

# Chicago Fed Letter

## Explaining the decline in teen labor force participation

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Fewer teenagers are participating in the labor force today than at any point since WWII. At just under 44%, teen labor force participation is 15 percentage points below its peak in the late 1970s. Why has there been a long-run secular decline in the work activity of young adults, and why has it sharply accelerated in the last five years?

Although teens represent only 4.2% of the current employed population, they account for almost two-thirds of the fall in aggregate labor force participation since 2000.

In this *Chicago Fed Letter*, we provide an overview of the decline in teen labor force participation (LFP).<sup>1</sup> After briefly summarizing the facts, we discuss whether the large recent drop in participation is a temporary product of a labor market that is weaker than the unemployment rate would suggest, or a more permanent drop driven by the increased attractiveness of study, changes in college financial aid, or something else.

But first let's motivate why this question is worth considering. The key reason is the sheer size of the decline of teen LFP and consequently its impact on the overall LFP rate. Central bankers and others often look to LFP to help assess the state of the macroeconomy. The most recent cycle is a case in point. The aggregate LFP rate fell from 67.3% at the beginning of the last recession in 2001 to 66% by 2004, and has barely budged since. This could imply that labor markets are slacker than the relatively low unemployment rate in 2006 suggests.

It is not clear, however, that the recent drop in LFP is primarily the result of weak labor demand. Fluctuations in LFP also reflect several long-running cultural and demographic trends unconnected to the business cycle, highlighted most recently by the aging population. Perhaps surprisingly, teens have played a large role in aggregate trends as well.

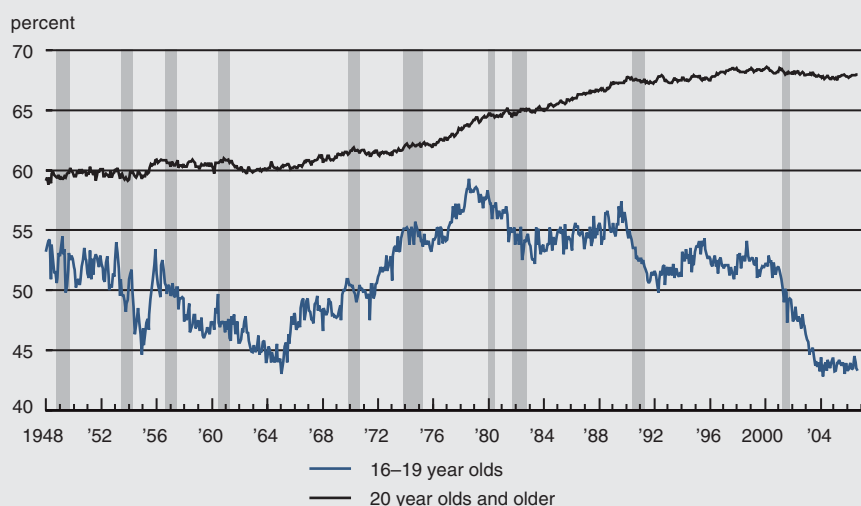
Although teens represent only 4.2% of the current employed population, they account for almost two-thirds of the fall in aggregate LFP since 2000. Strikingly, 16–17 year olds, who account for only 1.7% of workers, explain about 45% of the overall decline.<sup>2</sup> A better understanding of the forces shaping the LFP of teens may shed significant light on how to interpret trends in overall participation and, consequently, potential output.

The drop in teen LFP may also have implications for future productivity growth. In general, labor market experience tends to raise subsequent earnings. Moreover, it is easy to imagine that moderate amounts of time devoted to a part-time job during the summer or while in school might inculcate good work habits and allow young people to make more informed educational and career choices. Thus, it is possible that the reduction in teen work may have some negative effect on their future productivity. However, as we discuss later, the drop in teen LFP appears to be at least partially a product of an increase in school enrollment rates that could ultimately boost future productivity by a substantial amount.

### Facts about employment of young adults

Figure 1 displays the history of labor force participation of those aged 16–19 and, as a comparison, those aged 20 and

## 1. Labor force participation rates, by age



NOTE: The shaded areas are recessions as identified by the National Bureau of Economic Research.  
SOURCE: *Current Population Survey* from Haver Analytics.

older since 1948—the earliest year for which we have *Current Population Survey* data. The LFP rate is the share of non-institutionalized civilians who are either working or unemployed (available to work and actively looking for work) in a given month. As such, it ignores several groups, including those under 16, in the military, or in jail. Ignoring the latter likely even understates the recent decline in young adult LFP.

As the figure shows, there have been long periods of expansion and contraction in youth participation rates. In the years following WWII's conclusion, just over half of teenagers were in the labor force. But, soon thereafter, teen LFP fell, reaching a low of just under 45% in the early 1960s. Over the next two decades, teenagers slowly rejoined the labor market, peaking at 59% in the late 1970s. Since then, teen participation has pulled back again, with LFP rates falling steadily, punctuated by a particularly large decline starting around 2000.

The broad swings in teen LFP may be partially obscured by shorter-run fluctuations associated with the business cycle. Economic theory suggests that teenagers turn to schooling activities when labor market alternatives, and therefore opportunity costs, are weak. For example, one period where this matters a great deal is the late 1990s, when

we estimate that the booming economy pushed up teen LFP by roughly 0.5 percentage points to 1.2 percentage points, thus exaggerating the decline since then.

Of particular interest is the most recent acceleration of this decline. Between 2000 and 2005, the teen LFP fell by 8.4 percentage points. Of this, we estimate that roughly 1 percentage point is due to the business cycle. In addition, if the secular trend in existence since the 1980s had continued at the same rate, teen LFP would have dropped by another 1.8 percentage points. That leaves 5.6 percentage points of the 8.4-percentage-point fall since 2000 unexplained.

### Explanations

It seems likely that the most important factor behind the long-term decline in teen labor force participation is the significant increase in the returns to education that began shortly before teen participation peaked. The wage premium associated with a college education is now nearly twice as high as in the late 1970s, and teens appear to have responded to this development by spending more time in school. Indeed, school enrollments have increased by roughly 25% since 1985, with much of the recent increase the result of a major increase in summer school enrollments.

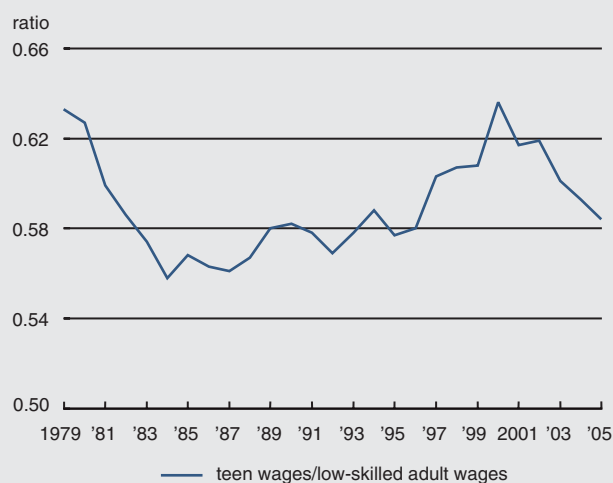
Teens in school are much less likely to participate in the labor force. Indeed, the simple shift in the share of teens enrolled in school can account for about two-thirds of the decline in participation through the mid-1990s. An additional portion of the decline is attributable to lower rates of participation among those enrolled in school, which, to some extent, may be due to an increase in the intensity with which enrollees pursue their studies. Relatively little of the decline is attributable to lower rates of participation by those who are not enrolled in school.

Another possibility is that teens today face greater labor market competition, pushing down their prevailing wage and discouraging some from working. Indeed, teen wages have fallen a bit over the last four years (see figure 2). Yet, we find no compelling evidence that associates the recent decline in teen participation with greater labor market competition due, for example, to larger cohorts of teens or an increase in the numbers of unskilled workers entering the labor market because of the 1996 welfare reform or changes in immigration.

In fact, teens' relative share of the population has declined. This, coupled with their greater incentive to allocate time to school rather than work, suggests a substantial downward shift in the relative supply of teen labor. One might expect this to raise the relative wage rate of teen workers. And, indeed, as shown in figure 2, from the early 1980s until fairly recently, the average hourly wage rate of teens has risen a few percentage points relative to prime-age workers without any college education, although it has generally fallen relative to all adults. This suggests either that the demand for teen labor is relatively elastic (highly responsive to small changes in the prevailing wage) or that it also has been shifting down over time. Both possibilities may be true.

A downward shift in demand for teen labor would be consistent with the existence of skill-biased technical change—the tendency for recent technological innovations to raise the productivity of highly educated workers relative to those, like teens, who are less educated. Indeed,

## 2. Ratio of teen wages to low-skilled adult wages



Source: Authors' calculations based on data from the *Current Population Survey*.

if any group should have had the demand for its labor reduced by such a development, it would be teens.

We also suspect the demand for teen labor may be relatively elastic. A compelling way to test such a hypothesis is to look at what happens to work activity in situations where there is a large and exogenous increase in the supply of low-skilled labor. One such event occurred in the Miami metropolitan area in 1980. David Card's classic study<sup>3</sup> showed that a large influx of low-skilled labor from Cuba had little impact on native LFP. We have shown the same result for U.S. teenagers (see note 1). Thus, the lack of a large increase in relative wages of teens in the face of a contraction in supply could also be due to highly elastic demand for teen labor.

It is less clear how to interpret the sharp drop in teen LFP that occurred between 2000 and 2003 and the lack of a significant rebound since then. There seem to be two ways to interpret this discrepancy. First, the trend rate at which teen participation is falling may have accelerated. Instead of continuing to decline at 0.3 percentage points per year, as it had since the 1980s, the teen participation rate now may be falling at almost 1 percentage point per year. In that case, current levels would be right on trend. Second, the 5.6-percentage-point gap between actual participation and what

would have been expected on the basis of past trends may be due to an extraordinary amount of additional labor market slack. In this case, we would expect an eventual rebound in teen LFP as this slack is worked off.

The weakness of teen wage rates certainly would be consistent with some measure of extra slack in their labor market, though one might reasonably expect a larger wage decline if the lower participation rates were the

equivalent of an extra 5 or 6 percentage points of teen unemployment.

Moreover, there are other reasons to doubt that a large part of the discrepancy between actual and projected teen participation is due to extra labor market slack. Unlike the previous two recessions (in 1990–91 and 2001) and the periods afterward, in recent years there has been no significant increase in the portion of nonparticipating teens who, though out of the labor force, report that they actually want a job. Thus, the teen population does not seem to feature an unusually large number of discouraged workers. Finally, the industries that tend to employ the most teens (e.g., restaurants, grocery stores, construction) have been experiencing above-average employment growth. If teens have seen a weakening in the demand for their labor, it is not because the industries they usually work for have been performing poorly.

Therefore, we tend to place more weight on the possibility that the trend decline in teen participation has accelerated recently. But, we freely admit we have little evidence to explain the acceleration. In particular, the returns to education, while still high, have not increased especially rapidly in recent years. Perhaps the recognition that schooling pays off is finally reaching the broad teen population. Indeed, school enrollment rates have increased at a one-third faster

rate since 1997 compared with the previous ten-year period. This is largely driven by a rapid increase in enrollments during the summer months—44.3% in 2005 versus 20.5% in 1992. However, increases in the enrollment rate only explain about 0.5 percentage points of the 5.6-percentage-point gap between actual and projected 2005 teen LFP.

### Merit aid and youth employment

Another factor that might have accelerated the decline in the teen LFP over the last decade is a decline in the net price of college. This is somewhat counterintuitive. Clearly, the list prices of highly ranked colleges have shot up. But there are at least two offsetting factors that have potentially lowered the cost of going to college for many students: the decline in community college prices, particularly in the 1990s, and the introduction of large statewide merit scholarship programs in the past decade.

Many states now have large merit scholarship programs (often called Hope, after Georgia's program) that offer students free or highly reduced tuition to in-state universities, regardless of family income, so long as they meet minimum entrance requirements and college performance criteria.<sup>4</sup> For our interests,

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the scholarships have two features that are critical. First, because the sums are sizable, Hope scholarships may have reduced the need for students to earn money for college. Second, the minimum grade standard introduces a financial incentive for students in danger of being on the wrong side of this threshold. Both effects provide disincentives to perform market work.

Using a variety of identification strategies, we find evidence that teen and college-age work participation falls by at least 1 to 2 percentage points in states with merit aid programs. To take one dramatic example, students eligible for Pell Grants in Georgia were not initially eligible for additional funds from Hope. But beginning in 2000, this restriction was eliminated, and, as predicted, work activity declined precipitously for the

Pell-eligible (and now Hope-eligible as well) group, relative to non-Pell students and Pell students in neighboring states. Given that 20% to 25% of youths now live in states offering significant merit aid programs, we estimate that Hope could explain up to 0.5 percentage points of the unexplained 5.6-percentage-point decline in teen LFP during this economic expansion.

### Conclusion

Only time will tell whether the large drop in teen labor force participation of recent years is a temporary product of a labor market that is weaker than the unemployment rate would suggest, or a more permanent drop driven by the increased attractiveness of study, changes in college financial aid, or something else. The available evidence does seem

to suggest, however, that the decline in participation is being accompanied by increases in human capital investments that may add to the future productivity of today's teens.

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<sup>1</sup> For a more detailed review, see Daniel Aaronson, Kyung-Hong Park, and Daniel Sullivan, 2006, "The decline in teen labor force participation," *Economic Perspectives*, Federal Reserve Bank of Chicago, Vol. 30, No. 1, First Quarter, pp. 2–18.

<sup>2</sup> The aggregate LFP rate fell 0.9 percentage points, from 67.1% in 2000 to 66.2% in September 2006. However, excluding 16–19 year olds (or alternatively 16–17 year olds), the decline is only 0.3 percentage points (0.5 percentage points).

<sup>3</sup> David Card, 1990, "The impact of the Mariel boatlift on the Miami labor market," *Industrial and Labor Relations Review*, Vol. 43, No. 2, pp. 245–257.

<sup>4</sup> For our recent paper on the effects of these programs, email daaronson@frbchi.org.