Teen time use and parental education: evidence from the CPS, MTF, and ATUS

Responses from three surveys indicate that parental education plays a critical role in the way teens spend their time in employment and other activities; in recent years, teen employment rates have declined most for those with more highly educated parents, while their rate of engagement in volunteer activities has increased

Shirley L. Porterfield
and
Anne E. Winkler

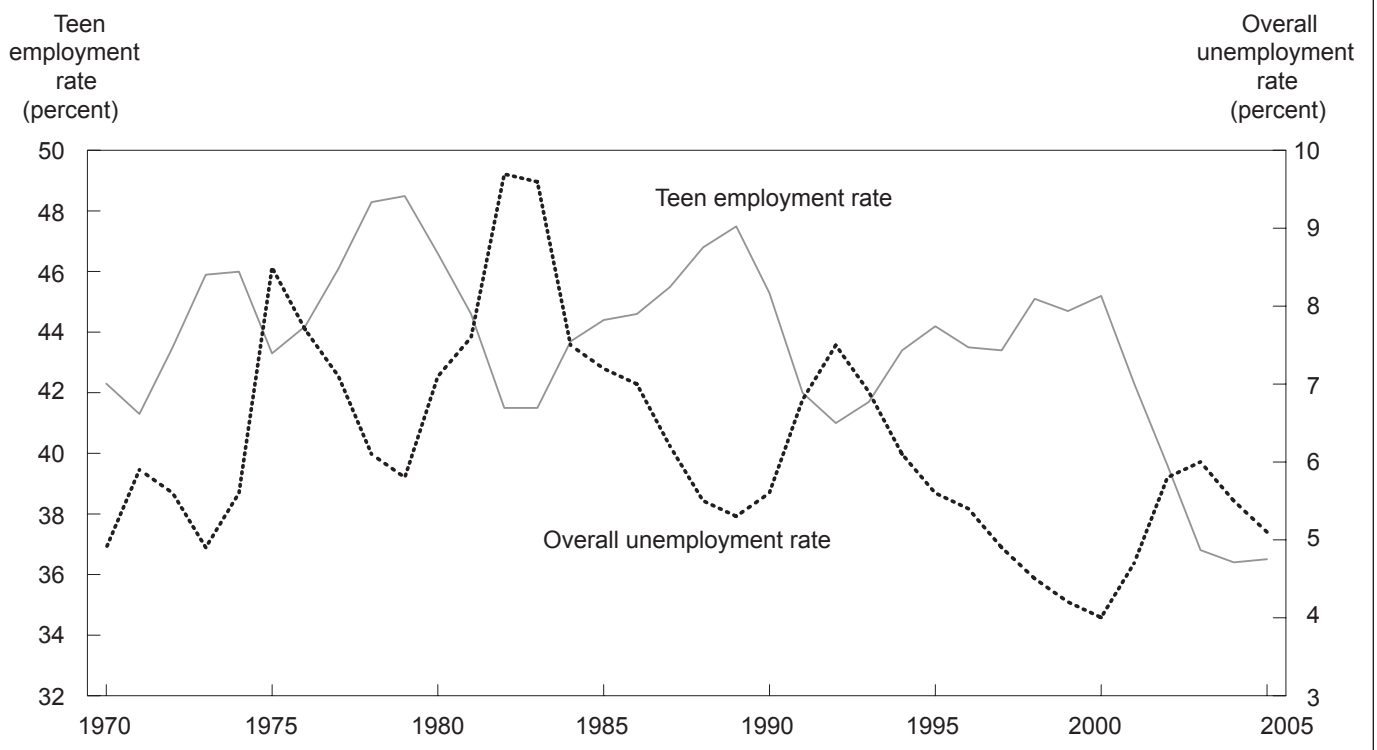
Recent research based on data from the Current Population Survey (CPS) points to a secular decline in overall teen employment since the late 1970s—a decline that accelerated beginning in 2000. Indeed, the acceleration has been characterized in the literature as "stunning."[1] For instance, as shown in chart 1, the teen employment-population ratio in 2005 stood at 36.5 percent, well below the rates of the previous 35 years, including the low points associated with the recessions of 1981–82, 1991, and 2001. Although some of this change might be attributed to rising school enrollment, because teens in school are less likely to be employed (and also because they work fewer hours), CPS data show a decrease in teen employment even among those enrolled in high school. For instance, from the 1995–96 school year to the 2003–04 school year, employment rates of enrolled teens fell from 34.2 percent to 27.0 percent.[2] Given this observed shift in teens' allocation of time away from employment, how *are* teens spending these hours? Recent anecdotal discussions, both scholarly and in the popular press, suggest that teens in more highly educated and economically advantaged families are being steered away from paid employment toward activities that are expected to increase their likelihood of acceptance to, and success in, college.[3] To what extent is this story consistent with nationally representative data? What about time-use patterns and trends in hours worked for teens in families with less educated parents? Many of the activities teens find themselves in, by choice or default, can have important long-term consequences for their academic and employment success.

Academic research points to substantial differences in outcomes by adult educational attainment—the measure also used here to delineate a family's socioeconomic status. For instance, less educated adults experience lower rates of employment and marriage and higher rates of single motherhood. Moreover, the gaps between them and their more educated counterparts are widening.[4] Similarly, rates of teen nonmarital fertility are substantially higher in families with less educated parents.[5] These pieces of evidence lead one to suspect considerable variation in teens' time use as a function of parental education.

Using data from outgoing rotation groups of the CPS for the school years (September–May) 1995–96, 1999–2000, and 2003–04, this article briefly reviews trends in teen employment. Among the article's findings, the recently observed decline in teen employment appears most pronounced for those in the most

Shirley L. Porterfield is an associate professor of social work in the School of Social Work, and Anne E. Winkler is a professor of economics and public policy administration, at the University of Missouri, St. Louis, MO. E-mail: porterfields@umsl.edu

Chart 1. Trends in teen employment rate and overall unemployment rate, 1970–2005



SOURCE: Bureau of Labor Statistics.

highly educated families. Then, to answer the question of how teens are spending their time if they are not in paid employment, the article examines trends in teens' time use from 1975–76 to 2003–04, using data from Monitoring the Future (MTF), an annual survey of high school seniors. In addition, point-in-time data on teen time use from the 2003 and 2004 American Time Use Survey (ATUS) are analyzed. Although the three data sets examined are not (even collectively) rich enough to formally investigate the long-term value of different uses of time (for example, homework as opposed to paid work), together with the existing literature, they suggest some implications.

Parental education as a "dividing line"

As the academic literature cited earlier intimates, parental education functions as an important "dividing line" in the United States. Not only do children growing up in families with more highly educated parents tend to have greater access to economic resources, but also, these parents tend to serve as in-house role models and usually have more extensive informational and social networks.[6] Delineating economic (dis)advantage or socioeconomic status by educational attainment rather than income has several advantages. First, education level provides a well-defined set of "cutoffs" that serve to stratify the population. In contrast, identifying groups such as the "middle class" in income data is fraught with difficulties. Second, the average return for a given level of education has been found to differ significantly by race or ethnicity, suggesting that income may be a less-than-satisfactory measure of socioeconomic status.[7] Third, from a practical standpoint, the ATUS, which is the basis for much of the analysis set forth herein, includes information on household income by broad interval only. More detailed income information is available in CPS data linked to the ATUS, but these data are collected 2 to 5 months earlier, and income is more subject to short-term change than parental educational attainment is.[8] In fact, it is precisely because income is more subject to short-term change that policy researchers are increasingly using adult (parental) education rather than income to demarcate economic disadvantage in causal analyses.[9]

Importantly, the level of parental education that demarcates socioeconomic disadvantage differs by family structure, principally as a consequence of the number of adults in the household. With two adults, there are two potential earners to support the household, as well as two "supervisors" to monitor children.[10] Thus, even if the edu-

cation levels of parents in married-couple and single-parent families are the same, the single-parent family is at a greater socioeconomic disadvantage.

Trend data from the CPS and MTF

The trend data on teens' time use analyzed in this article are from two sources: the CPS, a monthly survey administered to approximately 60,000 eligible households[11] by the U.S. Census Bureau; and MTF, an annual survey of a representative sample of approximately 14,000 to 18,000 12th graders located in 125 to 140 public and private high schools throughout the United States. MTF is administered by the Institute of Survey Research at the University of Michigan.[12]

CPS sample. Data on teens aged 16 to 19 years are taken from three school-year (September–May) periods: 1995–96, 1999–2000, and 2003–04.[13] A school-year sample frame is used because what is principally of interest is how teens allocate their time when they must meet the demands of high school.[14] The teens are drawn from households in the outgoing rotation group of the CPS during the sample frame. Specifically, households are included in the CPS on a rotation schedule of 4 months in the survey, 8 months out of the survey, and then 4 months in the survey again. At the end of this 16 month period, the household is dropped from the sample. The individuals interviewed in the 4th and 16th months are collectively called the outgoing rotation groups. Each teen is included in the 9 month sample frame only once, for the household's 4th- or 16th-month outgoing interview.

The following additional restrictions are imposed on the sample: the teen lives in a household with at least one parent (this restriction captures information on custodial parents' education), the teen is single (not married or cohabiting), and the teen does not have a child. Sample sizes are reported at the bottom of table 1, and means of key characteristics for the 2003–04 sample are reported in appendix table A–1.

The majority of the analysis focuses on teens enrolled in high school during the school year, but broader figures on all teens are presented as well. A teen's employment is based on his or her work status during the week prior to the survey interview. For those employed, the number of hours worked is measured as usual hours worked for all jobs. Teens are divided into one of four education groups: high school graduate, no college; high school student; college student; and high school dropout (not enrolled in high school or college and did not receive a high school degree). For teens in married-couple families, parental education is measured as the educational attainment of the more educated parent.[15] Data are stratified separately for white non-Hispanics and minorities, the latter defined as individuals who describe themselves as at least partly black or African-American or of Hispanic ethnicity. (Although Asians and other racial groups are not examined separately, data on these groups are included in the totals listed in the tables.) All CPS findings are weighted.

MTF sample. The primary purpose of MTF is to gather information on illicit substance use by teens, but these data also contain useful information on teens' time use and how patterns have changed since the survey's inception in 1975–76. A multistage random sampling procedure is used to draw a nationally representative sample of high school seniors from approximately 135 public and private high schools. In sampled schools, all 12th graders present on the day the survey is administered are interviewed.[16] The survey is self-administered and students' identities remain anonymous.

The MTF collects information on whether teens participate in various activities on a weekly basis, along with categorical data on time spent at work (paid and unpaid combined) and on homework. Although these data do not provide information on the precise number of hours per week spent performing each activity, they are indicative of changing time use over time. MTF data are available for each school year from 1975–76 through 2003–04. This article reports figures for the first and last years only. Given the way the MTF data are collected, data are available only for high school seniors across the period cited; therefore, the survey fails to capture both younger and older teens, as well as teens who are no longer attending high school, all of whom are captured in the CPS and ATUS. The MTF data are useful nonetheless, in that they provide a consistent cohort of teens and a time trend for comparative purposes.

All seniors surveyed in the MTF complete a core questionnaire. In addition, seniors complete 1 of 6 different forms on separate topics. The analysis presented in this article focuses on time-use activity questions asked in Form 2; thus, one-sixth of the full MTF sample provides the responses reported herein. Notably, questions on time use mention activities such as television viewing and working around the house, but fail to mention activities such as playing video games. Computer use is a recent addition to the survey and, as such, cannot be examined with respect to trends over time. The sample restrictions applied to these data are the same as those for the CPS, and all

MTF results are weighted. Sample sizes for the MTF analysis are reported at the bottom of table 4.

Recent trends in teen employment rates: CPS. Table 1 provides detailed CPS information about teens' employment patterns for the school years 1995–96, 1999–2000, and 2003–04. Previous studies point out that teens in less advantaged households are much less likely to be employed, a finding also identified in table 1 for teens in single-parent families.[17] For instance, in 2003–04, employment rates were as low as 18 percent for teens living with a single parent with no high school degree, but rose steadily to range from 26 percent to 32 percent for teens living with a single parent with a high school education, some college, or a 4-year college degree.

A similar pattern is found for teens in married-couple families, although for this group, the relationship between parental education and teen employment resembles a hill. For instance, in 2003–04, teens in the least educated married-couple families had an average employment rate of 30 percent, and those with a parent who completed high school or some college had an average employment rate of 37 percent to 40 percent, but the rate stood at just 35 percent for those with a college-educated parent and was as low as 29 percent for teens with the most highly educated parents. This hill pattern also can be seen for teens in married-couple families for the years 1995–96 and 1999–2000.

Table 1 further documents striking *trends* in teen employment by parental education. As shown in the table, although teen employment rates fell overall during the period from 1995–96 to 2003–04 (exhibiting a 6.5-percentage-point decline, significant at the 1-percent level), employment reductions were greatest among teens in more highly educated families. For instance, over this period, the employment rate for teens in single-parent families with less education (that is, their parent either completed high school or had no high school degree) declined by 5.5 to 6.5 percentage points, while rates fell by as much as 11.4 percentage points for teens whose single parent had completed some college and by 16.2 percentage points for those whose single parent had earned a professional or graduate degree. (All declines reported in this paragraph are statistically significant at the 1-percent level.)

For teens in married-couple families, the overall pattern is similar, but the educational dividing line differs. Over the full period from 1995–96 to 2003–04, the employment rate for teens in families whose more educated parent had not completed high school actually increased by 1.8 percentage points, while rates decreased by 6.5 or more percentage points for teens in families whose more highly educated parent had a high school degree or even more education. Again, additional analysis indicates that these declines in employment rates are statistically significant. The diverging trends by parental education observed for teens in single-parent and married-couple families are consistent with anecdotal evidence suggesting greater parental pressure on teens in more highly educated families to focus on college-oriented activities (as opposed to employment). Indeed, in this regard, the type of family structure appears to be a less important factor associated with recent trends than does parental education. Table 2, which stratifies the data on teens by sex, indicates further that recent employment declines are most pronounced for male teens, a finding corroborated in other research.[18] One possible explanation is that male youths, especially, may be competing for jobs with unskilled immigrants. Another is that sectoral shifts in the employment of teens, such as a decline in the number of "male" jobs (for example, gas station attendants), may be a contributing factor.[19]

Recent trends in hours worked: CPS and MTF. Table 3 provides trends regarding another dimension of labor supply: usual weekly hours of work by employed teens. The data reveal employment patterns on the intensive margin—that is, the number of hours worked, given that the person is employed. As found in previous research, conditional on employment, teens in families with less education work a greater average number of hours than those in more advantaged families, and a larger fraction of these teens work very long hours, typically defined as in excess of 20 hours per week.[20] For instance, consider teens in single-parent families in 2003–04. Those whose parent either completed high school or had no high school degree worked an average of 19.8 to 23.4 hours per week, and 41.3 percent to 47.3 percent of these teens worked more than 20 hours a week. In sharp contrast, teens whose parent had completed college or earned a professional or graduate degree worked an average of 12.6 to 16.7 hours per week, and as little as 14.3 percent to 23.2 percent of these teens worked more than 20 hours per week.

Patterns are similar for teens in married-couple families. Further, conditional on employment, teens in more highly educated married-couple families (those teens with a parent who completed 4 years of college) worked fewer hours in 2003–04 than in 1995–96 (a statistically significant change at the 1-percent level). In comparison, hours worked were unchanged for teens in the least educated married-couple families.

Data on high school seniors from the 2003–04 MTF (see

Table 1. Employment rate of teens aged 16 to 19 years, September–May 1995–96, 1999–2000, and 2003–04, by individual and family characteristics

Category	Percent of teens employed			Percentage-point change, 1995–96 to 2003–04
	1995–96	1999–2000	2003–04	
All teens	39.9	41.5	33.4	[2]–6.5
Female	40.0	41.7	34.6	[2]–5.4
High school student	35.4	35.2	29.0	[2]–6.4
Male	39.8	41.4	32.3	[2]–7.5
High school student	33.2	34.9	25.1	[2]–8.0
Age				
16 years	25.2	25.5	18.5	[2]–6.8
17 years	39.9	40.3	31.9	[2]–8.0
18 years	45.6	48.0	40.9	[2]–4.7
19 years	53.1	56.5	50.1	[3]–3.0
Family structure and parental education level				
Married-couple family[1]	41.8	42.8	35.6	[2]–6.3
No high school degree	28.3	33.3	30.2	1.8
High school degree	44.6	45.2	37.1	[2]–7.5
Some college	46.4	48.2	39.8	[2]–6.6
4-year college degree	41.5	42.9	35.0	[2]–6.5
Professional or graduate degree	36.2	33.5	29.1	[2]–7.1
Single-parent family	34.3	38.3	26.9	[2]–7.4
No high school degree	24.6	28.9	18.0	[2]–6.5
High school degree	31.6	40.6	26.1	[2]–5.5
Some college	40.8	39.6	29.4	[2]–11.4
4-year college degree	38.8	41.7	32.0	[4]–6.7
Professional or graduate degree	45.8	43.5	29.7	[2]–16.2
Race or ethnicity				
White, non-Hispanic	45.9	47.5	38.9	[2]–7.0
Minority	25.6	29.1	22.3	[2]–3.3
School enrollment and parental education level				
High school dropout	39.9	46.7	40.0	.0
Not a student, high school graduate	68.7	73.8	66.0	–2.7
High school student	34.2	35.1	27.0	[2]–7.2
Parent has—				
No high school degree	18.0	21.7	15.6	–2.3
High school degree	34.4	35.5	25.2	[2]–9.2
Some college	38.6	38.2	30.2	[2]–8.5
4-year college degree	36.2	38.6	30.6	[2]–5.6
Professional or graduate degree	35.4	33.1	26.7	[2]–8.7
College student	45.1	47.3	41.0	[2]–4.1
Sample size (all teens)	12,042	12,472	13,587	…

[1] Parental education level is measured as the educational attainment of the more educated parent.
[2] Statistically significant at the 1-percent level.
[3] Statistically significant at the 5-percent level.
[4] Statistically significant at the 10-percent level.

NOTE: Data are from CPS outgoing rotations. Figures are weighted. Teens are still living at home with parent(s).

Table 2. Employment rate of male teens and female teens aged 16 to 19 years, September–May 1995–96 and 2000–04, by individual and family characteristics

Category	Male teens			Female teens		
	Employment rate (percent)		Percentage-point change, 1995–96 to 2003–04	Employment rate (percent)		Percentage-point change, 1995–96 to 2003–04
	1995–96	2003–04		1995–96	2003–04	
All teens	39.4	32.3	[2]–7.2	40.2	34.6	[2]–5.6
Age						
16 years	24.6	16.9	[2]–7.7	25.9	20.1	[2]–5.8
17 years	38.1	29.0	[2]–9.1	41.9	35.1	[2]–6.8
18 years	46.1	40.2	[2]–5.9	45.0	41.6	[4]–3.4
19 years	53.4	49.8	[4]–3.6	52.7	50.4	–2.3
Family structure and parental education level						
Married-couple family[1]	41.9	34.9	[2]–7.0	41.8	36.2	[2]–5.6
No high school degree	28.5	31.4	3.0	28.2	28.7	.5
High school degree	46.9	36.8	[2]–10.2	42.0	37.4	[3]–4.6
Some college	44.6	39.1	[2]–5.5	48.4	40.5	[2]–8.0
4-year college degree	41.6	34.6	[2]–7.0	41.3	35.5	[2]–5.9
Professional or graduate degree	36.5	27.0	[2]–9.5	35.9	31.4	[4]–4.5
Single-parent family	32.5	24.3	[2]–8.3	36.1	29.8	[2]–6.3
No high school degree	25.4	17.7	[3]–7.8	23.7	18.4	–5.4
High school degree	29.0	23.0	[3]–6.1	34.7	29.2	[4]–5.4
Some college	39.3	25.2	[2]–14.1	42.5	34.4	[2]–8.1
4-year college degree	31.9	32.8	.9	46.2	31.3	[2]–14.9
Professional or graduate degree	50.8	24.6	[2]–26.3	40.7	35.5	–5.2
Race or ethnicity						
White, non-Hispanic	45.1	37.7	[2]–7.4	46.7	40.1	[2]–6.6
Minority	25.9	21.2	[2]–4.7	25.3	23.5	–1.8
School enrollment and parental education level						
High school dropout	45.4	44.0	–1.4	32.5	32.8	.3
Not a student, high school graduate	72.1	65.9	[3]–6.3	65.0	66.3	1.2
High school student	32.8	25.1	[2]–7.6	35.1	29.0	[2]–6.1
Parent has—						
No high school degree	17.0	15.9	–1.1	18.5	15.4	–3.1
High school degree	33.9	22.3	[2]–11.6	33.9	28.2	[2]–5.7
Some college	35.9	27.6	[2]–8.2	41.1	33.0	[2]–8.1
4-year college degree	34.7	30.6	[4]–4.1	37.7	30.6	[2]–7.1
Professional or graduate degree	35.5	23.5	[2]–12.0	35.1	30.0	[4]–5.1
College student	44.3	39.2	[3]–5.1	46.8	42.5	[3]–4.2
Sample size (all teens)	6,514	7,138	…	6,060	6,449	…

[1] Parental education level is measured as the educational attainment of the more educated parent.
[2] Statistically significant at the 1-percent level.
[3] Statistically significant at the 5-percent level.
[4] Statistically significant at the 10-percent level.

NOTE: Data are from CPS outgoing rotations. Figures are weighted. Teens are still living at home with parent(s).

Table 3. **Average hours worked per week by employed teens aged 16 to 19 years during the 1995–96 and 2003–04 school years**

Category	1995–96		2003–04		Percentage-point change, 1995–96 to 2003–04	
	Average hours	Percent with 20 or more hours per week	Average hours	Percent with 20 or more hours per week	Average hours	Percent with 20 or more hours per week
All Teens	19.1	33.8	18.2	31.7	[2]–0.9	[3]–2.2
Female	17.7	30.1	16.9	27.4	[3].9	[3]–2.7
High school student	14.1	16.6	13.2	12.5	[2]–1.0	[2]–4.1
Male	20.4	37.3	19.5	35.9	[3]–.9	–1.4
High school student	15.3	20.0	14.0	16.3	[2]–1.2	[2]–3.7
Age						
16 years	13.2	13.8	12.3	9.8	[3]–1.0	[2]–4.1
17 years	15.5	20.8	14.3	17.2	[2]–1.3	[3]–3.6
18 years	20.7	39.6	20.1	38.1	–.6	–1.6
19 years	24.9	53.9	23.6	52.0	[3]–1.3	–1.9
Family structure and parental education level						
Married-couple family[1]	18.8	32.5	17.9	30.5	[2]–.9	[4]–2.0
No high school degree	22.8	51.8	23.8	49.4	1.0	–2.4
High school degree	21.2	39.6	20.2	38.6	[4]–1.1	–.9
Some college	18.7	33.0	18.5	32.7	–.2	–.3
4-year college degree	16.7	25.6	15.0	19.7	[2]–1.7	[2]–5.9
Professional or graduate degree	15.0	17.0	14.1	17.4	–.8	.4
Single-parent family	20.2	38.4	19.2	36.5	–1.0	–1.9
No high school degree	22.0	50.6	23.4	47.3	1.4	–3.3
High school degree	21.3	41.8	19.8	41.3	–1.5	–.5
Some college	19.1	34.6	19.8	39.1	.7	4.5
4-year college degree	19.3	31.6	16.7	23.2	[4]–2.6	–8.4
Professional or graduate degree	17.6	24.4	12.6	14.3	[3]–5.0	–10.1
Race or ethnicity						
White, non-Hispanic	18.7	31.9	17.5	29.2	[2]–1.3	[2]–2.7
Minority	21.1	43.5	21.1	41.4	.0	–2.1
School enrollment and parental education level						
High school dropout	27.3	64.2	27.3	62.7	–.1	–1.6
Not a student, high school graduate	31.6	75.9	31.2	78.5	–.3	2.6
High school student	14.7	18.4	13.6	14.3	[2]–1.1	[2]–4.0
Parent has—						
No high school degree	15.3	30.0	17.2	27.3	1.9	–2.7
High school degree	16.1	21.9	14.6	19.2	[2]–1.5	–2.7
Some college	15.0	19.3	14.2	14.7	[4]–.8	[2]–4.7
4-year college degree	13.3	11.8	11.8	8.5	[2]–1.5	[4]–3.3
Professional or graduate degree	12.6	11.2	11.7	8.7	–.9	–2.5
College student	18.5	32.6	18.1	33.6	–.4	1.0
Sample size (all teens)	5,126	5,126	4,851	4,851	…	…

[1] Parental education level is measured as the educational attainment of the more educated parent.
[2] Statistically significant at the 1-percent level.
[3] Statistically significant at the 5-percent level.
[4] Statistically significant at the 10-percent level.

NOTE: Data are from CPS outgoing rotations. Figures are weighted. Teens are still living at home with parent(s).

table 4) reflect similar patterns. In families in which parents either completed high school or had no high school degree, a much greater fraction of teens reported working more than 20 hours per week, compared with teens in families with college-educated parents.[21] Moreover, as in the CPS data, this divide appears to have grown over time. Thus, at both the extensive and intensive margins, teens in more highly educated families are spending less time in paid employment. (That is, fewer such teens work, and those who do, work fewer hours.) In contrast, although employment for teens in less educated families also declined at the extensive margin, it did so by less, and hours worked at the intensive margin were virtually unchanged.

Recent trends in teen time use: MTF. Trends in teen employment rates and conditional hours worked raise an obvious question: how are those teens who are not employed (or who are working fewer hours) spending their time if not at paid work? The MTF data reported in tables 4 and 5 provide some insight. Because teens in the most highly educated families are working far less than in the past, one might expect that they would be devoting more hours to homework; yet, to the contrary, MTF figures on high school seniors' time spent doing homework show virtually no change for those whose parents are the most educated (table 4), alongside a considerable reduction in homework time for teens in less educated families.[22] As of 2003–04, 67 percent to 71.1 percent of teens in families in which the most educated parent either completed high school or had no high school degree spent less than 5 hours per week on homework, whereas the corresponding range for teens whose most educated parent had completed college or gone even further was 49.3 percent to 58.8 percent. These percentages are particularly striking in light of research which suggests that secondary school students must spend at least 5 hours per week on homework in order to derive any measurable benefits in terms of academic achievement.[23]

Table 4. Percent of high school seniors reporting time spent on homework and on paid and unpaid work, by school year, 1975–76 and 2003–04

Category and school year	All seniors reporting	Race or ethnicity		Sex		Family structure		Parental education level[1]				
		White, non-Hispanic	Minority	Male	Female	In single-parent family	In married-couple family	No high school degree	High school degree, no college	Some college	4 years of college	More than 4 years of college
More than 20 hours per week at paid or unpaid work												
1975–76	28.8	30.4	15.9	34.6	23.4	25.8	29.4	27.7	32.9	30.8	25.8	20.7
2003–04	[2]25.5	[2]25.9	[2]26.7	[2]26.7	24.2	26.9	[2]25.0	30.4	32.6	30.0	[3]22.8	[2]16.4
Hours per week on homework												
Less than 5:												
1975–76	54.5	54.4	55.8	58.5	50.7	55.0	54.5	60.8	63.9	47.4	45.6	47.1
2003–04	[2]61.9	[2]61.4	[3]65.2	[2]63.9	[2]57.9	[2]67.1	[2]58.8	67.0	[2]71.1	[2]64.6	[2]58.8	49.3
More than 10:												
1975-76	22.7	23.2	18.6	19.5	26.7	20.5	23.4	22.5	16.3	26.7	27.4	28.0
2003–04	[2]17.6	[2]17.7	[3]16.5	[2]16.9	[2]20.8	[2]16.2	[2]19.8	12.7	[2]10.5	[2]16.2	[2]20.8	27.7
Sample size												
1975–76	2,960	2,427	302	1,491	1,469	590	2,530	349	933	403	487	310
2003–04	2,188	1,493	236	1,058	1,130	674	1,608	109	425	412	654	460

[1] In married-couple families, parental education level is measured as the educational attainment of the more educated parent.

[2] Statistically significant at the 1-percent level compared with 1975–76 percentage.

[3] Statistically significant at the 5-percent level compared with 1975–76 percentage.

NOTE: Data are from MTF. Figures are weighted.

Table 5 presents MTF data on the percentage of teens engaging in various activities (apart from homework and paid or unpaid work) at least once per week. Although these data fail to capture the intensive margin, they suggest little change in the percentage of teens watching television or in the percentage playing sports or exercising, and large decreases in the percentage of teens helping out around the house and reading for leisure. Notably, however, teens in families in which the most educated parent either completed high school or had no high school degree significantly increased the time they spent on creative writing, perhaps in conjunction with Internet or computer use, such as writing on blogs, and all teens (except those in families in which the most educated parent had no high school degree) substantially increased their participation in community or volunteer activities. One explanation for the rise in the rate of volunteering is that a growing fraction of public and private high schools is mandating the

Table 5. Percent of high school seniors reporting engaging in various activities at least once a week, by school year, 1975–76 and 2003–04[1]

Activity and school year	Race or ethnicity			Sex		Family structure		Parental education level[2]				
	All seniors reporting	White, non-Hispanic	Minority	Male	Female	In single-parent family	In married-couple family	No high school degree	High school degree, no college	Some college	4 years of college	More than 4 years of college
Watch televison												
1975–76	94.0	93.9	96.5	94.8	93.2	94.0	94.0	95.3	95.6	93.1	93.5	92.0
2003–04	[4]95.3	[4]95.4	98.0	95.5	[3]95.6	94.7	[4]95.6	98.2	95.8	95.6	[4]96.1	94.1
Sports or exercise												
1975–76	68.4	68.7	67.1	74.2	62.3	67.5	68.6	60.1	68.5	69.8	70.2	74.9
2003–04	68.2	70.4	[3]51.8	73.8	63.0	[5]62.8	70.5	64.6	[3]59.3	64.4	74.0	76.9
Social activities (friends, parties)												
1975–76	87.8	88.0	86.4	89.2	86.3	84.7	88.5	84.6	89.7	87.9	90.8	85.9
2003–04	86.9	87.8	[4]79.3	88.4	85.4	87.0	86.9	[4]75.0	[3]83.1	89.5	90.6	89.3
Work around the house												
1975–76	78.1	77.6	81.4	76.8	80.1	77.7	78.2	81.0	79.9	76.2	77.7	73.3
2003–04	[3]59.2	[3]57.3	[3]69.7	[3]60.7	[3]57.1	[3]59.1	[3]59.3	[5]72.2	[3]63.9	[3]58.5	[3]59.3	[3]53.7
Read books, magazines												
1975–76	85.7	86.3	84.7	84.7	87.7	83.4	86.2	82.1	84.6	86.2	89.2	91.2
2003–04	[3]67.5	[3]66.9	[3]71.8	[3]62.9	[3]72.4	[3]65.5	[3]68.3	[3]57.2	[3]57.7	[3]67.5	[3]72.4	[3]75.1
Creative writing												
1975–76	14.5	13.7	18.7	11.5	17.8	17.0	14.0	12.6	11.6	17.7	16.3	21.6
2003–04	[3]19.4	[3]17.0	[3]29.7	[3]15.3	[3]23.3	20.6	[3]19.3	[3]26.9	[3]16.6	20.8	19.3	20.3
Community or volunteer service												
1975–76	7.8	7.1	12.2	7.2	8.7	7.2	8.0	9.3	6.2	7.3	8.3	10.8
2003–04	[3]14.2	[3]13.2	14.9	[3]12.2	[3]16.3	[3]14.3	[3]14.2	10.4	[3]11.5	[3]14.4	[3]15.1	[3]16.5
Sample size												
1975–76	2,960	2,427	302	1,491	1,469	590	2,530	349	933	403	487	310
2003–04	2,188	1,493	236	1,058	1,130	674	1,608	109	425	412	654	460

[1] MTF asks about several other activities, including going to the movies; going to rock concerts; riding around in a car (or motorcycle) just for fun; playing a musical instrument or singing; doing art or craft work; time spent alone; going to a shopping mall; going to taverns, bars, or nightclubs; and going to video arcades. No significant change occurred in the participation rate of high school seniors in these activities between 1975–76 and 2003–04.

[2] In married-couple families, parental education level is measured as the educational attainment of the more educated parent.

[3] Statistically significant at the 1-percent level compared with 1975–76 percentage.

[4] Statistically significant at the 5-percent level compared with 1975–76 percentage.

[5] Statistically significant at the 10-percent level compared with 1975–76 percentage.

NOTE: Data are from MTF. Figures are weighted.

completion of service-learning or community service activities by students as one of their high school graduation requirements.[24]

2003–04 ATUS sample

This section takes advantage of newly available data from the 2003 and 2004 American Time Use Survey (ATUS), conducted by the Bureau of Labor Statistics, to understand how teens currently are spending their time at the intensive margin if they are not in paid employment. ATUS households are selected from households that completed their last (eighth) CPS household interview. Conducted 2 to 5 months after the last CPS interview, the ATUS randomly selects one respondent per household, aged 15 or older, to answer questions about his or her time-use activities during the past 24 hours in a time diary format, in addition to other questions. In the time diary portion of the survey, the respondent lists the activities that he or she engaged in during the previous day in sequential order, as well as how long each activity lasted.

In the ATUS analysis, the same restrictions are applied to the sample as those applied to the CPS sample, with one exception. That is, the data are restricted to teen respondents who live at home with at least one parent[25] and who also are not married or cohabiting, or a parent, themselves. The lone exception is that the teen sample is broadened to include those aged 15 years (in addition to 16- to 19-year-olds). Data on 15-year-olds are included throughout the analysis (except for table 6) because these data provide a useful window into teens' allocation of time.

Data on the teens' parents' characteristics and teens' completed level of schooling are drawn from the last month of the CPS and are referred to here as the "linked CPS data." Data on teens' current school enrollment are obtained from the ATUS. Teens' school status (high school student, high school graduate only, college student, or high school dropout) is identified by combining information from the linked CPS and the ATUS. High school dropouts are defined as those teens who indicate that they are not enrolled in school at any level (ATUS) and are not identified as having completed high school (linked CPS).[26]

As in the CPS and MTF trend analyses, time use is analyzed for those teens who respond to the time diary *during school-year months only*. The one difference is that the ATUS analysis is based on teen reports provided during all school months of 2003 and all school months of 2004, rather than just during the 2003–04 school year (as was done for the MTF and CPS outgoing rotation groups), to increase the sample size.

Responses on time-use activities are coded by the Bureau of Labor Statistics into any of 17 major categories, 105 second-tier categories, and 438 third-tier categories.[27] Then they are aggregated, with appropriate weights, in this article, to yield the weekly average hours estimates of time use shown in tables 6-9.[28] Responses with zero hours are included; thus, estimates of average paid hours worked may differ sharply from the estimates of conditional hours worked presented in table 3.

The advantage the ATUS affords for this article is that it provides the first estimates of what will be regularly available information on the time use of teens (and other individuals). A disadvantage is the small sample size for this group: as shown in appendix table A–1, the ATUS teen sample is one-tenth the size of the teen sample from the outgoing rotations of the CPS. (The ATUS sample is restricted to those aged 16 years and older in appendix table A–1 and table 6, for purposes of comparability.) The design of the ATUS raises some concerns about the selectivity of the sample, and these concerns are particularly relevant to teens, because younger people tend to be especially mobile.[29] Suppose a teen is randomly selected for interview from the CPS, but subsequently exits the household. Then that teen will not be included in the ATUS sample. One consequence, as can be seen in appendix table A–1, is that the ATUS includes a smaller fraction of 19-year-olds, and thus a smaller fraction of those who are enrolled in college, than does the CPS. Although this distinction is useful to keep in mind, the focus of much of the ATUS analysis conducted in this article is on time-use patterns of enrolled *high school* youth, who tend to be aged 15 to 18 years.

The top portion of table 6 compares two estimates of hours worked from the ATUS: (1) usual hours worked, collected from the teen's response to the question "How many hours per week do you usually work at your job?" and (2) estimates of actual hours spent in paid work, drawn from the teen's time diary responses (ATUS time diary). These figures tend to be fairly close, but are not identical. Differences may arise due to (1) discrepancies between work activities yesterday compared with what is usual, (2) which activities the teen describes as paid work, or (3) biases that arise in retrospective responses to usual hours worked.[30]

Information on usual hours worked also is taken from the linked CPS data. An important caveat is that these data are obtained several months prior to data collection from the ATUS, reducing comparability because teens' work activities fluctuate over the calendar year, especially from summer to the school year. Another caveat, relevant to estimates of teen time use calculated from the linked CPS data and from the CPS outgoing rotations (bottom

Table 6. **Comparison of employment rates and hours worked from CPS outgoing rotations, 2003–04 school year, and American Time Use Survey, school months 2003 and school months 2004, teens aged 16 to 19 years**

Source of data	All teens reporting	Race or ethnicity		Sex		Family structure		Enrolled in high school, by parental education level[1]					
		White, non-Hispanic	Minority	Male	Female	In single-parent family	In married-couple family	All teens reporting	No high school degree	High school degree, no college	Some college	4 years of college	Professional or graduate degree
For teens who participated in ATUS, school months, 2003 and 2004													
Estimates generated from ATUS data:													
Actual hours worked per week (from time diary)	9.0	11.1	5.7	10.1	7.9	9.2	9.0	5.9	2.6	6.6	6.9	6.7	4.0
Usual hours worked per week	8.8	10.3	6.3	9.4	8.1	9.2	8.6	6.2	4.8	7.4	7.0	5.8	4.4
Percent employed	43.8	52.6	27.6	43.2	44.5	40.0	45.2	38.4	21.0	41.9	42.7	39.2	37.3
Estimates generated from linked CPS data:[2]													
Usual hours worked per week	6.6	8.9	2.9	6.6	6.7	6.0	6.9	4.2	2.9	4.2	4.8	3.8	4.4
Percent employed	34.8	45.8	15.4	32.2	37.6	31.2	36.1	27.8	17.1	29.8	27.6	27.4	34.3
Sample size	1,285	904	311	672	613	384	901	946	92	216	271	220	147
For teens in households that participated in CPS (outgoing rotations), 2003–04 school year													
Estimates generated from CPS data:													
Usual hours worked per week	6.1	6.8	4.7	6.3	5.8	5.2	6.4	3.7	2.7	3.7	4.3	3.6	3.1
Percent employed	33.4	38.9	22.3	32.3	34.6	26.9	35.6	27.0	15.6	25.2	30.2	30.6	26.7
Sample size	13,587	9,555	3,194	7,138	6,449	3,264	10,323	9,235	791	2,400	2,847	1,925	1,272

[1] In married-couple families, parental education level is measured as the educational attainment of the more educated parent.

[2] Figures are from CPS survey administered 2 to 5 months earlier.

NOTE: For the characteristics of the two survey samples, see appendix table A–1. All figures are weighted.

of table 6), is that the CPS permits proxy reports. Thus, it is often the teen's parent or head of household who answers the survey questions about the teen's usual hours worked, in contrast to the teen him- or herself, who provides a self-report in the ATUS. (See appendix exhibit A–1.) The difference in the two types of report can best be seen by comparing estimates (provided by teens) of usual hours worked during school months from the ATUS with estimates (often, proxy reports) of usual hours worked per week during school months from the CPS outgoing rotations. As table 6 shows, self-reported figures considerably exceed proxy reports of work activity, presumably because teens know more about what they are doing.

In tables 7–9, all information on teens' hours worked is based on their own self-reports from the question on usual hours worked and on the time diary section of the ATUS. Teens' activities documented in the time diary are separated into 15 key activities, as described in appendix exhibit A–2. Among these activities are time spent in paid work, housework, playing sports, traditional activities (extracurricular activities plus hobbies, reading, and writing), screen time (television plus computer use for games and leisure), hanging out (including thinking, relaxing, socializing, and watching sports), and leisure shopping (shopping at stores, but excluding shopping for food, gas, or groceries).

ATUS findings on teen time use

Although some existing research has focused on teens' detailed time-use patterns,[31] far less is known about how these patterns vary by parental education.[32] Table 7 shows that teen time use differs relatively little across family structure (married-couple, as opposed to single-parent, family), but much more markedly by race or ethnicity, sex, school enrollment status, and parental education. For instance, as the table indicates, male teens spend much less time doing homework and housework, and more time being engaged in paid work, sports, and screen activities, than do their female counterparts. Also, minority teens spend at least 50 percent more time commuting to school and considerably less time (5.1 hours compared with 9.3 hours) performing paid work than do white, non-Hispanic teens, and, as would be expected, work hours of high school dropouts considerably exceed those of enrolled high school students.

Tables 7 (bottom panel), 8, and 9, which provide figures on enrolled high school students only, confirm a number of striking patterns previously identified in the other data sets. First, as in MTF, time spent in homework increases dramatically with parental education, ranging from slightly more than 4 hours per week for teens in the least educated families to as much as 9 hours per week for teens in the most highly educated families. (See table 7.) Moreover, as shown in table 8 for female teens and table 9 for male teens, girls enrolled in high school spend considerably more time (6.9 hours) on homework than do their male counterparts (4.7 hours).

Data on paid work from both the "usual hours worked" question and the time diary further confirm the "hill" relationship between teen employment and parental education identified earlier in tables 1 and 2. For instance, as shown in Table 7, average hours spent in paid work (from the time diary) were highest, around 5.9 hours per week, for teens whose most educated parent had completed some college only and were substantially lower in the least and most highly educated families (2.3 and 3.4 hours per week, respectively).

Finally, the ATUS data indicate that teens in the most highly educated families spend considerably more time on "traditional activities," defined as extracurricular activities, hobbies, reading, and writing. Although the ATUS data do not enable one to identify whether teens in highly educated families are being *increasingly* channeled into these activities or others, rather than into paid employment, they demonstrate the stark difference in teen time use by parental education at a recent point in time.

Implications and summary

What implications do these patterns and trends have for teens' future success? Academic research provides some indication of those teen time-use activities which are more "productive" than others. Theoretically, teen employment may yield positive or negative benefits. On the one hand, teen employment provides benefits such as building good work habits. In addition, such employment may ease strained family finances if teen earnings offset what would have been parental expenditures. On the other hand, teen employment may reduce the quality or amount of human capital acquired to the extent that employment displaces time or attention devoted to schooling.[33] Although the empirical evidence is mixed, it appears to indicate that teens often benefit from holding paid employment, but also suggests that working too many hours (more than 20 hours per week) has detrimental consequences.[34] Research also provides some information on the impact of alternative uses of teen time. Not surprisingly, for instance, teens who spend more time completing homework are more likely to go to college.[35] In addition, academic achieve-

Table 7. Estimate of average weekly hours spent in selected activities by teens aged 15 to 19 years, school months 2003 and school months 2004

Activity	All teens reporting	Race or ethnicity		Sex		Family structure		School enrollment[1]			
		White, non-Hispanic	Minority	Male	Female	In single-parent family	In married-couple family	High school dropout	Enrolled in college	High school degree, no college	Enrolled in high school
Personal	70.79	69.56	73.24	70.39	71.24	73.00	70.00	77.81	71.01	75.08	70.09
School	21.22	19.93	23.47	20.61	21.88	21.46	21.14	2.30	10.56	.00	25.41
Homework	5.45	5.40	4.77	4.25	6.77	4.07	5.95	.40	7.33	1.84	5.76
Paid work	7.59	9.25	5.07	8.43	6.67	8.10	7.41	17.34	13.82	24.37	4.87
Housework	4.02	4.17	3.86	3.23	4.88	4.51	3.84	7.59	5.40	3.86	3.46
Household care	.77	.75	.81	.53	1.05	.64	.82	1.89	.85	.70	.69
Nonhousehold care	1.51	1.86	.93	1.23	1.82	1.79	1.41	2.22	2.09	2.09	1.33
Play sports	4.71	5.00	4.40	6.20	3.06	4.38	4.84	3.17	2.27	5.09	5.26
Traditional activities	1.55	1.76	1.11	1.20	1.94	.92	1.77	1.34	.87	.92	1.69
Screen time	20.59	20.10	21.37	23.45	17.44	21.64	20.20	21.71	17.89	27.68	20.71
Hanging out	12.24	12.54	11.89	12.24	12.25	12.03	12.32	15.38	13.78	11.14	11.83
Leisure shopping	2.70	2.91	2.23	2.16	3.29	2.35	2.82	2.96	5.25	2.14	2.30
Organizations	2.36	2.35	2.24	2.00	2.74	1.68	2.61	3.67	1.90	1.64	2.36
Work-related travel	.63	.79	.36	.70	.55	.75	.58	1.45	.85	2.04	.44
Education-related travel	1.64	1.37	2.04	1.50	1.79	1.67	1.63	.22	2.17	.00	1.74
Usual hours worked per week	7.33	8.67	5.20	7.76	6.86	7.83	7.15	14.03	11.34	25.31	5.01
Percent enrolled in high school	76.8	72.9	84.0	75.2	78.6	78.8	76.1	0.0	0.0	4.1	100.0
Percent employed	38.2	46.2	23.9	37.1	39.3	36.4	38.8	52.5	52.8	67.8	32.6
Sample size	1,625	1,140	397	852	773	480	1,145	88	195	64	1,277

Activity	All teens reporting	Enrolled in high school by parental education level[2]					
		No high school degree	High school degree, no college	Some college	4 years of college	Professional or graduate degree
Personal	70.09	72.83	70.47	70.81	68.79	67.92
School	25.41	28.49	23.47	24.75	27.10	25.29
Homework	5.76	4.33	4.17	5.64	6.00	9.01
Paid work	4.87	2.27	5.26	5.87	5.51	3.35
Housework	3.46	3.93	4.23	3.54	2.86	2.64
Household care	.69	.31	.69	.76	.61	.89
Nonhousehold care	1.33	1.33	1.36	1.72	.98	.98
Play sports	5.26	6.30	6.05	4.29	5.22	5.17
Traditional activities	1.69	.52	.81	1.68	2.52	2.79
Screen time	20.71	20.37	22.04	20.23	19.84	21.07
Hanging out	11.83	11.87	13.50	11.55	9.94	12.28
Leisure shopping	2.30	2.02	2.72	2.15	1.97	2.53
Organizations	2.36	.82	2.52	2.53	2.72	2.24
Work-related travel	.44	.16	.54	.53	.48	.30
Education-related travel	1.74	3.16	1.71	1.34	1.71	1.60

Table 7. Continued—Estimate of average weekly hours spent in selected activities by teens aged 15 to 19 years, school months 2003 and school months 2004

Activity	All teens reporting	No high school degree	High school degree, no college	Some college	4 years of college	Professional or graduate degree
Usual hours worked per week	5.01	3.96	6.00	5.71	4.64	3.42
Percent enrolled in high school	100.0	100.0	100.0	100.0	100.0	100.0
Percent employed	32.6	19.5	35.0	37.1	33.2	29.2
Sample size	1,277	117	295	376	279	210

[1] Categories are identified on the basis of information on degree completed from linked CPS (2–5 months prior to ATUS) and information on enrollment from ATUS. High school dropouts are defined as teens who had not completed high school at the time of the CPS interview and who were not enrolled in any schooling at the time of the ATUS interview. This group likely includes some individuals who graduated from high school after the CPS interview.

[2] In married-couple families, parental education level is measured as the educational attainment of the more educated parent.

SOURCE: American Time Use Survey,

ment, particularly in mathematics, has been found to decline as the time youths spend working at paid employment or around the house, socializing with friends, or watching television increases.[36] Research suggests as well that engagement in extracurricular and service-learning activities yields positive benefits. Participation in these activities has been found to reduce dropping out of high school, criminal behavior, early childbearing, smoking, and the use of drugs and alcohol. Participation in structured youth sports appears to yield potentially negative as well as positive effects.[37]

All of these findings provide insight into the implications of current trends and patterns in teen time use. Teens in families with less education spend less time each week on homework and reading than they did 30 years ago, a fact that raises concern, given the positive link between homework for this age group and academic success. They are, however, more likely than in the past to engage in creative writing each week. In addition, rates of participation in community or volunteer activities increased for all teens (except those with parents with the least amount of education, who already were volunteering at relatively high rates), which may yield positive effects. Employment rates for teens in families with less education declined far less than for teens in more educated families, but whether that trend is favorable or unfavorable is difficult to assess. For teens in families with less education, observed declines may be related to a spatial mismatch between jobs and home, a lack of transportation, or reduced opportunities, all critical issues that require further exploration.

In general, teens in families with more education substantially decreased the time they spent in paid employment, at both the intensive and extensive margins, and increased their rate of volunteerism. Especially in more highly educated families, trends for teens suggest some substitution of volunteer work for paid work, perhaps to enhance their college prospects, as is suggested by anecdotal media reports, or due to high school graduation requirements. Whether this shift yields the expected benefits is not yet clear.

This article has provided only a first step in examining teens' time use and its implications. In the future, it will be possible to use data from the ATUS to examine *trends* in teen time use. The article emphasizes the point that teens spend time in a variety of activities, not just one activity in isolation.[38] However, existing research has focused principally on the benefits and costs of one activity at a time. To understand more fully the likely overall impact of documented shifts in teen employment patterns, future research is needed to examine the differential benefits derived from work, school, and extracurricular activities separately *and* from various combinations of these activities. □

Table 8. Estimate of average weekly hours spent in selected activities by female teens aged 15 to 19 years, school months 2003 and school months 2004

Activity	All female teens reporting	Race or ethnicity		Family structure		Enrolled in high school, by parental eduction level [1]					
		White, non-Hispanic	Minority	In single-parent family	In married-couple family No	All female teens reporting	No high school degree	High school degree, no college	Some college	4 years of college	Professional or graduate degree
Personal	71.24	70.57	72.59	73.45	70.37	70.77	72.20	71.50	70.06	69.84	71.40
School	21.88	19.94	25.98	21.07	22.20	25.32	32.55	22.30	24.53	27.32	25.25
Homework	6.77	6.24	6.61	5.16	7.40	6.93	5.03	4.50	7.04	7.62	10.63
Paid work	6.67	8.01	4.69	8.05	6.12	4.73	2.69	5.77	6.76	2.81	2.83
Housework	4.88	4.94	4.87	5.17	4.77	4.21	6.82	5.13	3.56	3.47	3.38
Household care	1.05	1.01	1.08	.73	1.17	.90	.53	.74	.90	.95	1.28
Nonhousehold care	1.82	2.47	.69	2.59	1.51	1.64	1.05	1.58	2.16	1.34	1.38
Play sports	3.06	3.90	1.59	2.24	3.39	3.27	2.76	3.10	2.63	4.40	3.38
Traditional activities	1.94	2.05	1.65	1.34	2.17	2.10	.87	.85	2.15	3.41	2.83
Screen time	17.44	17.22	18.20	18.87	16.88	17.86	16.84	19.54	18.64	15.34	17.79
Hanging out	12.25	12.62	11.67	11.89	12.39	12.07	12.22	14.29	12.73	9.52	10.65
Leisure shopping	3.29	3.47	2.73	3.26	3.30	2.82	2.55	3.65	2.75	2.21	2.47
Organizations	2.74	2.74	2.50	1.95	3.05	2.94	1.08	3.28	3.02	3.86	2.08
Work-related travel	.55	.63	.47	.82	.44	.46	.19	.80	.49	.30	.25
Education-related travel	1.79	1.45	2.38	1.68	1.84	1.79	3.59	1.70	1.15	1.82	2.20
Usual hours worked per week	6.86	8.20	4.48	7.22	6.72	4.90	2.56	6.66	6.04	3.56	3.13
Percent enrolled in high school	78.6	75.6	85.1	80.7	77.8	100.0	100.0	100.0	100.0	100.0	100.0
Percent employed	39.3	47.7	23.7	36.4	40.4	35.1	14.6	38.6	43.1	31.9	30.7
Sample size	773	553	175	233	540	610	54	140	180	125	111

[1] In married-couple families, parental education level is measured as the educational attainment of the more educated parent.

NOTE: All figures are weighted. See appendix exhibit A–1 for definitions of activities.

SOURCE: American Time Use Survey.

Table 9. Estimate of average weekly hours spent in selected activities by male teens aged 15 to 19 years, school months 2003 and school months 2004

Activity	All male teens reporting	Race or ethnicity		Family structure		Enrolled in high school, by parental eduction level [1]					
		White, non-Hispanic	Minority	In single-parent family	In married-couple family	All male teens reporting	No high school degree	High school degree, no college	Some college	4 years of college	Professional or graduate degree
Personal	70.39	68.57	73.80	72.65	69.67	69.48	73.37	69.66	71.56	67.98	64.33
School	20.61	19.91	21.44	21.88	20.21	25.50	25.86	24.86	25.00	26.93	25.29
Homework	4.25	4.60	3.28	2.99	4.69	4.66	3.81	3.86	4.34	4.54	7.43
Paid work	8.43	10.46	5.35	8.02	8.53	5.00	1.84	4.66	5.04	7.83	2.97
Housework	3.23	3.46	3.04	3.85	3.04	2.77	1.75	3.30	3.49	2.28	1.98
Household care	.53	.50	.59	.55	.51	.49	.13	.63	.67	.26	.53
Nonhousehold care	1.23	1.29	1.12	.94	1.32	1.04	1.49	1.16	1.26	.60	.59
Play sports	6.20	6.09	6.66	6.60	6.11	7.11	8.91	9.13	5.73	5.94	6.83
Traditional activities	1.20	1.47	.66	.49	1.43	1.31	.29	.79	1.19	1.68	2.59
Screen time	23.45	22.81	23.96	24.45	23.08	23.40	22.85	24.66	21.74	24.06	24.48
Hanging out	12.24	12.48	12.07	12.18	12.27	11.59	11.57	12.41	10.47	10.40	13.86
Leisure shopping	2.16	2.36	1.84	1.43	2.40	1.81	1.63	1.74	1.63	1.71	2.54
Organizations	2.00	1.97	2.03	1.37	2.22	1.80	.62	1.57	2.06	1.72	2.80
Work-related travel	.70	.94	.28	.65	.70	.43	.12	.24	.57	.66	.37
Education-related travel	1.50	1.29	1.76	1.66	1.44	1.68	2.88	1.72	1.54	1.59	1.07
Usual hours worked per week	7.76	9.12	5.79	8.45	7.53	5.11	4.94	5.29	5.41	5.67	3.71
Percent enrolled in high school	75.2	70.4	83.1	76.8	74.6	100.0	100.0	100.0	100.0	100.0	100.0
Percent employed	37.1	44.9	24.0	36.4	37.4	30.3	22.9	31.1	31.5	34.5	27.7
Sample size	852	587	222	247	605	667	63	155	196	154	99

[1] In married-couple families, parental education level is measured as the educational attainment of the more educated parent.

NOTE: All figures are weighted. See appendix exhibit A–1 for definitions of activities.

SOURCE: American Time Use Survey.

Notes

[1] Daniel Aaronson, Kyung-Hong Park, and Daniel Sullivan, "The Decline in Teen Labor Force Participation," *Economic Perspectives* (Federal Reserve Bank of Chicago), first quarter, 2006, pp. 2–18. (See also "Declining Teen Labor Force Participation," Summary 02–06, *Issues in Labor Statistics* (Bureau of Labor Statistics, September 2002); and Chinhui Juhn and Simon Potter, "Changes in Labor Force Participation in the United States, *Journal of Economic Perspectives*, summer 2006, pp. 27–46.)

[2] See figures in table 1 for enrolled high school students. Figures are calculated by the authors from CPS outgoing rotations.

[3] See Sandra L. Hofferth, David A. Kinney, and Janet S. Dunn, "The 'Hurried' Child: Middle-Class Phenomenon or Value Shift?" University of Maryland Working Paper, February 2006; Robert B. Reich, "How Selective Colleges Heighten Inequality," *Chronicle of Higher Education*, Sept. 15, 2000; and Barbara Hagenbaugh, "Full Activity, Study Schedules Have Many Teens Just Saying No to Jobs," *USA Today*, Apr. 7, 2005, p. 1B.

[4] Sara McLanahan, "Diverging Destinies: How Children Are Faring under the Second Demographic Transition," *Demography*, November 2004, pp. 607–28.

[5] Robert Kaestner, Sanders Korenman, and June O'Neill, "Has Welfare Reform Changed Teenage Behaviors?" *Journal of Policy Analysis and Management*, spring 2003, pp. 225–48.

[6] Writes columnist David Brooks, "We once had a society stratified by bloodlines....Now we live in a society stratified by education....Educated parents not only pass down economic resources to their children, they pass down expectations, habits, knowledge and cognitive abilities." (See David Brooks, "The Education Gap," *The New York Times*, Sept. 25, 2005, p. 11.) Hofferth, Kinney, and Dunn, "The 'Hurried' Child," cite a similar argument based on earlier work by Melvin L. Kohn and Carmi Schooler (*Work and Personality: An Inquiry into the Impact of Social Stratification* (Norwood, NJ, Ablex, 1983).)

[7] Edith Chen, Andrew D. Martin, and Karen A. Matthews, "Understanding Health Disparities: The Role of Race and Socioeconomic Status in Children's Health," *American Journal of Public Health*, April 2006, pp. 702–08.

[8] See, for instance, Robert M. Hauser, "Measuring Socioeconomic Status in Studies of Child Development," *Child Development*, December 1994, pp. 1541–45.

[9] For a summary of papers taking this approach, see Rebecca M. Blank, "Evaluating Welfare Reform in the United States," *Journal of Economic Literature*, December 2002, pp. 1105–66.

[10] For a discussion regarding the supervisory role, see Sara McLanahan and Gary Sandefur, *Growing Up with a Single Parent: What Hurts, What Helps*? (Cambridge, MA, Harvard University Press, 1994). Controlling for income, this study points to the importance of number of parents in explaining children's outcomes. (See also Lynn M. Mulkey, Robert L. Crain, and Alexander J. C. Harrington, "One-Parent Households and Achievement: Economic and Behavioral Explanations of a Small Effect," *Sociology of Education*, January 1992, pp. 48–65.)

[11] Of which approximately 8 percent (about 4,800) do not respond, due to absence, refusal to participate, and so forth.

[12] For a more detailed discussion of the MTF project, see Jerald G. Bachman, Lloyd D. Johnston, and Patrick M. O'Malley, *The Monitoring the Future Project after Twenty-Seven Years: Designs and Procedures,* Monitoring the Future Occasional Paper 54 (Ann Arbor, MI, Institute for Social Research, University of Michigan, 2001).

[13] The CPS analysis begins in 1995–96 because the CPS questionnaire underwent a substantial revision in January 1994, raising issues of comparability with earlier years. (See Anne E. Polivka and Stephen M. Miller, "The CPS After the Redesign: Refocusing the Economic Lens" (Bureau of Labor Statistics, March 1995), on the Internet at **www.bls.gov/ore/pdf/ec950090.pdf**.)

[14] For earlier research on school-year employment, see Donna S. Rothstein, "Youth employment during school: results from two longitudinal surveys," *Monthly Labor Review*, August 2001, pp. 25–37; and Christopher J. Ruhm, "Is High School Employment Consumption or Investment? *Journal of Labor Economics*, October 1997, pp. 735–76.

[15] Other previous research also uses parental education level (that is, the education level of the most educated parent) as a measure of family socioeconomic status in examining teens' social and economic patterns. See, for example, Nicholas Zill, Christine Winquist Nord, and Laura Spencer Loomis, *Adolescent Time Use, Risky Behavior and Outcomes: An Analysis of National Data*, Report to the Office of the Assistant Secretary of Planning and Evaluation (U.S. Department of Health and Human Services, 1995). An overview of this report is available online at **http://aspe.hhs.gov/hsp/cyp/xstimuse.htm**. The report (p. 11) cites research by John P. Robinson (*How Americans Use Time* (New York, Praeger, 1977)) showing a stronger predictive relationship between adult education levels and time use than between income levels and time use. Similarly, Jacquelynne S. Eccles, Bonnie L. Barber, Margaret Stone, and James Hunt, "Extracurricular Activities and Adolescent Development," *Journal of Social Issues*, vol. 59, no. 4, 2003, pp. 865–89, use mother's education level to control for family socioeconomic status in their study of the relationship between the two variables of the title.

[16] In very large schools, a sample of senior classes is drawn.

[17] Research points to a number of barriers to employment that contribute to this pattern: teens in such families tend to have less access to transportation, fewer networking opportunities, and fewer employment opportunities near where they live. Nonetheless, of teens who do hold employment, those in less economically advantaged families tend to work "substantially" more hours, typically defined as more than 20 hours per week. (See table 3, p. 25.) For a further discussion of these points, see Rothstein, "Youth employment during school"; and Robert I. Lerman, "Are Teens in Low-Income and Welfare Families Working Too Much?" *New Federalism: National Survey of America's Families*, series B, no. B–25 (Washington, DC, The Urban Institute, November 2000).

[18] Similar patterns in teen employment trends by sex are reported by Aaronson, Park, and Sullivan, "The Decline in Teen Labor Force Participation," and in *What Is Happening to Youth Employment Rates*? (Congressional Budget Office, November 2004).

[19] Congressional Budget Office, *Youth Employment Rates*.

[20] See, for instance, Doris R. Entwisle, Karl L. Alexander, Linda Steffel Olson, and Karen Ross, "Paid Work in Early Adolescence: Developmental and Ethnic Patterns," *Journal of Early Adolescence*, August 1999, pp. 363–88.

[21] As indicated in table 4, the survey asks about unpaid or paid work, without separating the two categories. The responses likely exclude "work around the house," because this is a separate category, as listed in table 5.

[22] One drawback to examining homework patterns of high school seniors is that they may have modified their studying behavior to the extent that college admissions depend on junior-year grades. Howev-

er, recent longitudinal research finds not only little change in hours devoted to homework among high school students over the past 40 years, despite anecdotal evidence to the contrary, but also no difference between 13- and 17-year-olds in hours spent on homework. The only measurable increase in time spent on homework is among elementary school children, although research points only to a weak-to-nonexistent or even negative correlation between homework and academic achievement for that age group. (See Brian P. Gill and Steven L. Schlossman, "A Nation at Rest: The American Way of Homework," *Educational Evaluation and Policy Analysis*, fall 2003, pp. 319–37; and Harris Cooper and Jeffrey C. Valentine, "Using Research to Answer Practical Questions About Homework," *Educational Psychologist*, fall 2001, pp. 143–53.)

[23] For further discussion, see Cooper and Valentine, "Using Research."

[24] For a discussion of trends, see Jeffrey A. McLellan and James Youniss, "Two Systems of Youth Service: Determinants of Voluntary and Required Youth Community Service," *Journal of Youth and Adolescence*, February 2003, pp. 47–58; and Brian Kleiner and Christopher Chapman, "Youth Service-Learning and Community Service Among 6th- through 12th-Grade Students in the United States: 1996 and 1999," *Education Statistics Quarterly* (National Center for Education Statistics, U.S. Department of Education, first quarter, 2000). Since 1997, Maryland public high school students have been required to complete 75 hours of community service in order to graduate. (See McLellan and Youniss, "Two Systems"; and Maryland Department of Education Web site, **http://www.marylandpublicschools.org/MSDE/programs/servicelearning**. Maryland is the largest jurisdiction and the only State to have implemented such a program.)

[25] Hence, educational information on the custodial parent is available.

[26] Because teens' educational attainment is not updated in the ATUS, the category of high school dropouts may include some teens who received a high school degree after the CPS was conducted. The linked CPS and the ATUS differ not only in timing, but also regarding who provides information on the teen. As discussed in the text, the CPS permits proxy reports (for example, parental reports), while all ATUS data are self-reports (by teens). The latter factor may result in discrepant reports.

[27] Kristina J. Shelley, "Developing the American Time Use Survey activity classification system," *Monthly Labor Review*, June 2005, pp. 3–15.

[28] The weekly average is a weighted sum that counts weekdays as five-sevenths, and weekends as two-sevenths, of the weekly total.

[29] The low response rate of the ATUS—around 60 percent—and its implications is a topic of much discussion. See, for instance, Katharine G. Abraham, Aaron Maitland, and Suzanne Bianchi, "Nonresponse in the American Time Use Survey: Who Is Missing from the Data and How Much Does It Matter?" paper presented at the ATUS Early Results Conference, Bethesda, MD, Dec. 9, 2005; and Grace O'Neill and Jessica Sincavage, "Response Analysis Survey: A Qualitative Look at Response and Nonresponse in the American Time Use Survey," BLS working paper (Bureau of Labor Statistics, 2004).

[30] For a detailed comparison of measures of hours worked in the ATUS, see Harley Frazis and Jay Stewart, "What can time-use data tell us about hours of work?" *Monthly Labor Review*, December 2004, pp. 3–9.

[31] See, for instance, "Variations in time use at stages of the life cycle," visual essay, *Monthly Labor Review*, September 2005, pp. 38–45; and F. Thomas Juster, Hiromi Ono, and Frank P. Stafford, "Changing Times of American Youth: 1981–2003," mimeograph (Ann Arbor, MI, Institute for Social Research, University of Michigan, November 2004).

[32] See Zill, Nord, and Loomis, "Adolescent Time Use." These authors analyzed data on 10th graders from the 1990 National Educational Longitudinal Survey and the 1987 Longitudinal Survey of American Youth. Their chief finding was that teens from more advantaged families engage in more "constructive activities."

[33] See, for instance, Christopher J. Ruhm, "Is High School Employment Consumption or Investment?" *Journal of Labor Economics*, October 1997, pp. 735–76; and Sharon Wofford Mihalic and Delbert Elliott, "Short- and Long-Term Consequences of Adolescent Work," *Youth & Society*, June 1997, pp. 464–98.

[34] Several authors have written extensively on this subject, most reporting negative academic, social, and physical outcomes for youths who work more than 20 hours per week. See, for example, Jerald G. Bachman and John Schulenberg, "How Part-Time Work Intensity Relates to Drug Use, Problem Behavior, Time Use, and Satisfaction Among High School Seniors: Are These Consequences or Merely Correlates?" *Developmental Psychology*, March 1993, pp. 220–35; Laurence Steinberg and Sanford M. Dornbusch, "Negative Correlates of Part-Time Employment During Adolescence: Replication and Elaboration," *Developmental Psychology*, March 1991, pp. 304–13; Nancy F. Weller, Steven H. Kelder, Sharon P. Cooper, Karen Basen-Engquist, and Susan R. Tortolero, "School-Year Employment Among High School Students: Effects on Academic, Social, and Physical Functioning," *Adolescence*, fall 2003, pp. 441–58; and Deborah J. Safron, John E. Schulenberg, and Jerald G. Bachman, "Part-Time Work and Hurried Adolescence: The Links Among Work Intensity, Social Activities, Health Behaviors, and Substance Use," *Journal of Health and Social Behavior*, December 2001, pp. 425–49. For a discussion of employment quality, see Julian Barling, Kimberley-Ann Rogers, and E. Kevin Kelloway, "Some Effects of Teenagers' Part-Time Employment: The Quantity and Quality of Work Make the Difference," *Journal of Organizational Behavior*, March 1995, pp. 143–54.

[35] Zill, Nord, and Loomis, "Adolescent Time Use."

[36] See Andrew J. Fuligni and Harold W. Stevenson, "Time Use and Mathematics Achievement among American, Chinese, and Japanese High School Students," *Child Development*, June 1995, pp. 830–42; and Thomas Ewin Smith, "Time Use and Change in Academic Achievement: A Longitudinal Follow-Up," *Journal of Youth and Adolescence*, December 1992, pp. 725–47. (See also Jennifer A. Fredricks and Jacquelynne S. Eccles, "Is Extracurricular Participation Associated With Beneficial Outcomes? Concurrent and Longitudinal Relations," *Developmental Psychology*, July 2006, pp. 698–713, for a discussion of post-high school effects of high school extracurricular activities.)

[37] See Jacquelynne S. Eccles and Bonnie L. Barber, "Student Council, Volunteering, Basketball, or Marching Band: What Kind of Extracurricular Involvement Matters?" *Journal of Adolescent Research*, January 1999, pp. 10–43, for a discussion of higher alcohol use among student athletes. Eccles, Barber, Stone, and Hunt, "Extracurricular Activities and Adolescent Development," find that most extracurricular activities, including sports, provide positive benefits for participants in terms of educational outcomes, controlling for social class, sex, and intellectual aptitude. However, higher rates of drinking are seen among members of school sports teams.

[38] This point was made earlier by W. Todd Bartko and Jacquelynne S. Eccles, "Adolescent Participation in Structured and Unstructured Activities: A Person-Oriented Approach," *Journal of Youth and Adolescence*, August 2003, pp. 233–41.

APPENDIX: Table and exhibits

Table A–1. Comparison of sample characteristics from CPS outgoing rotations, 2003-04 school year, and American Time Use Survey, school months 2003 and school months 2004, proportions of teens aged 16 to 19 years

Characteristic	ATUS	CPS outgoing rotations
Age[1]		
16 years	0.31	0.30
17 years	.31	.29
18 years	23	.23
19 years	.15	.19
Teen's education level[2]		
High school student	.72	.67
College student	16	.20
High school graduate, no college	.05	.08
High school dropout	.07	.07
Educational level of parent with highest education[3]		
No high school degree	.11	.10
High school degree	.23	.26
Some college	.29	.30
4 years of college	.21	.20
Professional or graduate degree	.15	.14
Race or ethnicity[3]		
White, non-Hispanic	.62	.66
Minority (Hispanic or African-American)	.33	.29
Sample size	1,285	13,587

[1] Calculated for the ATUS sample on the basis of age at the ATUS interview.

[2] Calculated for the ATUS sample on the basis of the teen's educational attainment at the time of the CPS and the teen's enrollment at the time of the ATUS interview.

[3] Calculated for the ATUS sample from the linked CPS.

NOTE: For comparison of hours estimates, see table 6. All figures are weighted.

Exhibit A–1. Definitions of work measures[1]

Data source	Time frame of data	Work Measure	Type of report
Linked CPS	2–5 months prior to ATUS survey	Usual hours worked	Proxy reports permitted
ATUS survey	School months		
Time diary		Actual hours worked	Teen self-report
Demographic questions		Usual hours worked	Teen self-report
Outgoing CPS rotations	School months	Usual hours worked	Proxy reports permitted
MTF	School months	Average hours per week	Teen self-report

[1] Work measured is paid work for all sources except MTF, for which work measured is both paid and unpaid work.

Exhibit A–2. ATUS codes and definitions

Activity	Details	Codes
Personal	Grooming, sleeping, travel time	010000–019999, 170100–170199
School	Any class	060101–060199
Homework	For any class	060301–060399
Paid work	On all jobs and income-generating activities	050101–050399
Housework	Including travel time	020000–020902, 170201–170299, 020905, 020999, 029999
Household care	Including travel time	030100–039999, 170300–170399
Nonhousehold care	Including travel time	040100–049999, 170400–170499
Play sports	Actively engaged (excludes watching)	130101–130199, 171301
Traditional activities	Extracurricular activities, hobbies, reading, writing	060201–060299, 120309–120311, 120312,120313
Screen time	Television and DVD watching and leisure-time computer use (surfing and computer games). Note: also includes board games (activity cannot be separated from computer games)	120303–120304, 120307–120308
Hanging out	Watching sports, attending parties, "relaxing," listening to music, attending events, phoning friends, related travel time	130201–130299, 120101–120299, 120301–120302, 120305–120306,120401–120499, 160100–160102, 171201–171299, 171302
Leisure shopping	Excludes shopping for groceries, food, gas	070104, 170702
Organizations	Civic, volunteer, and religious	140101–149999, 150101–159999, 100201–100299, 100303, 171004, 171401–171499, 171501–171599
Work-related travel	Travel time related to work	170501–170503
School-related travel	Travel time related to educational activities	170601
Omitted	Eating, business phone calls, buying goods and services (excluding "leisure" shopping), household and personal e-mail and mail, job search, and travel not elsewhere classified.	