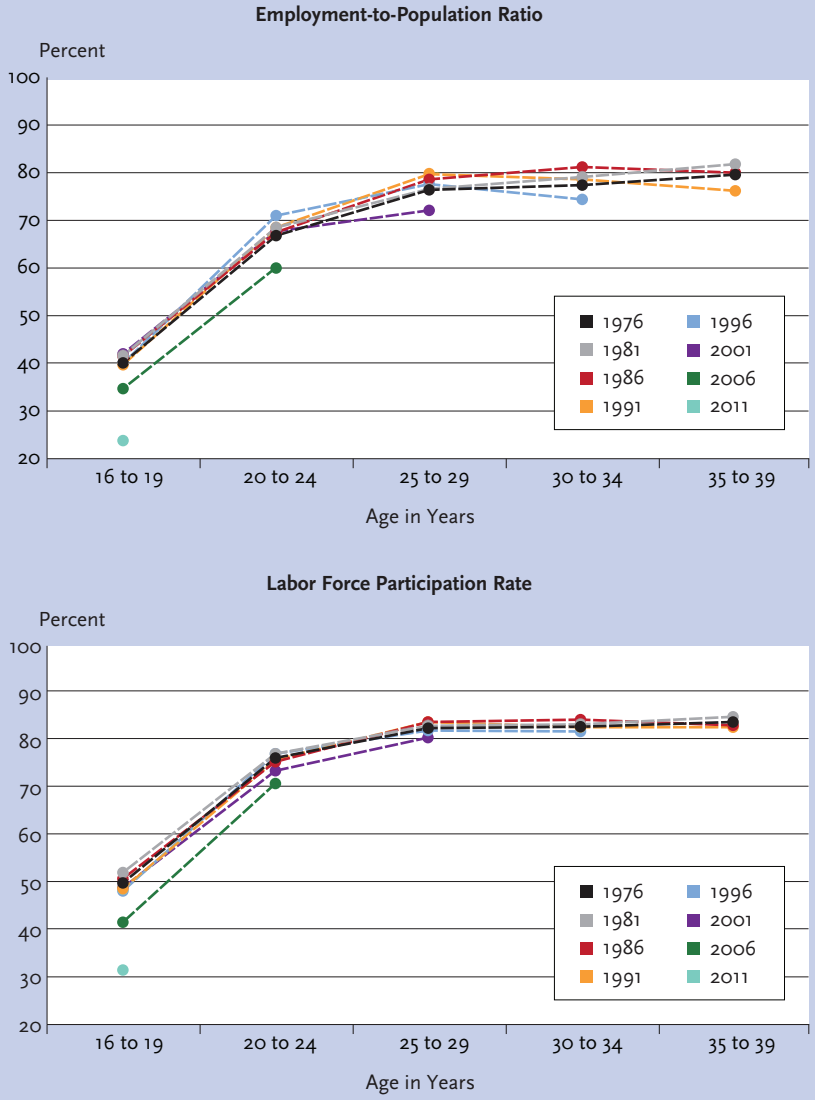
Table 7B. Employment Changes for Occupations Where U.S. Teen Employment Share Is Falling, 2000–2006

Occupations for Which the Teen Share of Employment Fell between 2000 and 2006 and Represent:	Employment: Percent Change 2000–2006			Youth Share of Employment: Percentage Point Change 2000–2006	
	Teens Aged 16–19 Years	Young Adults Aged 20–24 Years	All Workers	Teens Aged 16–19 Years	Young Adults Aged 20–24 Years
A Decreasing Share of the Economy					
Automobile Mechanics	–40.8	–4.5	–13.2	–1.3	1.1
Bank Tellers	–19.8	20.1	6.0	–2.4	3.7
Child Care Workers	–3.7	16.2	–0.3	–0.4	2.7
Garage and Service Station Related Occupations	–32.7	24.3	4.3	–9.6	4.0
Interviewers, Enumerators, and Surveyors	–55.1	–10.6	–19.6	–3.2	1.5
Kitchen Workers	–35.3	13.4	–10.4	–9.9	4.5
Motion Picture Projectionists	–21.0	27.9	2.4	–7.3	7.0
Office Machine Operators, N.E.C.	–41.7	–8.0	–11.7	–3.1	0.8
Photographic Process Workers	–33.9	7.9	–17.0	–2.5	5.7
Production Helpers	–2.8	4.7	2.0	–0.6	0.5
Retail Sales Clerks	–17.3	17.1	–0.4	–2.7	3.0
An Increasing Share of the Economy					
Animal Caretakers, Except on Farms	20.3	62.5	33.4	–1.4	3.1
Carpenters	–12.4	27.0	20.0	–0.9	0.7
Cashiers	4.0	34.9	13.9	–2.8	3.4
Cooks, Variously Defined	–12.1	25.6	16.0	–4.0	1.3
Dental Laboratory and Medical Appliance Technicians	–8.8	57.6	37.5	–1.8	2.4
Farm Workers	–6.8	8.8	7.9	–1.8	0.1
Hairdressers and Cosmetologists	11.1	45.2	19.5	–0.1	2.1
Health Aides, Except Nursing	–13.3	25.7	22.9	–2.0	0.3
Hotel Clerks	–21.7	23.8	14.6	–4.1	2.5
Janitors	3.0	27.4	24.7	–1.1	0.2
Laborers Outside Construction	–5.2	16.1	12.1	–2.2	0.6
Managers Of Food-Serving and Lodging Establishments	10.6	30.0	26.1	–0.3	0.3
Misc Food Prep Workers	14.1	62.0	30.6	–4.0	3.9
Nursing Aides, Orderlies, and Attendants	–3.0	43.1	32.7	–1.1	0.9
Painters, Construction and Maintenance	8.2	26.2	25.6	–0.5	0.1
Parking Lot Attendants	5.7	41.4	34.6	–3.2	1.2
Personal Service Occupations, N.E.C.	36.4	76.5	48.3	–2.8	3.1
Stock and Inventory Clerks	–10.2	33.2	17.8	–4.2	2.2
Waiter's Assistant	13.6	50.6	22.2	–2.8	3.3
Waiter/Waitress	2.1	36.8	18.9	–3.3	4.3

Source: Authors' analysis of U.S. Decennial Census (1980–2000) and American Community Survey 3-year (2005–2007; 2009–2011) Public Use Microdata Samples (IPUMS-USA).
Note: Reported values for 2006 and 2010 are derived from the ACS 3-year 2005–2007 and 2009–2011 PUMS respectively. Occupational analysis conducted at the five-digit, broad occupation level. To provide consistent occupation classification over the entire period, the IPUMS-USA harmonized varable OCC1990 is used. Occupations where employment share were decreasing between 2000 and 2006 are further limited to those that account for at least 0.5 percent of youth employment in 2000. Occupations that are a decreasing share of the economy are those where aggregate employment is decreasing or growing less than average. Occupations that are an increasing share of the economy are those where aggregate employment is growing more than average.

Figure 9. More Recent Youth Cohorts Are Entering the Labor Force with Lower Levels of Attachment Compared to Earlier Generations—Even Prior to the Great Recession

Cohort Analysis of Labor Market Attachment for U.S. Youth over Time



Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. Data are plotted such that successive synthetic cohorts of youth are followed over time. See appendix D for more information. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

do not complete college (Annie E. Casey Foundation 2012; Pathways to Prosperity Project 2011). While young workers experience higher rates of unemployment compared to their older counterparts at nearly all levels of education, the gap is much narrower among those workers with a college degree. Indeed, recent reports show that in 2011, the unemployment rate among U.S. workers with a bachelor's degree or higher was 5.7 percent among 20 to 29 year-olds, compared to 4.3 percent for the population aged 25 years and older.[18]

Structural versus Cyclical Analysis

To what degree have these ongoing trends in the labor market been reinforced or even intensified by the Great Recession? Clearly, the Great Recession was both deeper and longer than the two previous downturns. Recessions often involve some combination of cyclical and structural adjustments. Cyclical adjustments are reversible changes in employment due to slowdowns in aggregate demand. Structural adjustments are permanent changes in employment that shift workers across industries or occupations. Previous studies have suggested that jobless recoveries are a function of larger structural shifts in the economy that may have a disproportionately negative impact on youth, relative to other workers (Groshen and Potter 2003).

Industries tend to be classified by how they fare during the business cycle. Industries that lose jobs during a recession and regain jobs during a recovery are considered to be procyclical (for example, department stores). Some industries are countercyclical—gaining jobs during the recession and losing them during the recovery (for example, the federal government). Industries that lose jobs during both a recession and recovery are structural losers (for example, manufacturing). And finally, industries that gained jobs during both a recession and recovery are structural gainers (healthcare is a good example of what is sometimes called a recession-proof industry) (Groshen and Potter 2003; Aaronson, Rissman, and Sullivan 2004). Thus far, the employment changes that have taken place during the Great Recession and ongoing recovery can be characterized as roughly half

18 These statistics on the unemployment rate of college-educated 20 to 29 year-olds draw on unpublished data from the Bureau of Labor Statistics as reported in Catherine Rampell, "Yes, Even Young College Graduates Have Low Unemployment," *New York Times*, March 5, 2013. Statistics on the unemployment rate for college-educated individuals 25 years and older are from the Bureau of Labor Statistics and are available at http://www.bls.gov/cps/demographics.htm#education.

structural and half cyclical. If we sum up employment changes in industries undergoing either structural gains or structural losses, we find that 50.0 percent of peak employment prior to the Great Recession underwent some sort of structural change (see table 8).[19]

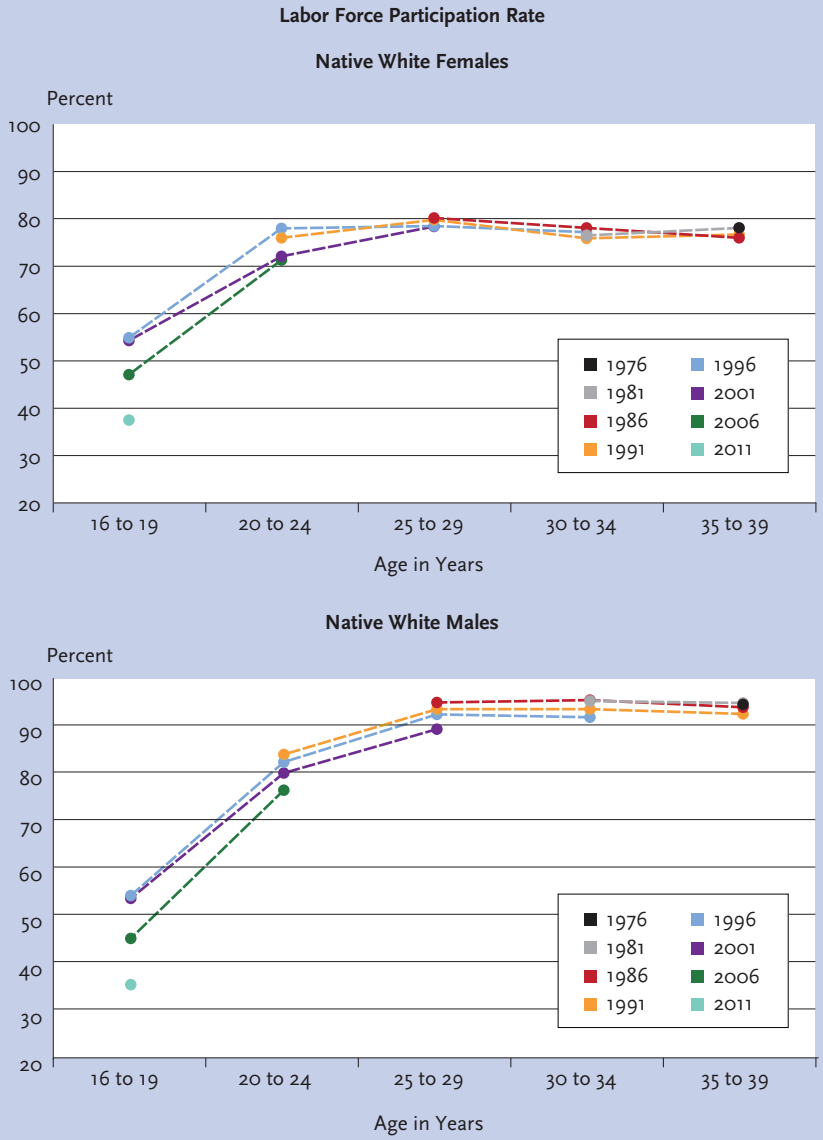
Relative to all workers, it appears that youth jobs were disproportionately located in industries showing structural gains during the Great Recession. The sum of employment shares in these structurally affected industries was 62.5 percent for teens and 57.1 percent for young adults (see table 8). This is partly because youth are disproportionately represented in such industries in addition to these industries undergoing large changes. Many of the changes are within industries—including eating and drinking establishments, general merchandise stores, and educational services—that showed structural *gains* in employment, consistent with the earlier trends observed between 2000 and 2006. These are new jobs for which individuals need to acquire the right skills to be hired. As such, one might expect that employment among the least skilled—such as teens or young adults—would fall until these individuals were able to acquire the right training for these new positions. The bottom line analysis is that the Great Recession appears to have reinforced the pre-existing labor market trends that were observed among youth for the 2000 to 2006 period leading up to the recession.

V. Assessing the Consequences: Have Low Levels of Labor Market Attachment Among Recent Cohorts of Youth Persisted Over Their Careers?

There is a concern that current cohorts of youth are entering the labor market with lower levels of attachment; and as a result, may experience far-reaching consequences over their lifetimes. On the one hand, young adults experiencing *involuntary* detachment from the labor market early in their careers as a result of high unemployment levels following the Great Recession may experience wage scarring, more frequent future spells of unemployment, and lower lifetime incomes (Bell and Blanchflower 2011). On the other

Figure 10. Some Demographic Groups—That Have Experienced Sharp Increases in School Enrollment—Appear To Be Investing in Education and Simply Delaying Entry into the Labor Market

Cohort Analysis of Labor Force Attachment for U.S. Native White Youth over Time



Source: Authors' analysis of Current Population Survey data, March 1994–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. CPS data on nativity not available prior to 1994. Data are plotted such that successive synthetic cohorts of youth are followed over time. See appendix D for more information. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

19 Note that our classification uses April 2013 as the "return to peak" (employment) cut-off even though the recovery is still ongoing. As such this might be an overestimate given that some of the structural employment may fall into the cyclical category as industries continue to recover jobs until we reach peak employment again. See appendix D for more information. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

Table 8. Changes in Employment During the Great Recession and Recovery for Top Industries That Employ U.S. Youth, 2007–2013

Performance Over Business Cycle	Share of Peak Employment (percent)			Youth Employment Share at Peak (percent)	
	All Workers	Teens Aged 16 to 19 Years	Young Adults Aged 20 to 24 Years	Teens Aged 16 to 19 Years	Young Adults Aged 20 to 24 Years
All Industries					
Procyclical	19.6	19.0	21.5	4.5	10.9
Countercyclical	30.3	18.5	21.4	2.8	7.1
Structural Gain	29.9	50.4	38.0	7.8	12.7
Structural Loss	20.2	12.1	19.1	2.8	9.4
Sum of Structural Changes	50.0	62.5	57.1	5.8	11.4
Top Industries Experiencing Structural Gains					
Food Services and Drinking Places	7.0	33.1	15.8	21.5	22.2
General Merchandise Stores	2.2	5.0	3.9	10.6	17.9
Educational Services	2.2	2.4	2.8	5.3	13.1
Nursing and Residential Care Facilities	2.2	2.1	2.3	4.5	10.6
Social Assistance	1.8	1.6	1.9	4.0	10.9
Professional and Technical Services	5.7	1.5	3.9	1.3	6.9
Health and Personal Care Stores	0.7	1.4	1.2	8.8	16.9
Ambulatory Health Care Services	4.0	1.3	2.9	1.5	7.2
Personal and Laundry Services	1.0	0.8	1.1	4.1	11.6
Management of Companies and Enterprises	1.4	0.3	0.9	0.9	6.8
Top Industries Experiencing Structural Losses					
Specialty Trade Contractors	3.4	1.9	3.5	2.5	10.1
Sporting Goods, Hobby, Book, and Music Stores	0.5	1.3	0.9	13.3	20.4
Miscellaneous Store Retailers	0.6	1.3	0.8	9.6	12.7
Building Material and Garden Supply Stores	0.9	1.2	1.3	6.0	14.0
Durable Goods	2.3	0.8	1.5	1.6	6.8
Electronics and Appliance Stores	0.4	0.8	1.0	8.5	22.1
Rental and Leasing Services	0.5	0.8	0.9	7.9	20.2
Building Construction	1.3	0.7	1.3	2.5	10.1
Credit Intermediation and Related Activities	2.0	0.6	2.0	1.4	9.8
Furniture and Home Furnishings Stores	0.4	0.5	0.5	5.3	12.4
Couriers and Messengers	0.4	0.3	0.5	3.3	12.4
Publishing Industries, Except Internet	0.6	0.3	0.5	2.0	7.3
Telecommunications	0.7	0.2	0.6	1.3	7.2

Source: Author's analysis of BLS Current Employment Statistics (CES) and 2007 American Community Survey 1-year PUMS, IPUMS-USA.
Notes: Private industry analysis is conducted at the subsector, three-digit NAICS code level which includes approximately 80 industries; public employment is categorized as federal, state, and local. Peak employment for youth by industry is calculated as total employment in each industry multiplied by the percent of youth workers within that industry immediately before or at the peak. The peak (December 2007) and trough (June 2009) of the business cycle, as defined by the NBER's Business Cycle Dating Committee, is used to classify industry performance. The recovery period is defined as "return to peak employment". The most recent CES data available at the time of analysis (April 2013) is used as a proxy for "return to peak employment," as employment has yet to reach pre-Great Recession levels. Industries listed account for at least 0.5 percent of peak employment among youth aged 16–19 years or 20–24 years. See appendix D for information on estimation of employment by age and industry. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

hand, teens *voluntarily* choosing not to work while pursuing their education may fail to gain the skills and habits associated with early work experience, putting them at a disadvantage when they subsequently choose to enter the labor market (Ayres 2013).

While it is too soon to tell what will happen to those younger workers affected by the Great Recession over the course of their working lives, we can assess the longer-term outcomes of those youth cohorts that entered the labor market over the last few decades. Figure 9 plots employment and labor force participation rates over the lifecycle for each successive cohort, starting with teens that were 16–19 years-old in 1976. This first cohort follows the usual trajectory where roughly half enter the labor force between the ages of 16 and 19 years, with their participation increasing to roughly 85 percent through ages 30 to 39 years, and then tapering off as people begin to retire. This lifecycle pattern is repeated over and over again for each successive youth cohort.

Comparing cohorts over time confirms our earlier cross-sectional results that more recent youth cohorts are entering the labor force with lower levels of labor market attachment compared to previous cohorts, and that this trend was evident prior to the Great Recession. For example, the 2001 teen cohort enters with slightly lower employment and labor force participation rates than similarly aged cohorts from earlier generations. Note that the yellow line depicts that almost a decade later, even by the time the 2001 cohort is between the ages of 25 and 29 years, it has failed to catch up to its predecessors. The 2006 cohort enters the labor market at the tail end of the business cycle peak but at substantially lower employment and labor force participation rates than the 2001 cohort. Finally, the most recent teen cohort in 2011 enters the labor market during the Great Recession with extremely low levels of labor market attachment.

Further breakdowns reveal that some demographic groups exhibiting sharp increases in school enrollment appear to be delaying their entry into the labor market while investing in their education. For example, compared to earlier cohorts, more recent cohorts of U.S.-born white females eventually followed similar trajectories in terms of labor force attachment, despite lower initial levels of attachment (see figure 10). Recall that this group experienced much larger increases in school enrollment over the past two decades.[20] In comparison, U.S.-born males seem to be falling behind their earlier peers as they move through the lifecycle—a trend that starts even earlier with the 1991 cohort. This finding suggests that there are some groups for which lower initial levels of labor market attachment may persist over time. Further study is warranted to learn whether the difficulties some groups face when transitioning into the labor market are a reflection of more dismal job prospects for those individuals choosing not to enroll in college. The most recent 2011 cohorts of both men and women entering the labor market in the wake of the Great Recession experienced even larger drops in labor force participation. It remains to be seen whether the effects of this most recent, severe downturn will persist as they progress through their careers.

VI. Conclusion: Future Uncertainty in the Labor Market for America's Youth

Although high unemployment and low labor force participation among U.S. youth in the wake of the Great Recession has received considerable attention in the popular press, labor market programs aimed at encouraging youth employment receive a smaller share of funding relative to programs aimed

20 However, the benefits of increased school enrollment may not necessarily outweigh the financial and opportunity costs of delayed entry into the labor market given that these enrollment increases have primarily occurred at two-year public institutions that typically have low completion rates. In New England, completion rates are on the order of 20 percent for full-time, first-year undergraduates. Authors' calculations from the Integrated Postsecondary Education Data System (IPEDS) Analytics: Delta Cost Project Database.

New England Box 4. Labor Force Attachment Among Recent Youth Cohorts in New England

More recent cohorts of youth in New England are entering the labor force with lower levels of labor market attachment compared to cohorts in previous generations. Yet the decline across successive cohorts in New England began earlier and the decreases have been larger relative to the United States as a whole. For example, the 1996 cohort enters with employment and labor force participation rates below those of similarly aged individuals in 1991 (see figure A2 in appendix A). This confirms our earlier observations that the decline in labor force attachment among youth began earlier in New England. Moreover, while the initial employment-to-population ratio of 16–19 year-olds fell roughly 20 percentage points across cohorts nationwide, it dropped by nearly 25 percentage points in New England. As a result, by the time the 2006 cohort entered the labor market, the gap in employment rates for youth in New England versus the nation as a whole had been reduced by half.

at helping other workers.[21] In addition, while several new initiatives have been targeted at hiring the long-term unemployed, few new policy interventions have focused directly on youth employment issues.[22] This lack of policy intervention continues, despite the fact that current youth cohorts are entering the labor market with lower levels of attachment—a condition that may persist, with negative consequences, over their working lives. Of particular concern is the share of the youth population that is idle or NEET. These individuals are particularly vulnerable to continued adverse labor market outcomes and their prolonged detachment from the labor market may be costly (Belfield, Levin, and Rosen 2012).

21 At the federal level, youth programs received less than 30 percent of total discretionary funding for employment and training programs in 2013 according to the FY 2014 Department of Labor Budget in Brief: http://www.dol.gov/dol/budget/2014/PDF/FY2014BIB.pdf At the state level in Massachusetts, funding for youth programs has decreased over the past several years according to MassBudget. 2012. *Youth and Work in Massachusetts: What's Happening in our State and State Budget*. Boston: Massachusetts Budget and Policy Center. Available at http://www.massbudget.org/contact_us.php.

22 New programs to address long-term unemployment for adults are typically administered by the states (for example, GeorgiaWorks) or are privately funded, like Connecticut's Platform to Employment.

Moreover, the youth joblessness associated with the Great Recession has occurred amidst a backdrop of declining youth labor market attachment that began even before this most recent downturn. Determining the degree to which recent trends stem from structural versus cyclical forces is important if we are to understand how uncertain the future looks for today's youth and what course of action policymakers might take to address this uncertainty. For example, will youth employment pick up commensurately as overall employment increases or will reduced labor force attachment among youth persist despite an improving economy?

Thus it is an open question as to what the future path of employment will look like for younger workers in the United States. This report explores this issue closely with the intent of highlighting areas of concern for policymakers. By analyzing the experiences of youth workers over the past two decades and beyond, we have put the recent decline in youth labor market attachment into a longer, historical perspective. We also examine these trends separately for teens aged 16 to 19 years and young adults between the ages of 20 and 24 years, bearing in mind that these two groups possess varying labor market and educational characteristics that may suggest the need for different policy interventions. Finally, we assess trends in youth employment by occupation and industry since 2000—apart from the cyclical impact of the Great Recession—to help guide short-term versus long-term policy actions aimed at fostering youth employment.

Our findings are similar in nature to those of earlier studies, yet the longer-term data tell a story more nuanced than other researchers have reported. In some instances we uncover a set of facts that run counter to the conventional wisdom or tell a story that puts current trends into better perspective. Specifically, we find that:

- **While all U.S. youth have been affected by the Great Recession, teens experienced a decline in labor force attachment even prior to the most recent downturn.**

Among teens aged 16–19 years, there was a significant decline in both the employment-to-population ratio (–5.8 percentage points) and the labor force participation rate (–5.4 percentage points) between 2000 and 2006—similar in magnitude to what occurred for this age group during the Great Recession. In contrast, although the employment-to-population ratio decreased slightly (–0.5 percentage points) for 20–24 year-old young adults in the years prior to the Great Recession, this age group's labor force participation rate actually increased slightly.

- **As a result of rising school enrollment, youth did *not* become increasingly idle prior to the Great Recession despite the sharp decrease in labor force attachment.** Youth between the ages of 16 and 24 years significantly increased their school enrollment from the mid-1980s onward—the period just prior to the Great Recession was no exception to this longer-term trend. Although the NEET share of U.S. youth increased during the Great Recession due to rising joblessness, there is no long-term upward trend that would suggest rising idleness among youth. In fact, idleness among today's youth is no higher than it was two decades ago just after the 1990–1991 recession.

- **The shifting composition of the youth population in the United States towards greater shares of minority, immigrant, and low-income groups does not account for the observed decline in youth labor market attachment since 2000.** For teens, virtually all of the 5.8 percentage point decrease in the employment-to-population ratio is due to falling employment within each demographic group. Although disadvantaged groups have lower *levels* of labor market attachment, employment and labor force participation has been declining among *all* teens regardless of race, ethnicity, or family income.

- **The U.S. economy is employing fewer teens within almost *all* industries and occupations—whether these sectors are growing or declining as a share of total employment.** Our shift-share analysis reveals that the overall decline in teen employment prior to the Great Recession does not simply reflect the decline of large industry or occupation groups, but rather a shift away from employing teens within most industries and occupations. In contrast, we find no such pattern for young adults, for whom employment grew slightly *faster* than for all other U.S. workers between 2000 and 2006. Moreover, many young adults have found employment in the very same industries and occupations that are shedding teens.

- **The Great Recession appears to have reinforced the pre-existing trends that were observed among youth for the 2000 to 2006 period leading up to the recession.** Relative to all workers, it appears that jobs typically held by youth were disproportionately located in industries showing structural shifts during the Great Recession. Not only did these industries undergo large structural shifts in employment, but youth were more likely to be in jobs that were affected by these changes during the business cycle.

- **It remains to be seen whether the effects of this most recent and severe downturn will persist as today's youth progress through their working lives.** Prior to the Great Recession, some demographic groups—most notably women—appeared to be investing in their education and simply delaying their entry into the labor market with few adverse consequences in terms of their future labor force participation and employment. In comparison, recent male cohorts seem to be falling behind their earlier peers as they move through their working lives—a trend that started long before the Great Recession. This finding suggests that there are some groups of workers for whom lower initial levels of labor market attachment may persist over time.

Discussion

One striking pattern that has emerged from these findings is the different labor market experiences of teens versus young adults. This result suggests that separate policy approaches are required to address the varying needs of these two groups. For young adults, virtually all of the decrease in labor force attachment occurred during the Great Recession. Observers have noted that this group has the potential to become a "lost generation," resulting from a lack of early labor market participation and that this lack of experience has potentially long-run ramifications, both for society as well as the individual.[23] For society, prolonged spells of high unemployment rates lead to lost tax revenues, increased government payments, and lost productivity. For the individual, the loss of income in the short term is exacerbated by slower skill acquisition and depressed lifetime earnings.

Indeed, it appears that young adults may have taken jobs previously held by teens—perhaps out of necessity. For instance, in a depressed labor market, higher skilled or experienced individuals who are displaced from work can often find jobs lower down in the skill distribution. This is especially true for college graduates, who typically have a much lower unemployment rate than those with only a high school degree—even during severe downturns such as the Great Recession. The least skilled or experienced workers—teens—often have nowhere to go except to exit the labor market entirely.

Future research that identifies and evaluates the programs and policies that are successful in helping young adults attain or regain their attachment to the labor market could help policymakers target funding towards those approaches that are deemed to be effective and efficient. In the short run, programs such as tax credits for employers hiring young adults or a GeorgiaWorks-type program—that provides unemployment insurance (UI) benefits for youth to pay for training with an employer—could help this group obtain work experience during a critical period in their careers, while the labor market continues to strengthen. In the long run, strengthening partnerships between academic institutions and private industry groups can help ensure that programs of study lead to employment and possibly provide relevant work experience through structured internship and cooperative opportunities.

In contrast, it is not clear that the large and ongoing decline in labor force attachment among teens aged 16 to 19 years will reverse itself as the economy continues to recover from the Great Recession. Indeed, our findings show that the Great Recession only served to intensify this earlier downward trend. Understanding the different impacts on younger versus older workers associated with shifts in labor demand, and how these shifts result in winners and losers, could help shape how policymakers approach youth-based policies. For example, our detailed examination of the 2000–2006 period leading up to the Great Recession shows that a significant portion of jobs traditionally held by teens are either located in declining industries—where workers are being replaced by technology and/or outsourcing—or in growing industries that appear to be employing other types of workers, such as young adults or immigrants. Recognizing that these trends may have a disproportionate impact on the least skilled or inexperienced workers—such as teens—would highlight the importance of developing policies that aim to expand labor market opportunities for the youngest segment of labor market.

However, further research seems warranted to better understand the factors underlying the decline in labor force attachment among teens and ultimately to inform policymakers about the most effective course of action. Indeed, for some demographic groups—most notably women—the observed decline in youth labor force attachment may simply reflect a temporary delay in entering the workforce while investing in additional human capital. It appears that this strategy of investing in further education at the expense of time spent in the

23 "Idle Youth Raises 'Lost Generation' Fear," *CBS News*, November 27, 2009. Available at http://www.cbsnews.com/8301-18563_162-5792877.html. "The Jobless Young Left Behind," *The Economist*, September 10, 2011. Available at http://www.economist.com/node/21528614.

paid labor market may ultimately pay off, as this group is able to achieve similar career trajectories as earlier cohorts.

Yet even for individuals who do enroll in college, the success of this pathway is not guaranteed. As college attendance has risen, the rate of college completion has fallen, bringing into question the value of time that youth spend out of the labor force—particularly as the cost of higher education has risen over time. Since 1990, college enrollment has primarily increased at two-year public institutions that typically have completion rates of roughly 20 percent for full-time first-year undergraduates—less than half that of four-year institutions (McIntosh and Rouse 2009). Given considerably lower completion rates, it is not clear that the benefits of college attendance necessarily outweigh the financial and opportunity costs of delayed entry into the labor market for the marginal student. Additional research that re-examines the benefits of college coursework versus gaining labor market experience for those that do not complete their degrees—particularly in light of rising tuition costs and student debt levels—could help guide individuals and guidance counselors in their career decision making.

Of greater concern is the apparent difficulty that non college-bound youth have in transitioning to the labor market. A significant body of research finds that current education and workforce institutions are ill-equipped to provide such youth with the relevant skills to obtain employment (Pathways to Prosperity 2011; Annie E. Casey Foundation 2012). This suggests the need for long-term solutions that can prevent future youth from becoming detached from the labor market. Such measures might entail expanding pathways to education and training that are better aligned with labor market needs through apprenticeships, internships, and career tech programs administered at the secondary (high school) level. This is the goal of a recent collaboration between the U.S. Department of Labor and the U.S. Department of Education to make $100 million available for Youth CareerConnect grants that provide high school students with the industry-relevant education and skills needed for future careers beyond high school.[24] Finally, although labor force participation has been declining among *all* teens, minorities continue to have lower *levels* of labor market attachment. Closing the gap between native whites and minority groups remains a worthy policy goal that would help boost overall labor market attachment for youth.

In sum, today's youth face a variety of labor market challenges that are not easily addressed by a one-size-fits-all approach to policymaking. Policymakers should continue to seek out evidenced-based research that can help them better target their limited resources towards those programs and approaches with the greatest chances for success. Moreover, it is important to keep in mind that workforce development interventions are typically more effective when applied to younger versus older workers as youth are easier to train, more open to exploring new industries and occupations, and have a longer time horizon over which the investment in their human capital will pay off. As such, the return on investing in youth is high. In the long run, the hope is that by ensuring a future pathway for all younger workers, policymakers will also be helping to ensure a future pathway for greater economic growth.

24 Youth CareerConnect grants are designed to encourage school districts, higher education institutions, workforce investment boards and their partners to scale-up innovative high school models and partnerships with colleges and employers so that all students graduate better equipped for today's economy. Specifically, Youth CareerConnect schools will provide integrated academic and career-focused learning, work-based learning, employer engagement, individualized career and academic counseling, and greater integration of post-secondary education and training. For more information, see "FACT SHEET: Youth CareerConnect Grants" available at http://www.whiehouse.gov/the-press-office/2013/11/19/fact-sheet-youth-careerconnect-grants.

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Appendix A: Supporting Tables and Figures for the New England Boxes

Table A1. Shift-Share Analysis of Change in Labor Market Measures for New England Youth by Demographic Group, 1990–2010

	Teens Aged 16 to 19 Years							Young Adults Aged 20 to 24 Years						
	Percent				Percentage Point Difference			Percent				Percentage Point Difference		
	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010
Overall Employment-to-Population Ratio														
Actual	48.53	45.50	39.46	33.50	–3.03	–6.04	–5.96	70.99	69.43	68.15	64.33	–1.55	–1.29	–3.82
Between Groups	48.53	47.45	47.32	46.71	–1.08	–0.13	–0.61	70.99	69.74	69.67	69.20	–1.24	–0.07	–0.47
Within Groups	48.53	46.42	40.25	34.46	–2.11	–6.17	–5.79	70.99	70.74	68.98	65.59	–0.25	–1.76	–3.39
Overall Labor Force Participation														
Actual	57.21	54.44	48.53	44.39	–2.77	–5.91	–4.14	78.37	77.05	75.79	75.16	–1.33	–1.26	–0.63
Between Groups	57.21	56.36	56.31	55.85	–0.85	–0.06	–0.46	78.37	77.38	77.36	77.02	–1.00	–0.02	–0.34
Within Groups	57.21	55.14	49.03	44.95	–2.08	–6.11	–4.08	78.37	78.17	76.38	75.88	–0.21	–1.78	–0.51
Overall Unemployment Share														
Actual	8.68	8.94	9.08	10.89	0.26	0.14	1.81	7.39	7.62	7.64	10.83	0.23	0.03	3.19
Between Groups	8.68	8.91	8.98	9.14	0.23	0.07	0.16	7.39	7.64	7.69	7.82	0.25	0.05	0.13
Within Groups	8.68	8.71	8.77	10.49	0.03	0.06	1.71	7.39	7.43	7.40	10.28	0.04	–0.03	2.88
Overall School Enrollment Rate														
Actual	79.89	84.15	87.71	88.36	4.27	3.56	0.66	36.45	42.25	46.71	48.36	5.80	4.46	1.65
Between Groups	79.89	79.53	79.40	79.12	–0.36	–0.13	–0.28	36.45	36.73	36.61	36.36	0.27	–0.11	–0.25
Within Groups	79.89	84.85	88.27	89.01	4.96	3.42	0.74	36.45	42.31	47.49	49.36	5.85	5.19	1.87
Overall NEET Share														
Actual	7.78	6.31	5.46	5.89	–1.48	–0.85	0.44	14.17	12.99	12.72	14.70	–1.18	–0.27	1.98
Between Groups	7.78	8.32	8.44	8.81	0.54	0.12	0.37	14.17	14.94	15.06	15.58	0.78	0.12	0.52
Within Groups	7.78	5.73	5.09	5.38	–2.05	–0.64	0.29	14.17	12.08	11.86	13.47	–2.09	–0.21	1.60

Source: Authors' analysis of 1990–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. "Actual" refers to the actual value of the measure observed in the data. "Between Groups" refers to the value of the measure due to shifts in the population shares between groups, holding constant the value of the measure within each demographic group. "Within Groups" refers to the value of the measure due to shifts within each demographic group, holding constant the population shares between groups.

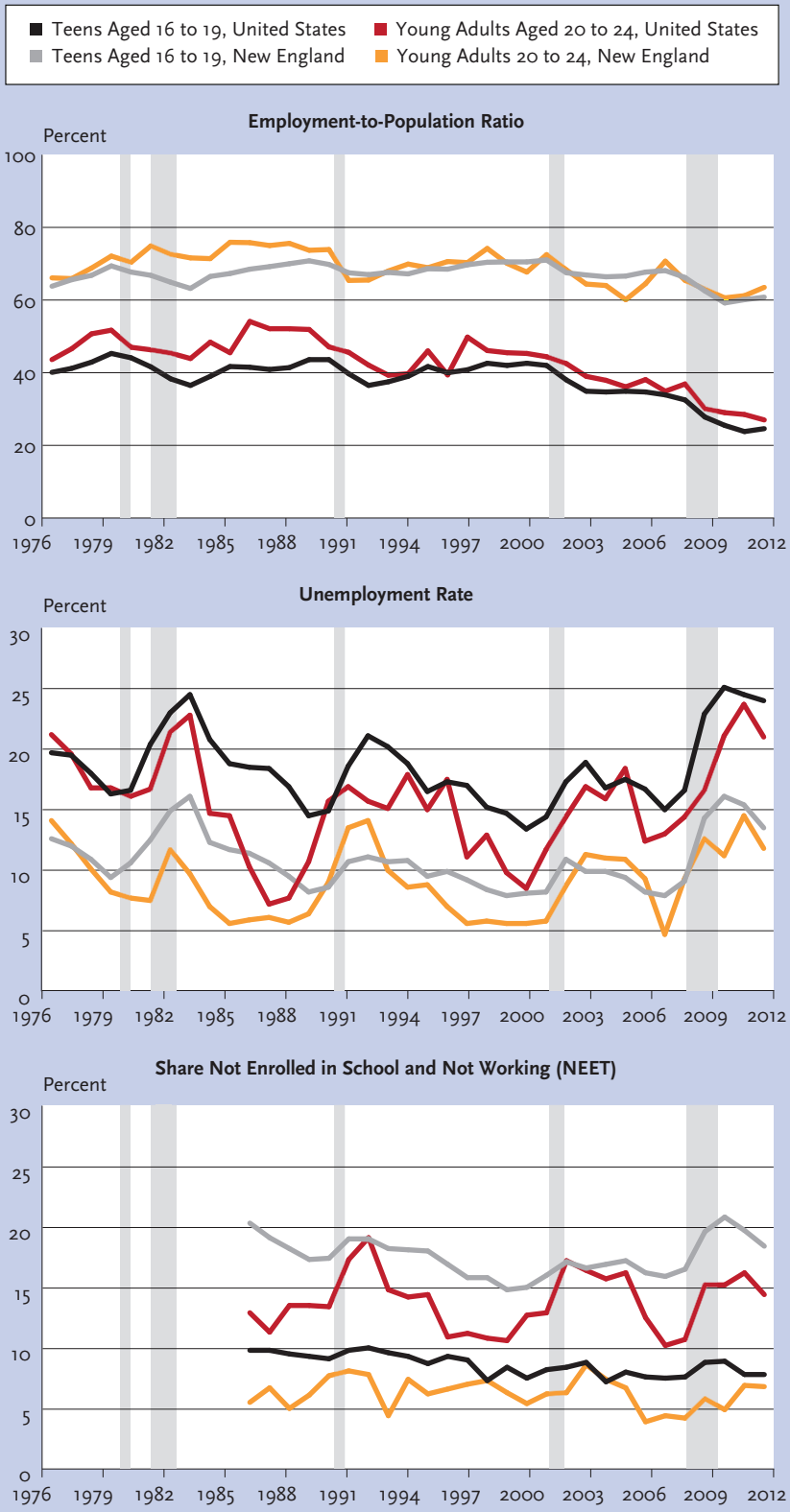
Table A2. Shift Share Analysis of Change in Employment Share for New England Youth by Industry and Occupation, 1990–2010

	Teens Aged 16 to 19 Years							Young Adults Aged 20 to 24 Years						
	Percent				Percentage Point Difference			Percent				Percentage Point Difference		
	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010	1990	2000	2006	2010	1990–2000	2000–2006	2006–2010
Industry														
Overall Employment Share														
Actual	5.52	5.00	4.70	4.16	–0.51	–0.31	-0.54	11.52	8.75	9.25	9.29	–2.77	0.50	0.03
Between Industries	5.52	5.49	5.72	5.96	–0.03	0.23	0.23	11.52	11.61	11.85	11.96	0.09	0.24	0.11
Within Industries	5.52	5.02	4.44	3.68	–0.50	–0.58	–0.77	11.52	8.60	8.79	8.60	–2.92	0.19	–0.19
Occupation														
Overall Employment Share														
Actual	5.36	5.29	5.15	4.68	–0.06	–0.15	–0.47	11.60	9.14	9.79	10.02	–2.46	0.65	0.23
Between Occupations	5.36	5.97	6.49	6.82	0.61	0.52	0.33	11.60	11.78	12.10	12.28	0.18	0.31	0.19
Within Occupations	5.36	4.62	3.94	3.39	–0.74	–0.68	–0.54	11.60	8.64	8.86	8.61	–2.96	0.22	–0.25

Source: Authors' analysis of 1990–2000 U.S. Decennial Census and 2005–2007/2009–2011 American Community Survey 3-year PUMS, IPUMS-USA.
Notes: Reported values for 2006 and 2010 are estimates from 2005–2007 and 2009–2011 ACS 3-year PUMS respectively. "Actual" refers to the actual value of the measure observed in the data. "Between Industries/Occupations" refers to the value of the employment share for youth due to shifts in aggregate employment between industries/occupations, holding constant the share of youth employment within each industry/occupation. "Within Industries/Occupations" refers to the value of the employment share for youth due to shifts in the share of youth employment within each industry/occupation, holding constant the share of aggregate employment between industries/occupations.

Figure A1. Although the Trends Observed for New England and the U.S. Are Similar, the Timing and Magnitude of the Changes Differ

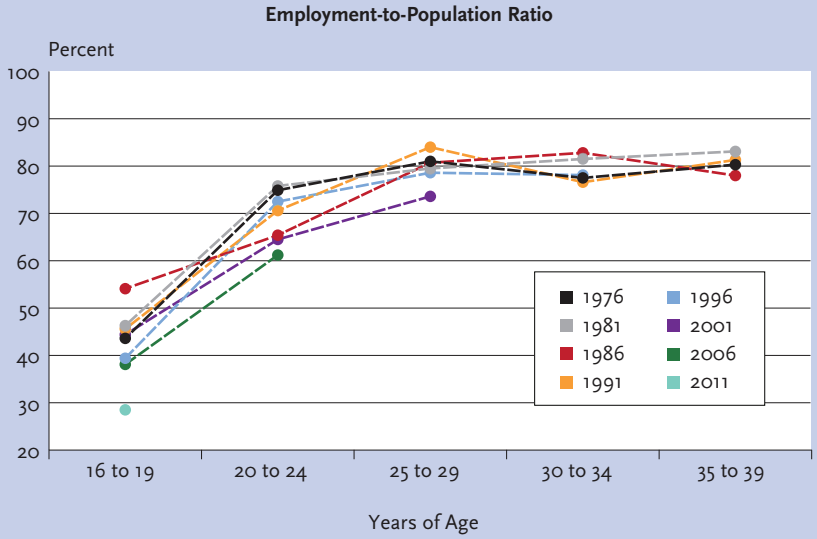
Trends Among New England Youth Regarding Work, School Attendance, and Idleness, 1976–2012

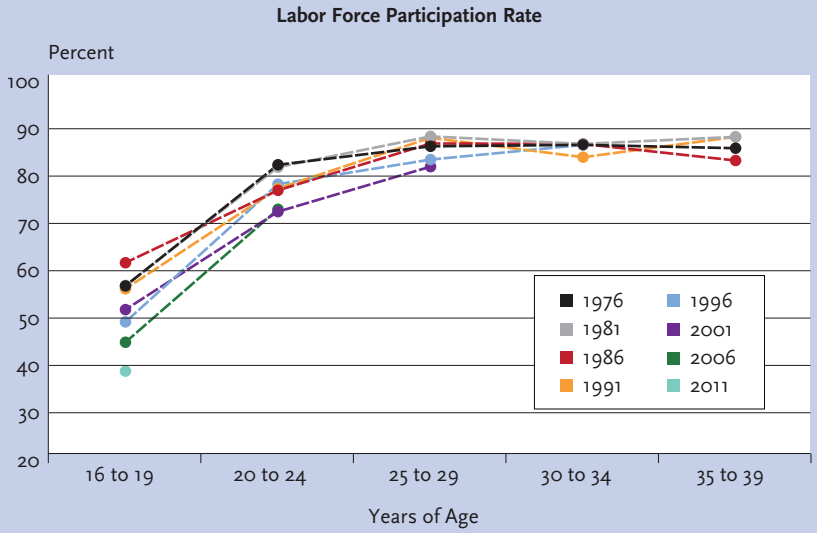


Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. Shaded areas indicate recessions.

Figure A2. The Decrease in Labor Market Attachment Across Successive Cohorts of Youth Has Been Greater in New England and Began Earlier, Relative to the United States

Cohort Analysis of Labor Market Attachment for New England Youth over Time





Source: Authors' analysis of Current Population Survey data, March 1976–2012, IPUMS-CPS.
Notes: Civilian, noninstitutional population. Data prior to 1994 are not strictly comparable to those in later years due to survey redesign. Data are plotted such that successive synthetic cohorts of youth are followed over time. See appendix D for more information. Available at http://www.bostonfed.org/economic/neppc/researchreports/2013/rr1303.htm.

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