Costs of Adolescent Childbearing:
A Review of Evidence from
Chile, Barbados, Guatemala and Mexico

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Introduction

In Latin American and the Caribbean, fertility rates of all women, including those of teenagers, fell significantly in the last decades. Adolescent fertility is a social problem in the region because of three main reasons. First, adolescent rates have declined much more slowly than overall rates. Second, because some countries have experienced no decrease, while other countries, such as Brazil and Colombia, have seen adolescent fertility rate rise. Lastly, adolescent fertility is increasingly taking place outside of marriage, leading to single motherhood and families with absent fathers (UN 1989; Singh, in *Studies in Family Planning*). There is concern that adolescent childbearing, especially unpartnered, results in adverse consequences for mothers and children and contributes to the transfer of poverty from one generation to the next.

The region is plagued by persistent poverty. Does early childbearing perpetuate it? More specifically, what are the social and economic impacts of adolescent childbearing on mothers and children? To explore these questions, this paper reviews the results of four studies carried out in the region in the early nineties that included a comparison group of later childbearers, obtained retrospective life history information for the mothers, and included indicators of child well-being. The studies were done in Barbados (Russell-Brown, Engle and Townsend, 1992); Chile (Buvinic, Valenzuela and Schmitt, in preparation); Guatemala (Engle and Smidt, 1996) and Mexico (Alatorre Rico and Atkin, 1995).[1] The Chile study has recently yielded findings that are presented here in more detail.

Research on consequences of adolescent childbearing is comparatively scarce in developing countries, but there is a large body of evidence in the United States documenting the negative effects of teenage childbearing on mothers and children. However, these findings have been recently challenged on methodological grounds. The two main arguments are, first, that the disadvantages of early parenthood may be only transitory, and that adolescent mothers may overcome them. Second, that the negative outcomes of early childbearing may be a result of variables that are associated with early childbearing, such as women's poverty, and that these mothers may fare poorly even if they delayed childbearing. Gross differences in outcomes between early and later childbearers can be attributed to background factors that are correlated with early motherhood, including family poverty; individual factors (women's abilities and motivations) that are closely related to adolescent motherhood and are harder to isolate and measure; and the event of early childbearing itself. Recent studies in the United States follow sister pairs of adolescent and adult childbearers over time to control for timing, background and individual factors (Geronimus and Korenman 1992; Hoffman, Foster and Furstenberg 1993). A similar design is the use of twin births as a natural experiment to assess the consequences of unplanned unwed motherhood (Bronars and Grogger 1994).

For instance, Geronimus and Korenman (1992) followed sister pairs and found that, by the time women were 28 to 38 years old, there were few differences in most measures of educational and economic well-being between teen mothers and their sisters who had delayed childbearing. Hoffman, Foster and Furstenberg (1993) selected a representative sample of sisters from a longitudinal study of 5,000 families in the United States who had been followed from 1968 to 1987. The investigators compared the results of a standard cross-sectional regression analysis that controlled for the effect of

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[1] The studies were carried out under a joint collaborative Population Council/International Center for Research on Women program in the early nineties.

background variables (not accounting for sister pairs) with results from a fixed effects model that compared outcomes for sister pairs. The standard regression analysis showed that adolescent childbearers were significantly less likely than adult childbearers to have completed secondary school and attended college, as well as more likely to be poor. The fixed effects model, on the other hand, indicated that the difference in years of schooling completed was not statistically significant between sisters who bore their first children as adolescents or as adults, though there was a slight tendency for the adult childbearers to have finished secondary school and attended college. The standard regression model had overstated the negative effects of early childbearing; however, both models showed that adolescent childbearers were significantly more likely than their adult counterparts to be poor.

The four studies reported here explore the consequences of adolescent childbearing for mothers' economic and social opportunities and the well-being of their first born children, and include controls for background variables and the timing of observations. The review describes gross differences that emerged in the studies and explores how much the observed differences were due to background factors associated with adolescent childbearing, including poverty, which is a potentially large confounding variable in developing economies. The presence of sizable poverty and the nature of women's economic participation provide the common ground to assess consequences of adolescent childbearing in countries that otherwise differ considerably in the cultural circumstances surrounding family formation and childbearing.

The studies were able to control for some background variables but were not able to partial out differences due to individual factors and the event of childbearing itself. More rigorous studies that control for different selection factors are needed to support the review's findings and suggested implications for policy.

CHARACTERISTICS OF THE STUDIES

The characteristics of the studies described here are summarized in Table 1. The Barbados study used a sample of 303 women who had given birth at a major government hospital between 1983 and 1984; they were interviewed six to eight years after they had given birth. They were 40 percent of the original cohort of all mothers under 20 that had given birth at that hospital. Women who initiated childbearing under the age of 18 (46 percent of the sample) were compared to those who initiated childbearing in the late teenage period (18 and 19).

The Chile study chose all mothers with a first born child ages 5 to 9 from a representative household survey carried out in 1990 in Santiago and interviewed 505 of them (76 percent of the original sample) in 1991.[2] Mothers who had their first child when they were 19 years or younger—31.2 percent of the sample—were compared to mothers who had their first born child when they were 20 or older.

The Guatemala study examined the consequences of early childbearing in a census (carried out by the Nutrition Institute for Central America and Panama - INCAP) of almost two thousand women aged 20 to 59 from seven villages in rural Spanish-speaking Guatemala. Data included retrospective life histories from 850 women and three rounds of household survey data collected in 1967, 1974, and 1987. Women who had first given birth when they were 19 years or younger were compared with those who had given birth first when they were 20 or older. The rate of adolescent childbearing, 52 percent of the sample, did not change over the 40 years. The rate of initiation of childbearing without

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[2]   Sample attrition was mostly due to families changing residence in the one year interval between the survey and the interview. Thirty mothers were later excluded from the analysis because they lacked valid observations for one or more variables central to the analysis. Weights derived from the 1990 CASEN household survey were applied to the study data to make them representative of the greater Santiago area with a 5 percent sampling error.

Table 1
Characteristics of the Studies

Countries	n	Comparison Groups a = adolescent b = adult	Observations		Unpartnered at birth	Subjects
			Year of first birth	Follow-up years		
Barbados	303	a ≤ 18 (46%) 18 ≤ b ≤ 19	83-84	6-8	71%	mothers first born
Chile	505*	a ≤ 19 (31%) b > 20	81-85	6-10	23%	mothers first born
Guatemala	2000** (850)	a ≤ 19 (52%) b > 20	67-88*** (4 cohorts)	40	first 3 cohorts = 6% last cohort=12%	grandmothers mothers children
Mexico	462	a ≤ 18 (50%) b > 21	87-89	4	24%	grandmothers mothers first born

*representative sample
**census of seven villages/retrospective sample size in parenthesis
***first and last testing

a partner, however, was twice as high (12 percent) in the youngest cohort compared to the others (6 percent).

Lastly, the Mexico study followed a sample of 462 women who had given birth between 1987 and 1989 in a major hospital in Mexico City, four years after their first birth. Two hundred and thirty-one women who had been 18 years or younger when they first gave birth, or half of the sample, were compared with an equal number of women who had given birth for the first time when they were 21 years or older. Twenty-three percent of all mothers in Chile, 71 percent in Barbados, and 24 percent in Mexico initiated childbearing without a male partner present in the household. In both the Chile and Mexico studies this proportion was higher among adolescent childbearers.

The next sections report on the socioeconomic consequences of teenage motherhood for the mothers and their first born children. Table 2 summarizes the main associations found in Barbados, Guatemala and Mexico, and refers the reader to the more detailed tables that describe the findings for Chile. The table does not include data on health consequences for the mothers (they were not reported in the studies). Childbearing has a profound effect on women's life courses. The question is if early childbearing has an additional or independent effect on life prospects of women. Does early childbearing restrict women's social and economic opportunities? These questions are explored by examining the effects, first, on marital status and family formation and, second, on women's employment options, earnings and poverty condition.

Table 2
Associations with Early Childbearing
(Differences Between Early and Late Childbearers)

	Barbados	Chile	Guatemala				Mexico
Single motherhood	ns	ns	ns				
Higher fertility	more births: 1.45 vs. 1.10 t=2.79** [1] shorter interval (years):[1] 4.03 vs. 4.82 t=2.38**	ns	cohort means F n[2] 20-29 3.71 vs. 1.69 48.6** 268 30-39 7.26 vs. 5.39 12.4** 223 40-49 10.55 vs. 6.66 31.9** 230 50-59 11.06 vs. 8.31 8.8* 136				
Grandmother also early childbearer		67% vs. 35% [3]	ns				64% vs. 36% 2.24 (1.44-3.49)[4]
More likely to be poor		see Table 4	housing quality: cohort F n[5] 20-29 3.85* 264 30-39 3.01* 220				housing quality and SES: 1.57 (1.02-2.42)[4]
First born worse schooling performance	ns	ns					cognitive scores: 47.8 vs. 50.5 F=4.25*[6] behavioral problems: 50.1 vs. 43.6 F=6.74** [6]
First born lower height for age		see Table 5					0.14 vs. 0.48[6] F=9.01**

ns: not significant
[1]   covariance analysis, control for mother's education
[2]   two way ANOVA and post hoc comparisons of means (comparison of #16-year-olds with 20+ is shown in table; a 17-19-year-old group was also included in analysis)
[3]   differences not tested
[4]   multiple logistic regression; coefficient with confidence interval in parenthesis
[5]   multiple (GLM) regression (controls for prior and current circumstances)
[6]   covariance analysis adjusted by child's age and mother's SES
* $p < .05$
** $P < .01$

Marriage and Family

It is widely assumed that adolescent childbearing, especially outside of marriage, has a social cost, affects women's marital prospects negatively, and leads to the formation of mother-only families and woman-headed households (see, for instance, Becker, 1981). Adolescent child-bearers in the United States spend nearly five times more of their young adult years as single parents than do later childbearers (Maynard, 1996). The data in the four studies presented here do not support this assumption. They provide little evidence that early childbearing has negative consequences on the marriage options of young women. Adolescents who bore children were not more or less likely than adult mothers to be married in the subsequent years in the Barbados, Chile, and Guatemala studies, despite the fact that in the Barbados and Chile samples much of the adolescent childbearing took place outside of marriage. Eight years after the first birth, only 37 percent of all mothers in the Barbados sample were married or in a consensual union, and another 52 percent were in a visiting relationship. There was no significant difference between early and late teen mothers in their marital status or in the years they remained single. In the Chile sample, more adolescent mothers were single when they first gave birth (49 percent compared to 30 percent for nonadolescent mothers), but five years later there were slightly more adolescent mothers than nonadolescent mothers with partners (80 percent versus 78 percent).

Adolescent childbearing was, however, associated with higher fertility in both the Barbados and Guatemala samples. In Barbados, at the time of follow-up the fertility patterns of mothers eighteen years old and younger differed significantly from those of mothers 18 to 19 years old. Younger teen mothers had more births, which could be a function of the mother's age at first birth since the study did not control for the timing of initial births, but they also had a shorter period of time to the next pregnancy, and this difference remained when controlling for the mother's education. Younger teen mothers had less schooling than older teen mothers. Unfortunately, the study did not have information on whether teenagers dropped out of school before the pregnancy or because of it.

In the Guatemala study, which included older cohorts with completed fertility, adolescent childbearing was associated with two to four more births in the older cohorts. In the oldest cohort, women who began child bearing after age 20 had an average of eight children, those who began between 17 and 19 had 10.6 children, and those who began at 16 and under had an average of 11 children per woman. The effect of adolescent childbearing on the number of births did not appear to have changed over time. The association between early childbearing and higher total fertility is mediated by access to and use of birth control. There is evidence in the Guatemala study that very few women in the different cohorts used birth control, facilitating the observed association between early childbearing and higher completed fertility. In the Chile and Mexico studies there was no association between age of childbearing and fertility. This could be explained by either the shorter period between the first birth and the follow-up interview (four years in Mexico and five in Chile) or greater access to and use of birth control in these countries.

The Chile study disaggregated results to compare adolescent with adult childbearers, and to compare poor with nonpoor mothers. Descriptive statistics of the data are presented in Table 3.

Table 3
Descriptive Statistics of the Santiago, Chile Sample[a][b]
Adult vs. Adolescent and Poor vs. Nonpoor Mothers

Dichotomous Variables	All (%)	Adult (%)	Adolescent (%)	Nonpoor (%)	Poor (%)
Adolescent Mother	31.2	0.0	100.0	27.0	38.8
Poor[c]	35.1	31.1	43.7	0	100.0
Grandmother was Adolescent Mother	45.7	35.9	67.5	41.2	54.2
Child Malnourished	18.4	17.2	21.2	17.3	20.4
Married	70.7	70.3	71.5	68.6	74.6
Married to Father of First Born	68.6	69.3	67.1	67.2	71.3
Lives with Father of First Born	76.9	79.1	72.0	74.4	81.5
"Allegada"	54.2	47.5	68.8	50.2	61.7
Lives in Nuclear Family	55.7	60.5	44.9	55.4	56.4
Mother Heads Household or Subfamily	20.2	20.5	19.4	22.2	16.5
Mother Heads Household	5.6	6.2	4.4	4.2	8.3
Mother Heads Subfamily	14.5	14.3	15.1	18.0	8.2
Husband Heads Household	69.3	72.2	62.9	67.8	72.3
Grandparents Head Household	12.9	10.2	18.9	15.0	8.9
Mother Jointly Heads Household	18.9	22.7	10.3	21.7	13.6
Mother Provides Financial Support	40.0	45.3	28.1	46.0	28.9
Father Provides Financial Support	79.5	82.8	72.0	80.6	77.4
Grandparents Provide Financial Support	32.6	28.6	41.2	33.0	31.8
Worked in the 5th Year	33.8	37.3	26.1	40.4	21.7
Mother Contributes Income	46.2	47.6	43.1	52.5	34.5
8-9 Years Schooling	24.1	20.2	32.8	18.4	34.7
10-11 Years Schooling	32.5	30.2	37.5	35.5	27.0
12+ Years Schooling	33.8	40.3	19.7	39.5	23.4
Continuous Variables	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
Months Worked 5th Year	3.7	4.0	2.9	4.500	2.400
Months Worked 1st to 5th Year	20.0	22.2	15.3	24.100	14.700
Days Worked per Week, 1990	1.8	2.0	1.355	88.700	23.400
Hours Worked per Month, 1990	66.3	74.0	49.2	2.400	0.700
Ln Monthly Earnings	10.479	10.612	10.052	10.622	9.422
Ln Monthly Earnings, 0-9 Years Educat.	10.291	10.450	10.060	10.449	9.722
Ln Hourly Earnings	5.358	5.486	4.947	5.480	4.456
Ln Hourly Earnings, 0-9 Years Educat.	5.195	5.396	5.045	5.427	4.627
Ln Household Income	11.533	11.660	11.254	12.037	10.601
Number of Other Children in 5th Year	0.5	0.5	0.5	0.5	0.5
Mother's Height (cm)	157.0	156.9	157.2	157.8	155.6
Child's Height-for-Age (SD units[d])	0.001	0.020	-0.040	0.089	-0.1611

Source: Buvinic, Valenzuela and Schmitt, in preparation.

a. Weights derived from the 1990 Chilean census make the percentages and means representative of Greater Santiago.
b. Full sample has 505 observations.
c. Poor mothers are from households where per capita household income is below the 30th percentile for Chile.
d. The units for child's weight-for-age are the number of standard deviation units from the median of the NCHS reference data for height. All three weight-for-age means are very near zero, indicating that the heights of the children are near the 50th percentile.

Multivariate results from the Chile study are presented in Table 4. All variables listed in the first column of Table 4 are dependent/outcomes variables, i.e. potential consequences of adolescent childbearing. Each row represents three separate regression analyses (one for all mothers, one for nonpoor mothers, and one for poor mothers—using either logit or OLS depending whether the dependent variable is dichotomous or continuous). For each regression, the main question is about the influence of being an adolescent childbearer compared to an adult one; thus, all coefficients listed in the table are adjusted odd ratios or coefficients of the effect of bearing a first child as an adolescent on the outcome variables. All equations control for whether the grandmother was an adolescent mother herself, the number of other children in the household at the time of the follow-up survey; and three dummy variables for the mother's education (whether they had 8-9 years of education or less, whether they had 10-11 years of education, and whether they had 12 or more years of education).

The study found that teen motherhood more than doubles a woman's chances of living as a boarder or "*allegada*" (with her child in a house not her own's or her parents'), and reduces by about half the likelihood that she lives with the father of the child or in a nuclear family during the fifth year after the birth of the first child. The chances that the households where adolescent childbearers lived were headed by husbands were about half that of adult childbearers. Furthermore, the child's biological father was less likely to provide financial support (always or sometimes) to the child of an adolescent childbear er compared to an adult childbearer. On the other hand, grandparents were almost three times more likely to head households and two times more likely to provide financial support in the case of adolescent mothers, whether poor or nonpoor. Similarly, the Barbados study found that the younger mothers were more distant from the child's father.

So, while adolescent motherhood does not seem to carry a social stigma that would affect women's likelihood to find partners and marry, it does seem to be associated with changes in family size (larger families), and family arrangements—more adolescent mothers as boarders; fewer biological fathers as heads and as having financial responsibility for and attachment to the child; and more grandparents taking over responsibility for children. Lastly, an intriguing finding in both the Mexico and the Chile studies is that adolescent childbearers were themselves born to adolescent mothers. Two thirds of the adolescent mothers in Mexico had mothers who also gave birth in their teens, suggesting that adolescent motherhood can be learned and transmitted within families.

The Mexico study included a number of variables to control for the effect of mothers conveying their adolescent childbearing preferences to their daughters, including mother's marital status, mother's support, mother's schooling expectations for her daughter and couple stability. Yet, it still found that teen mothers beget teen mothers: daughters of teen mothers were twice as likely as daughters of adult mothers to repeat the early childbearing pattern themselves. Sixty-seven percent of the adolescent mothers in the Chile study were themselves daughters of teen mothers, compared to only 35 percent for nonadolescent mothers. While it is possible that other variables, including poverty, may be explaining the repetition of early childbearing across generations in these studies, recent evidence in the United States that controls for selection effects also shows that teen mothers are more likely than adult mothers to pass on their teen motherhood and poor life prospects to their daughters almost as a birthright (Maynard, 1996).

Table 4
Influence of Adolescent Motherhood on Numerous Outcomes:
Marital Status, Headship, Mother's Work Status, and Mother's Earnings
(Weighted Logit and Weighted Ordinary Least Squares Equations) [a]

Dependent Variables	All Mothers	Nonpoor Mothers	Poor Mothers[b]
a. Re: Mother's Marital Status, in the 5th Year, separate logit analyses were conducted for the following dependent variables: [c,d]			
Married	0.98	0.92	0.99
Married to Father of First Born	0.87	0.90	0.75
Lives with Father of First Born	0.62*	0.68	0.45#
"Allegada"	2.22**	2.12**	2.31*
Lives in Nuclear Family	0.51**	0.45**	0.59
b. Re: Headship in the 5th Year, separate analyses were conducted for the following dependent variables: [c,d]			
Mother Heads Household or Subfamily	0.89	1.00	0.76
Mother Heads Household	0.56	0.11	0.98
Mother Heads Subfamily	1.09	1.38	0.54
Husband Heads Household	0.59*	0.75	0.39*
Grandparents Head Household	2.78**	2.90**	2.77#
Mother Jointly Heads Household	0.40**	0.26**	0.86
Mother Provides Financial Support	0.54**	0.38**	1.04
Father Provides Financial Support	0.53*	0.69	0.38*
Grandparents Provides Financial Support	1.95**	1.99*	1.96#
c. Re: Mother's Work Status, separate logit and OLS analyses were conducted for the following dependent variables:[c,d]			
Worked 5th Year	0.66#	0.47*	1.55
Months Worked 5th Year	-0.8	-1.69*	0.81
Months Worked 1st to 5th Year	-4.9#	-10.33**	4.58
Hours Worked per Month, 1990	-22.2*	-26.86#	-4.15
Days Worked per Week, 1990	-0.56*	-0.816*	0.09
d. Re: Mother's Earnings, 1990, separate OLS analyses were conducted for the following dependent variables:[c,d]			
Ln Monthly Earnings, all women	-0.41*	-0.17	-0.65*
Ln Monthly Earnings, 0-9 Years Educat.	-0.16	0.09	-0.56#
Ln Hourly Earnings	-0.40*	-0.32	-0.26
Ln Hourly Earnings, 0-9 Years Educat.	-0.12	-0.14	-0.35

Source: Buvinic, Valenzuela and Schmitt, in preparation.

a.   Continuous dependent variables estimated using weighted OLS; binary dependent variables estimated using weighted logit.
b.   Poor mothers are from households where per capita household income is below the 30th percentile for Chile.
c.   All equations control for whether grandmother was an adolescent mother; for the number of other children in the household; and for three dummy variables for mother's education (8 or 9 years of education; 10 or 11 years of education; and 12 or more years of education), except for the earnings equations for those with 0 to 9 years of education.
d.   All equations weighted by a factor that makes the sample representative for Greater Santiago.
\#   At the 10% levels.
*   Statistical significance at the 5% level.

Mother's Economic Standing

In Latin America and the Caribbean poverty is largely entrenched. Is adolescent motherhood (and its closely linked factors) a significant factor explaining the perpetuation of family poverty? The four studies show evidence that adolescent motherhood is associated with adverse socioeconomic conditions and poor earning opportunities for the teen mother. After controlling for mother's schooling and her wealth as a child, both the Guatemala and the Mexico studies found that adolescent childbearing was positively associated with poverty indicators (measured by an index of housing quality in Guatemala and an index of housing quality and socioeconomic standing in Mexico).

In the Mexico sample, 26 percent of the adolescent mothers lived in poverty conditions versus only 4.3 percent of the adult mothers. Four years after having their first child, Mexican adolescent childbearers who lived in consensual unions or alone were at higher risk of being poor than those who were married. Mothers who had their first child with a biological father who was 17 years or younger were twice as likely to be poor than mothers who had their first child with older biological fathers.

The Barbados study found that the younger teen mothers earned significantly less than the older teen mothers (US$557 and US$707 respectively). This study, however, did not control for differences in schooling that could explain the differences in earnings between younger and older teen mothers. The Chile study has more detailed evidence on the impact of adolescent childbearing on mothers' economic opportunities since both women's work status and women's earnings in 1990 were obtained for poor and nonpoor mothers, and the analysis was controlled for mother's schooling.

The regressions in Table 4, panel (c), analyze mothers' work patterns. Adolescent motherhood appears to affect work patterns for poor and non-poor women differently. Nonpoor adolescent childbearers are less likely to work in the child's fifth year (odds ratio 0.468) than nonpoor adult childbearers. They also worked substantially fewer months per year (-1.7); fewer months in the first five years after becoming adolescent mothers (-10.3); fewer hours per month (-26.9); and fewer days per week(-0.8), than nonpoor adult mothers. Consistent with this, nonpoor adolescent child-bearers were less likely to provide financial support and jointly head households than non-poor adult childbearers (Table 4, panel b). Poor adolescent childbearers, however, differed little from poor adult childbearers with respect to hours, days, and months worked, and their likelihood of providing financial support to their child. They seemed to be about 50 percent more likely to work in the fifth year (odds ratio 1.55) than poor adult mothers, though this effect was not statistically significant.

The last panel (d) in Table 4 examines adolescent childbearing as a determinant of mothers' hourly and monthly earnings. There is no significant effect of adolescent motherhood for all nonpoor mothers. For poor women, however, adolescent motherhood is associated with lower earnings, even after controlling for the mothers' educational level. The monthly earnings of adolescent mothers are about 90 percent (0.647 log points) lower than those of adult mothers. The hourly earnings of adolescent mothers are about 29 percent (0.256 log points) lower than those of adult mothers, but this effect was not statistically significant.

The earnings estimates, however, are arguably biased toward finding lower wages for adolescent

mothers. Mothers enter the sample if they gave birth in the same five-year period during the 1980s. By construction, then, the adult mothers are, on average, older than the adolescent mothers. Since older (more experienced) workers tend to earn more than younger (less experienced) workers, this could lead to the conclusion that adolescent motherhood was depressing wages simply because adolescent mothers in the sample are younger (less experienced) than adult mothers. The study attempted to test for the presence of bias by examining a subsample of mothers with only 0-9 years of education, on the assumption that workers with lower levels of formal education are likely to work in jobs with a relatively low return to accumulated work experience. Even among this subsample, however, adolescent childbearing was associated with lower earnings among poor women. The monthly earnings of adolescent mothers are 0.562 log points lower than those of adult mothers (significant at the 10 percent level).

The Chile study suggests that early childbearing and closely associated factors can have significant economic costs, in terms of lower monthly earnings, especially for poor mothers who need those earnings most. Early childbearing seems to entrench the poverty trajectory of poor women.

Children's Well-being

Do the adverse family and economic outcomes associated with adolescent childbearing spill over to children, contributing to the perpetuation of disadvantage from one generation to the next? We have seen that adolescent childbearing is associated with lower education, higher fertility and lower earnings for the adolescent mother. This section reviews how much these disadvantages and the disadvantage of being an adolescent mother itself are related to the well-being of the first born child, measured by the child's school performance and nutritional status.

Adolescent motherhood often brings with it absent fathers. Only 30 percent of the fathers in the Barbados study resided with their child. However, slightly more than half of the fathers (56 percent) had a close relationship with the child or helped with child care. The Barbados study found that the best predictor of child schooling performance—measured by the mothers' own ratings of that performance—was that the father had a close relationship with the child and that he always contributed economic support. Also related to the child's good performance was the mothers' indication that they themselves sought additional schooling after childbearing, and both these variables were independently related to the child's schooling outcomes. The Mexico study found that adolescent mothers tend to take their child less often than adult mothers to preschool or child care facilities. In addition, these early childbearers express lower schooling expectations for their children than the later childbearers.

The Mexico study used arm circumference and height for age as indicators of child nutritional status. Controlling for child's age and the mother's socioeconomic level, this study found that the nutritional status of the children of earlier childbearers was significantly worse than that of

later childbearers. These disadvantages were also found in the child's psychosocial development, and children of adolescent childbearers had lower scores on a language development test and more reported behavioral problems.

The Chile study investigated the determinants of child malnutrition using the child's height-for-age (in 1991) as the dependent variable. The study investigated low height-for-age (stunting) as a function of whether or not the child's mother was an adolescent at the time of birth, the natural log of the child's household's per capita income, whether or not the mother contributed income to the household, whether or not the mother worked outside the household, the mother's educational level, the number of other children in the household and, as a genetic control, the mother's height.

Table 5, as before, displays results for the sample as a whole and for nonpoor and poor women separately. Each column gives the results of a single regression analysis. The dependent variable for the logistic regressions reported in the first three columns takes the value one if the child was stunted, (that is <-1 standard deviations below the median height-for-age of the NCHS reference data), zero otherwise. The reported coefficients are odds ratios. For the dichotomous independent variables, the odds ratio gives the relative likelihood of observing a stunted child if the independent variable takes the value one compared to when that same variable takes the value zero. Odds ratios above one indicate that the independent variable is associated with a greater likelihood of observing low height-for-age; odds ratios below one indicate a lower likelihood of observing stunting in children. The next three columns of Table 5 report results from ordinary least squares regressions for the child's normalized height-for-age. The results of the dichotomous variable mirror those of this

Table 5
Determinants of Child Malnutrition (Height-for-Age)[a]
(1991)

	Stunted or Not (Dichotomous)[b]			Height-for-Age (Continuous)[c]		
	All	**Nonpoor**	**Poor[d]**	**All**	**Nonpoor**	**Poor[d]**
Adolescent Mother	1.21	0.70	2.17#	-0.03	0.17	-0.31#
Ln Household Income	0.82	0.73	0.49#	0.03	0.02	0.10
Mother Contributes Income	1.00	4.15**	0.37#	0.09	-0.66**	0.52**
Mother Works for Pay	0.63	0.17**	1.18	0.31#	1.05**	-0.12
8-9 Years Schooling	0.51	0.72	0.62	0.44*	0.31	0.44
10-11 Years Schooling	0.63	1.56	0.33	0.34#	0.41	0.58*
12+ Years Schooling	0.79	1.66	0.73	0.27	0.02	0.37
Number of Other Children	1.26	1.79*	0.71	-0.10	-0.08	-0.09
Mother's Height (cm)	0.95*	0.95#	0.96	0.05**	0.04**	0.05**
N	475	304	171	475	304	171
Pseudo R^2 (logit) or R^2 (OLS)	00.04	00.10	00.12	00.11	00.13	00.16
Chi-squared (logit) or F-Statistic (OLS)	19.70	28.77	20.28	06.31	04.93	0.348

Source: Buvinic, Valenzuela and Schmitt, in preparation.

a.   All equations are weighted by a factor that makes the sample representative of Greater Santiago.
b.   In columns 1 to 3, the dependent variable equals one if the child is stunted ($\leq$ 1SD below the median of the NCHS reference date); zero otherwise.
c.   In columns 4 to 6, the dependent variable is the standardized deviation (from -3 to 3) of the child's height-for-age compared to the median of the NCHS reference data.
d.   Poor mothers are from households where per capita household income is below the 30th percentile for Chile.
*   Indicates statistical significance at the 5% level.
**   Indicates statistical significance at the 1% level.
#   Indicates statistical significance at the 10% level.

preferred continuous measure, and so only the latter is described below.

Adolescent childbearing does not seem to influence a child's height-for-age in the whole or nonpoor samples, but has negative influence among the children of poor women. Controlling for household per capita income, the mother's education, her working for pay and contributing income, the number of other children in the household in the fifth year, and the mother's height, poor adolescent mothers have children that are, on average, 0.306 standard deviations smaller than children of poor adult mothers ($p<0.10$). The children are, however, 0.58 standard deviations taller when the mother has 10-11 years of schooling versus fewer years of schooling ($p<0.05$). Interestingly, poor mothers who contribute to household income appear to have better nourished children. First born children of poor mothers who provide income to their households are, on average, 0.516 standard deviations taller than the first born children of

women who do not contribute (p<0. 001). This finding replicates that of other recent studies (see, for instance, Buvinic et al., 1992; Engle, 1993), and challenges the common assumption that mothers' income earning activities are negatively associated with child well-being. We do not know, however, if it is the additional income women provide in poor households; or the control women exert over household budgets when they contribute income; or perhaps the greater competence of mothers who provide income (at childrearing as well as income earning) that explains the positive effect of mother's contribution on child nutritional status. (The negative influence of mother's contribution on child's height-for-age among the nonpoor in the Chile study is not easily explainable.)

Discussion

Summarizing the results of the Chile study, which expand on the findings of the Barbados, Guatemala and Mexico investigations, early childbearing is associated with economic rather than social effects, and with effects occurring for poor rather than for all mothers. Out of wedlock or unpartnered adolescent childbearing does not seem to perpetuate single parenthood—there were no apparent negative consequences on the marriage options of young women. But early childbearing is associated with changes in family size (larger families) and family arrangements (fewer traditional nuclear families), and with the transmission of childbearing preferences across generations—teen mothers beget teen mothers. More importantly, early childbearing seems to entrench the poverty of low income women. Having attained a certain level of schooling and providing income to the family are two positive events that help women to stem what otherwise seems a vicious cycle of poverty for themselves and their children that begins with early childbearing among the poor.

Poor adolescent mothers seem to work more and earn less than other mothers. Children's fates seem to be tied to mothers' fates, especially among the poor. It is only among the poor that adolescent childbearing is related to reductions in mothers' monthly wages. It is only among the poor that the timing of childbearing is related to negative effects in terms of child nutritional status. Lastly, it is also only among the poor that mother's contribution to household income is associated with improvements in child well-being, although the reasons for this are not clear. Possible explanations for this positive effect include the greater marginal impact of additional income mothers provide in poor households, the greater control mothers exert over household budgets when they contribute income (which is then channeled to children), or the greater competence of some mothers to both earn income and raise children. Whatever the reasons, this finding counters the common assumption in the literature of the negative effects of the mother's work outside the house on child well-being. It suggests instead that there can be beneficial effects for mothers and children of promoting income earning opportunities for young women in poverty.

The findings of the Chile study, in particular, suggest that social policy that significantly expands the schooling and income earning opportunities of low-income young women and provide these women with access to quality reproductive health education and services, with a view to delaying childbearing, could contribute to breaking the cycle of poverty that seems to be present in the case of poor teen mothers and their first born children. To draw more conclusive policy implications, however, the findings of these studies need to be replicated using longitudinal designs that more rigorously control for selection effects statistically or using quasi-experimental designs.

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