

Dissertation Awards

1-1-1996

**The Effects of Part-Time Work and a Minimum Wage Hike on
Educational Outcomes for High School Students—An Overview:
Dissertation Summary**

Mark D. Turner
University of Maryland at College Park

The Effects of Part-Time Work and a Minimum Wage Hike on Educational Outcomes for High School Students

An Overview

Mark Turner

My dissertation addresses two sets of questions related to labor market policies. First, should we be encouraging high school students to work during the school year? Second, what are the effects of a minimum wage hike like the one recently passed by Congress on young people's school enrollment?

These questions have taken on greater importance in light of recent trends in youth employment. More teens are working and working more hours than at any time in the last three decades. In 1989, nearly half of all teenagers 16 to 19 years old worked during the school year; 50 percent of those with jobs worked 20 or more hours per week, and 10 percent worked 40 or more hours per week. Research findings, however, differ on the influence work during the school year has on academic performance and the effects of minimum wages on school enrollment. Based on work showing that early labor market experience improves future labor market outcomes (Rich 1993; Meyer and Wise 1986), some policy makers have advocated increasing students' exposure to the working world on the assumption that early job experience fosters attitudes and skills that can improve their transition from school to work. However, other studies have found that working an extreme number of hours during the school year—more than 20 or 30 hours a week—is associated with students' lower academic achievement and, by extension, future earnings ability (Steinberg, Fegley, and Dornbusch 1993; Greenberger and Steinberg 1986; Gottfredson 1985; Steinberg et al. 1982; Wirtz et al. 1987; Schill et al. 1985; Green et al. 1990).

Regarding the effect of a minimum wage hike on high school students' enrollment, most research suggests that an increase in the minimum wage may have its most detrimental effect on teenagers (Brown et al. 1982). A recent study by Neumark and Wascher (1995) found that a minimum wage hike would not only reduce teen employment opportunities, but would also induce some teens to drop out of school in search of work. Consequently, if a minimum wage hike negatively affects teens' early labor market experience and educational attainment, it may also adversely affect their future labor market outcomes.

Findings

Should we be encouraging high school students to work during the school year? My findings confirm the potential adverse effects that working too many hours can have on academic achievement. Working an extreme number of hours—i.e., 30 or more per week—during the school year is estimated to significantly lower standardized test scores, reduce grade point average; raise the likelihood of dropping out of high school, and decrease the likelihood of entering college. Might child labor laws affect high school students' school year employment and consequently their academic performance? My simulations of more restrictive child labor laws show that limiting work among students to 30 hours a week is estimated to significantly lower high school dropout rates and to increase college entrance rates. Restricting work among students to no more than 20 hours a week is estimated to have no incremental impact on dropout rates but to result in a significant increase in college entrance rates.

What are the effects of a minimum wage hike on school enrollment? My estimates show that a higher minimum wage does not affect teenagers' school enrollment decisions but does adversely affect their employment opportunities. Specifically, analysis using state- and individual-level data from the Current Population Survey shows that moderate increases in the minimum wage have statistically insignificant effects on school enrollment. As I demonstrate in my work, the strong link between the minimum wage and enrollment found in Neumark and Wascher's work is attributable to a systematic undercount of students enrolled in school. When I use a more accurate definition of school enrollment, I find no impact of minimum wages on education attainment. On the other hand, my analysis shows that the recently legislated 21 percent minimum

Mark Turner received his Ph.D. from the University of Maryland at College Park. He is a Research Associate at the Urban Institute. Mr. Turner's dissertation advisor was William N. Evans.

wage hike is estimated to reduce teen employment by 9.4 percent.

Problems with the Current Literature

The research to date showing ill effects of early labor market experience on academic performance, as well as the estimated effect of minimum wages on educational attainment, has several basic methodological limitations. First, most studies that have assessed the effect of work on academic achievement utilized relatively small and demographically limited data sets. The widely cited study by Steinberg et al. (1982) made use of a cross-sectional sample of 531 10th and 11th grade students in four high schools in Orange County, California. Wirtz et al. (1987) based their conclusions on a sample of 446 high school students who planned to attend college and who were all employed by fast food chains. Green et al. (1990) utilized data collected at a single high school in Moore, Oklahoma. Schill et al. (1985) used a sample of 4,587 students from the state of Washington.

Second, some of these same studies did not control for covariants and relied mostly on comparisons of means.

Third, and most important, these studies treated employment as exogenous (i.e., the authors assumed that the decision to work is not a function of student ability). By not accounting for self-selection, these studies may be under- or overstating the detrimental repercussions of work on academic achievement. In other words, if above (below) average students tend to work many (few) hours, then not accounting for self-selection could result in underestimating the harmful effects of employment on academic achievement.

Fourth, several studies that have assessed the effect of a higher minimum wage on employment and school enrollment used inaccurate measures of school enrollment, misclassifying students as nonstudents. For instance, Neumark and Wascher, using the May Current Population Survey (CPS), counted teenagers as enrolled only if they reported their *major activity* during the survey week as "going to school." If a student reported his *major activity* as "working," he was not asked about school enrollment and was therefore not classified as enrolled.

The assumption that work during school is determined independently of academic achievement is questionable. Both theoretical models and simple descriptive statistics suggest that work during school may not be randomly assigned. Seminal work by Ben-Porath (1967) and Heckman (1976) provide a theoretical framework that models how individuals simultaneously choose to allocate their time among

human capital production, work, and leisure in order to maximize lifetime discounted utility. These models show that the production of human capital and labor supply are jointly determined. If policy makers are concerned about the effect of school-year employment on academic achievement, Ben-Porath provides a theoretical justification for why researchers should treat employment as endogenous in estimating its effect on academic achievement.

The Ben-Porath (1967) life-cycle models implies that high-ability persons are more likely to excel in school and to work than those with less ability. This suggests a positive covariance between ability and work. If this is the case, then single-equation models that treat work as exogenous may understate the true impact of work on academic achievement. One can also envision situations where single-equation estimates would overstate the true effect of work on achievement. Suppose students who are doing poorly in school or students who expect to not graduate high school decide to work during school. Similarly, some students may place more weight on work than school. These students may work to gain labor market experience that may be valuable in the future. In this situation, single-equation models would attribute all of the reduced academic achievement to work during the school year, when in fact work during the school year is simply a signal for lower achievement.

Dissertation's Contribution to the Literature

This dissertation contributes to our understanding of how early labor market experience and labor market policies affect educational outcomes in three ways. First, unlike previous studies that used demographically or geographically limited samples, my analysis relies upon demographically representative samples—the High School and Beyond survey and the Current Population Survey. I also control for covariants, in contrast to earlier studies that did not account for observable heterogeneity.

Second, previous studies narrowly defined human capital. I use broad measures that encompass the quantity and quality of human capital—standardized test scores, grade point average (GPA), high school completion, and college entrance. Standardized test scores and GPA measure the quality of education, while high school completion and college entrance measure the quantity of education.

Third, previous studies that estimated the impact of early labor market experience on the production of human capital typically treated employment as exogenous. Here I allow human capital and employment decisions to be simultaneously

determined. This is accomplished by estimating a system of simultaneous equations that are identified with a set of instrumental variables that measure local labor market opportunities. Moreover, I utilize the longitudinal design of the High School and Beyond survey and control for self-selection by estimating individual fixed-effect models.

Fourth, I used the October Current Population Survey in my dissertation to show that the Neumark and Wascher measure of school enrollment systematically understates the proportion of teens in school by 7.4 percentage points and understates full-time enrollment by 5.6 percentage points. Notably, the definition of school enrollment affects estimates of whether a higher minimum wage significantly alters teens' school enrollment and employment status. Neumark and Wascher find that an increase in the minimum wage depresses school enrollment and employment, whereas my dissertation, using respondents' actual measure of school enrollment but otherwise identical specifications, found that the minimum wage does not affect school enrollment and moderately decreases teen employment.

References

- Ben-Porath, Yoram. 1967. "The Production of Human Capital and the Life Cycle of Earnings." *Journal of Political Economy*, vol. 75 (December).
- Brown, Charles et al. 1982. "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature*, vol. 20.
- Gottfredson, D. 1985. "Youth Employment, Crime and Schooling: A Longitudinal Study of a National Sample." *Developmental Psychology*, vol. 21.
- Green, D. et. al. 1990. "High School Student Employment in Social Context: Adolescents' Perceptions of the Role of Part-Time Work." *Adolescence*, vol. 25.
- Greenberger, Ellen, and Laurence Steinberg. 1986. *When Teenagers Work: The Psychological and Social Costs of Adolescent Employment*. New York: Basic Books, Inc.
- Heckman, James. 1976. "A Life-Cycle Model of Earnings, Learning, and Consumption." *Journal of Political Economy*, vol. 84, no. 4.
- Meyer, Robert, and David Wise. 1986. "High School Preparation and Early Labor Force Experience." In R. Freeman and D. Wise eds. *The Youth Labor Market Problem: Its Nature, Causes, and Consequences*. Chicago, Ill.: University of Chicago Press.
- Neumark, David, and William Wascher. 1995. "Minimum-Wage Effects on School and Work Transitions of Teenagers." *American Economic Review*, vol. 85, no. 2 (May).
- _____. 1992. "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws." *Industrial and Labor Relations Review*, vol. 46, no. 1 (October).
- Rich, Lauren. 1993. "The Forgotten Half in the Post-schooling Labor Market: Does High School Work Experience Matter?" Ph.D. dissertation., University of Michigan.
- Schill, William, et. al. 1985. "Youth Employment: Its Relationship to Academic and Family Variables." *Journal of Vocational Behavior*, vol. 26.
- Steinberg, Laurence, Suzanne Fegley, and Sanford Dornbusch. 1993. "Negative Impact of Part-Time Work on Adolescent Adjustment: Evidence from a Longitudinal Study." *Developmental Psychology*, vol. 29, no. 2.
- Steinberg, Laurence, et al. 1982. "Effects of Working on Adolescent Development." *Developmental Psychology*, vol. 18, no. 3.
- Wirtz, P., et. al. 1987. "Intense Employment While in High School: Are Teachers, Guidance Counselors, and Parents Misguiding Academically-Oriented Adolescents?" George Washington University Graduate Institute for Policy Education and Research.