



Costs of Teen Childbearing: Consequences for Parents

Education

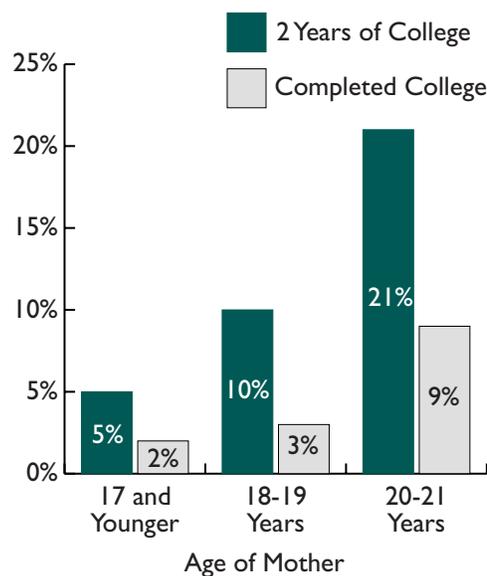
Young Teen Mothers – Age 17 and Younger

Only 40 percent of young teen mothers graduate from high school, compared to about three-quarters of women who delayed their first birth to age 20-21 (Hoffman). Another 23 percent of young teen mothers earn a GED. Even so, when high school completion and a GED are combined, there is still a very large gap (more than 20 percentage points) in completion rates. Moreover, economic research suggests that a GED degree is not equivalent to a high school degree in terms of its labor market value (Cameron and Heckman).

Higher education follows the same pattern. There is a 16 percentage point difference between the proportions of mothers who completed at least two years of college by their late 20s—five percent for teen mothers aged 17 and younger vs. 21 percent for mothers aged 20-21. Less than two percent of young teen mothers completed college by age 30, compared to nine percent for women who had their first birth at age 20 or 21.

As always, it is essential to determine what portion of the gross difference between teen mothers and mothers aged 20-21 is due to being a teen at time of birth rather than to other risk factors. Most studies that control for a large set of other risk fac-

Figure 7: Educational Attainment of Teen Mothers Compared to Mothers Aged 20-21



tors typically find that more than half of the high school graduation gap and about one-third of the high school or GED gap is attributable to the mother's age at birth itself (Hoffman; Hoffman and Scher; Haveman, Wolfe, and Peterson). By these estimates, a delay in a teen birth would increase the proportion with a high school degree by 15 percentage points and the proportion with a traditional degree or a GED by 8.5 percentage points (Hoffman).

In *Kids Having Kids*, researchers Hotz, Sanders, and McElroy used a new and innovative research approach that potentially controls for individual risk factors that cannot be directly measured and that can potentially lead to misleading (biased) estimates of the impact of a mother's age at birth. This new approach used a "natural experiment"—that is, a group of women who became pregnant and had a birth as a teen are compared to a group of women who became pregnant as a teen but had a miscarriage—as a way to approximate the results of a random assignment to having a teen birth (Hotz, Sanders, and McElroy). While there are concerns about sample sizes and other related measurement issues in this particular application, the Hotz et al. approach has substantial value in measuring true causal impacts. Results from this natural experiment approach suggest that the high school graduation rate would increase by seven percentage points with a delay in age at first birth, amounting to an increase of more than 15,000 young women completing high school. However, when GED completion is taken into account, there is no measurable difference between women who have a birth at age 17 or younger and women who delay a birth until age 20-21 in the proportion with either a high school degree or a GED that is due solely to the difference in their age at first birth.

An early birth has a larger net effect on post-secondary education. Even using the natural experiment approach, just under half of the gross differences in attending college and in completing college are due to a teen's age at birth. If these young teen mothers had delayed their first birth to age 20 or 21, the proportion attending college would triple and the proportion completing college

would double. Although the absolute proportions acquiring these educational levels would still be quite low—15 percent and 4 percent respectively—the increasing importance of post-secondary education discussed earlier heightens the importance of these differences.

Older Teen Mothers – Age 18 and 19

Only 63 percent of older teen mothers graduate from high school and another 11 percent earn a GED (Hoffman). Taken together, 74 percent of teen mothers aged 18-19 have either completed high school or a GED, compared to about 85 percent for women who have their first birth at 20 or 21. These differences are not as dramatic as for the younger teen mothers, but given their ages at birth and high school graduation, this is not surprising. The effects on higher education of teens who give birth at a later age are even larger. About ten percent of teen mothers aged 18-19 have completed at least two years of higher education by the time they are age 30 and three percent have attained a college degree, compared to 21 percent and nine percent respectively for women who delay their birth to age 20 or 21.

Traditional studies suggest that after controlling for other measured risk factors, mothers who give birth at age 18-19 reduce their probability of completing high school by 13 percentage points and the probability of graduating from high school or receiving a GED by about five percentage points. These impacts account for about three-fifths of the gross difference in graduation rates between the two groups of mothers. The natural experiment research suggests that the impact of a later teen birth is smaller than this. According to this research, the impact of a birth at age 18 or 19 on high school graduation is seven percentage points, still sizeable but about half the size of the impact in the traditional studies. The proportion holding either a high school degree or a GED would increase by only three to five percentage points if these teen mothers delayed their first birth to age 20 or 21.

For post-secondary education, having a birth at age 18-19 significantly reduces the probability of

attending and/or completing college—a pattern similar to that of the younger teen mothers. These impacts appear even in the natural experiment studies that control for risk factors that cannot be directly measured. For older teen mothers, the proportion with some post-secondary schooling would increase by almost ten percentage points—from ten to 20 percent— if their first births were delayed, holding constant all other risk factors. The proportion completing four-year college degrees would more than double, from three percent to seven percent.

Consistently, a mother’s age at birth is an important causal factor in determining the probability that a young woman attends or completes college. This is true for young teen mothers and older teen mothers and for both of the research approaches noted above.

Earnings

Young Teen Mothers – Age 17 and Younger

Average earnings among women aged 18-35 who first had a child at age 17 or younger are about \$6,900 per year, \$3,350 less than the average of women who delay their first birth to age 20 or 21. Even in their early-to-mid 30s, women who gave birth at an early age earn an average of less than \$11,000 per year. When earnings are compared over the first 15 years of motherhood, the earnings deficit between early teen mothers and mothers who first give birth at age 20 or 21 is even larger – more than \$84,000, or an average of \$5,600 per year. These earnings differences are gross differ-

ences and do not control for other factors that contribute to low earnings ability.

Research that controls for other measurable risk factors has found that approximately one-third of the \$3,350 earnings difference is due to a mother’s age at birth; the other two-thirds due to other risk factors such as having lower academic ability and being raised in a family with low income and/or one that received welfare (Hoffman). Research using the Hotz, et al. natural experiment approach finds instead that teen motherhood does not adversely affect the earnings of the young women who become teen mothers (Hotz et al; Hoffman). That is, this research suggests that these young women would not earn any more if they delayed their first birth.

Because this research approach involves implicit control for otherwise unmeasured individual and family risk factors, it does not and, indeed, cannot identify which specific risk factors are responsible for this surprising result. Taken at face value, this research finding suggests that the net earnings difference attributed to a mother’s age at birth actually reflects the impact of personal and family characteristics that are correlated with having an early birth and that are unmeasured in traditional research, rather than the age at which the mother gives birth. Hotz, et al. speculate that this finding may occur because those who first have a child at age 17 or younger “are less likely to be successful in school and, as such, are less likely to end up in occupations which require higher education...Concentrating their childbearing at early ages may prove more compatible with their likely

Figure 8: Lost Tax Revenue Costs For a Mother with a First Birth as a Teen Compared to a Mother with a First Birth at Age 20-21
All Costs in Billions of 2004 Dollars

OUTCOME MEASURES	1st Birth at Age 17 or Younger	1st Birth at Age 18-19	1st Birth Age 19 and Younger
Income & Sales Taxes (Mothers)	\$0.92	-\$0.65	\$0.27

labor market career options than would postponing motherhood (pp.77-78).” This explanation may well be true, but at this time, there is still no consensus and no specific evidence whatsoever on which personal risk factors account for the surprising finding about the impact of a mother’s age at birth on earnings. We simply do not know why delaying a teen birth does not seem to improve the earnings of these women. Nevertheless, the natural experiment approach and its results have become the research standard at this point and they are used here for that reason.

Through age 35, mothers who first had a child at age 17 or younger actually are estimated to earn about \$6,000 more than if they had delayed their birth to age 20 or 21, according to the research technique discussed above. Measured over the first 15 years after a birth, however, teen mothers earn \$28,000 less than if they had delayed childbearing. (The difference between these two results reflects the older ages at which the earnings are measured as earnings tend to increase with age.) In either comparison, however, teen mothers earn little in absolute terms.

Because mothers who first gave birth as a young teen earn less over the first 15 years of motherhood than if they had delayed their birth, they also end up paying less in taxes. These lower taxes are another public sector cost of a teen birth. Based on the average earnings deficit over the first fifteen years of motherhood, the number of teen mothers, and the average federal and state tax rates, it is estimated that \$925 million dollars of tax revenues were not paid in 2004 because of teen births. Just like additional expenditures, lower tax revenues are a cost associated with teen births.

Older Teen Mothers – Age 18 and 19

Average earnings among women aged 18-35 who first had a child at age 18-19 are about \$6,900

per year, \$3,855 less than the average of women who delay their first birth to age 20 or 21. Over those years, older teen mothers earn almost \$70,000 less than the women who had first births at age 20-21. Even in their early-to-mid 30s, older teen mothers earn an average of less than \$11,000 per year. Their earnings profile is remarkably similar to that of the younger teen mothers.

For these teen mothers, research that controls for other measurable risk factors finds that approximately half of the gross earnings difference is due to a mother’s age at birth, and half is due to other risk factors (Hoffman).¹² Therefore, having a child at age 18 or 19 is responsible for a tax revenue loss of more than \$2.9 billion or more than \$10,500 associated with each teen mother. Applying the new research approach suggests that teen mothers would actually earn a bit more (\$900 annually on average) if they delayed their first birth (Hotz et al; Hoffman). Evaluated over the first 15 years after a birth, older teen mothers earn about \$10,000 more than if they had delayed their first births to age 20 or 21. As a consequence, a delay would actually reduce the taxes they pay by a total of \$650 million.

Public Assistance

Young Teen Mothers – Age 17 and Younger

The main forms of public assistance for adults with children now are:

- Temporary Assistance for Needy Families (TANF)¹³;
- Food Stamps, which provides cash-like assistance that can be used exclusively to purchase food; and
- Housing assistance, either in the form of public housing or a housing subsidy allowance through the Section 8 program.

12 Important risk factors include having low academic ability and being raised in a family with low income and/or one that received welfare income.

13 This analysis only looks at the cash assistance provided through TANF; it does not capture the other benefits and services states also provide through their TANF block grant.

Figure 9: Public Assistance Costs of a First Birth to a Teen Mother Compared to a First Birth at Age 20-21
All Costs in Billions of 2004 Dollars

OUTCOME MEASURES	1st Birth at Age 17 or Younger	1st Birth at Age 18-19	1st Birth Age 19 and Younger
Public Assistance	-\$0.95	-\$2.62	-\$3.56
TANF	-\$0.72	-\$1.26	-\$1.98
Food Stamps	-\$0.45	-\$0.91	-\$1.35
Housing	\$0.22	-\$0.45	-\$0.23

Researchers have examined how a mother’s age at birth affects participation in many of these programs and have found very large gross differences between young teen mothers and older mothers in most of these programs. Through age 35, mothers who first have a child at age 17 or younger collect an average of \$37,000 in cash assistance through welfare, compared to \$17,000 for those who first have a child at age 20-21.¹⁴ Teens who give birth at age 17 and younger also spend a greater length of time receiving assistance—an average of 6.9 years v 3.6 years for the older mothers through age 35. They are more likely to receive benefits from Food Stamps—an average of 5.7 years receiving assistance compared to 3.0 years through age 35. On average, 11 percent of young teen mothers received some housing assistance in a given year, compared to six percent for the older mothers. Based on these differences, teen mothers receive more than \$2 billion in additional cash assistance, \$680 million in additional Food Stamp payments, and \$800 million in additional housing assistance. These are the gross public assistance costs of birth to younger teens.

Just as with earnings, there is a range of net impact estimates, depending on the research approach taken. Estimates based on the traditional approach that controls for measured risk factors suggest that for cash assistance and Food Stamps, being a teen 17 and younger at time of birth is

responsible for about one-fifth of the gross difference—\$3,700 additional cash assistance and six months additional Food Stamp receipt through age 35. The new, natural experiment approach indicates that, except for housing assistance, a teen’s age at birth is not the cause of any of the public assistance differences between young teen mothers and women who have a first birth at age 20-21. When cash assistance is compared by year of motherhood, young teen mothers receive about \$5,100 less in benefits over fifteen years than if they had delayed their first birth to 20-21 (Hoffman). This implies that a delay would actually increase cash assistance by a total of \$720 million annually.

A similar pattern holds for Food Stamps. Instead of being more likely to receive Food Stamp benefits, this research suggests that young teen mothers would receive more Food Stamp benefits if they delayed their birth. Through the first fifteen years of motherhood, a delay would add an average of 1.1 years of receipt, costing taxpayers about \$450 million at current Food Stamp benefit levels. These results reflect a life-cycle pattern of receipt: teens who have a child at an early age typically have higher levels of Food Stamp receipt than those who delay childbearing to age 20-21, but gradually have lower levels as they age. It is not known what accounts for these counter-intuitive findings. It may be that mothers who delay childbearing until age

14 During most of the time period used in the underlying analysis, cash welfare was provided through Aid to Families with Dependent Children (AFDC). Beginning in 1996, TANF replaced AFDC. Rules regarding receipt under TANF are different than under AFDC. Because of that, the estimates here may not apply fully to the current time period.

20-21 are more likely to rely on public assistance perhaps due to less family financial support.

Even after fully controlling for other risk factors, young teen mothers are about ten to 15 percent more likely to receive housing assistance. Over the first fifteen years of motherhood, this is equivalent to an average of about three additional months of assistance. The average family receiving housing assistance receives about \$6,600 a year in benefits, with administrative costs adding another \$646 (CBPP). Given the additional assistance and the per unit cost of providing housing assistance, births to teens 17 and younger add \$220 million in housing costs annually.

Older Teen Mothers – Age 18 and 19

Teen mothers age 18-19 collect more in public assistance than women who delay their first birth to age 20 or 21; an average of \$22,000 in cash assistance by age 35, compared to an average of \$11,700 for older mothers. They also receive assistance for more years—4.5 years compared with 2.7 years for mothers aged 20-21. In addition, they are also more likely to receive benefits from Food Stamps through age 35— an average of 3.9 years receiving assistance compared to 2.3 years. Through age 35, eight percent of older teen mothers received some housing assistance in a typical year, compared to four percent for the older mothers. Based on these differences, older teen mothers received almost \$4 billion in additional benefits—more than \$2 billion in cash assistance, \$850 million in Food Stamp benefits, and \$930 million in additional housing assistance.

These are the gross public assistance costs of births to older teens.

It appears that risk factors besides being a teenager are the primary causes of these higher rates of receipt of public assistance. For all forms of assistance considered here, there is no evidence using either research approach that a mother’s age at birth meaningfully increases the probability that women who first have a child at age 18 or 19 will receive public assistance. For example, research suggests that if these teen mothers delayed their first births, they would receive more cash assistance through age 24, but less thereafter. Being African-American, Hispanic, or the daughter of a mother who received cash assistance herself are the primary predictions for receiving cash assistance, Food Stamp receipt, and housing assistance.

On the basis of the results of the natural experiment approach, a delay in the age at first birth would increase public assistance costs for these mothers over the first fifteen years of motherhood by a total of \$2.6 — \$1.3 billion for cash assistance, \$910 million for Food Stamps, and \$450 million for housing assistance.

Fathers

Partners of Young Teen Mothers – Age 17 and Younger

Much less is known about the fathers of children born to adolescent mothers and about how a mother’s age at first birth affects the earnings prospects of her child’s father. A 1996 study found

Figure 10: Lost Tax Revenue Costs For the Partner of a Mother with a First Birth as a Teen Compared to the Partner of a Mother with a First Birth at Age 20-21

All Costs in Billions of 2004 Dollars

OUTCOME MEASURES	1st Birth at Age 17 or Younger	1st Birth at Age 18-19	1st Birth Age 19 and Younger
Income & Sales Taxes (Fathers)	\$1.71	\$1.45	\$3.16

that over the first 18 years following the birth of their first child, the fathers of children born to mothers age 17 and younger earn, on average, \$27,000 less than the fathers of children born to mothers age 20-21 (Brien and Willis). This amount is the net of the impact of other risk factors associated with being the partner of a young mother, factors that further tend to reduce labor market earnings. Based on the Brien and Willis study, Maynard in *Kids Having Kids* estimated that early births cost the public sector \$1.7 billion in 1996 in the form of the lower taxes paid by these fathers on their lower earnings.

No new study of the impact of early births on fathers is available. It is, however, possible to construct a 2004 estimate by adjusting the 1996 estimate for changes in the price level between 1996 and 2004, the number of teen births, and the probability that a birth will be non-marital. Doing so suggests that teen births reduced the taxes paid by the fathers of the children of young teen mothers by a total of \$1.7 billion annually over the first fifteen years after a birth.

Partners of Older Teen Mothers – Age 18 and 19

The same research used to estimate the earnings impact of being the father of a young teen

IF THE TEEN BIRTH RATE HAD NOT DECLINED BETWEEN 1991 AND 2004, IT IS ESTIMATED THAT THE ANNUAL COSTS OF TEEN CHILDBEARING TO TAXPAYERS WOULD BE \$15.8 BILLION RATHER THAN \$9.1 BILLION. THE DECLINE IN THE TEEN BIRTH RATE BETWEEN 1991 AND 2004 SAVED \$6.7 BILLION IN 2004 ALONE.

mother's child can be used to estimate the impact for partners of older teen mothers. Over the first 18 years following the birth of their first children, the fathers of children born to mothers aged 18-19 earn, on average, \$13,200 less than the fathers of children born to mothers age 20-21 (Brien and Willis). This amount is net of the impact of other risk factors associated with being the partner of a young mother that tend to reduce labor market earnings. Using this estimate and adjusting it for 2004 data indicates that older teen births cost the public sector \$1.4 billion annually over the first fifteen years after a birth in the form of lower taxes paid by the fathers of the children.

BY THE NUMBERS: THE COST SAVINGS OF THE DECLINE IN TEEN BIRTHS

Between 1991 and 2004, the overall teen birth rate in the United States fell by a third. At the same time, the size of the teen population increased by 21 percent as a result of the steady increase in the annual number of births in the United States that began in the early 1970s and lasted through the early 1990s. If teen birth rates had remained at 1991 levels, an additional 199,000 children would have been born to teen mothers in 2004, an increase of 48 percent. Absent the decline in birth rates, teen births would have risen by 95,000 in 2004 alone, rather than falling by 104,000, as they actually did. Put another way, instead of the 415,262 births to teens age 15-19 in 2004, there would have been more than 614,000 births.¹⁵

Between 1991 and 2004, birth rates fell especially sharply for teens aged 15-17—a 43 percent decrease compared to a 26 percent decrease for teens aged 18-19. In addition, the young teen population grew more rapidly than the older teen population—25 percent and 15 percent respectively. This population change makes the large decline in the birth rate for 15-17-year-olds all that much more important. Without the decline in birth rates, births to teens aged 15-17 in 2004 would have been 75 percent higher—235,000 births rather than 134,000. Births to 18-19-year-olds would have been 35 percent higher—380,000 rather than 281,000.

The progress the nation made in reducing teen childbearing between 1991 and 2004 has already had a very substantial effect on public sector costs. This is due in large part to the dramatic decrease in the birth rate to teens aged 15-17 and the particularly large public sector costs of births to this age group (most of which, as noted earlier, attach to the children of these young teen mothers). It is not known exactly how much higher the costs of teen births in 2004 would have been had the teen birth rates not fallen, because it is not known exactly which women would have had births and whether a teen birth would have affected their lives and the lives of their children in exactly the same way that a birth affected the lives of the women who did have a birth in 2004. Still a reasonable assumption can be made. On average, if the costs imposed by those additional births were comparable to the costs of the teen births that actually occurred in 2004, then the annual total costs of all teen births would have been \$15.8 billion, rather than \$9.1 billion. In other words, the decline in the teen birth rates between 1991 and 2004 saved \$6.7 billion in 2004 alone.

15 In addition, births to girls aged 10-14 fell from 11,952 in 1991 to 6,781 in 2004.