

Economic Consequences of Placing a Child for Adoption Among Unmarried Teenage Mothers

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Abstract:

Past research suggests that less than 1 percent of children born to unmarried teenage mothers are placed for adoption. This low rate of adoption placement is surprising given the large possible economic consequences of teenage childbearing. We document the economic consequences on the four groups of people most directly affected by the decision to place the child for adoption: the mother, the child, the future children of the mother, and the grandparents of the child. We find that, on average, the combined lifetime economic benefit to these four groups from the decision to place a child for adoption is well over a million dollars. While the decision to place a child for adoption involves consideration of multiple social, family, and child factors, the results in this paper suggest that policies that produce even a small increase in the fraction of unmarried teenage mothers placing their child for adoption could produce very large social returns.

Each year, over 200,000 children are born to teenage mothers (Martin *et al.*, 2017), 81% of which are unmarried (Child Trends, 2018). These teenage mothers and their children are much less likely to ever attend college and are more likely to experience poverty throughout their life (Ashcraft *et al.*, 2013; Fletcher and Wolfe, 2009; Hoffman, 2006; Hofferth *et al.*, 2001). Yet, despite the unfavorable family conditions that many unmarried mothers face, less than 1 percent place their child for adoption (Chandra *et al.*, 1999). At the same time, there is a very large demand for birth adoptions, with families willing to pay an average of \$40,000 in order to adopt an infant (Chandra *et al.*, 1999; Bachrach, 1986; Adoptive Families, 2018).

Given the potential economic consequences to both the mother and child involved in teenage parenting, the decision to place a child for adoption potentially represents a very economically meaningful decision on the part of the teenage parent. This decision could also affect the outcomes of the mother's future children, as well as the mother's parents. The need for child care might necessitate grandparents to adjust their labor supply in order to help care for their grandchild. In this study, we aggregate the economic effects across the four groups of people most directly affected by the decision to place the child for adoption: the mother, the child, the future children of the mother, and the grandparents.

First, to estimate the economic consequences for the mother we draw on existing research about teenage childbearing. We focus particularly on studies that compare pregnant teenagers who had miscarriages with pregnant teens who did not and subsequently gave birth. A number of recent and innovative studies exploit this source in variations of whether the girl ends up raising a child. While not a perfectly analogous situation, we argue that placing a child for adoption at birth shares many similar features as the mother who experiences a miscarriage, including the emotional turmoil from the loss of a child and the consequent changes in educational and

economic opportunities from not having to immediately care for a young child. Since most of the documented long run economic consequences of teenage childbearing occur after a child is born, placing a child up for adoption and having a miscarriage should have similar effects on the long-run outcomes of the young woman.

Second, we estimate the economic consequences for the child using data from the American Community Survey (ACS) to compare the economic environment experienced by children who end up with adopted parents to those that stay with their unmarried birth mother. We find that adopted children age 5 and under experience a household that has 3.5 times higher household income, are 2 times more likely to have a mother that has a college degree, 3.4 times less likely to be receiving SNAP benefits, and 1.6 times less likely to be on Medicaid. We then combine this information with recent estimates of the impact of childhood economic circumstances on adult economic outcomes to quantify the long-run increase in economic outcomes for the child placed for adoption.

Third, we estimate the impact on the future children of the mother by combining our estimates of the effect on the mother with information on how those effects influence long-run outcomes for the child. While the specific estimates differ across studies about the consequences of teenage childbearing, estimates from these studies suggest that if a teenage girl places her child for adoption she will be more likely to graduate from high school and to be married as an adult (Hotz *et al.*, 2005; Fletcher and Wolfe, 2009). Thus, her future children will be born into circumstances with better economic opportunities.

Fourth, we estimate the impact on the grandparents of the child that is placed for adoption by examining the labor market outcomes of parents whose teenage daughter has a child. We compare grandparents whose daughter is still raising their child to grandparents whose daughter

is not raising their child during the year following birth. We use data from the ACS and find that the parents of teen mothers who have their grandchild living in their home experience an annual household income that is about \$19,000 lower and are 4 percentage points less likely to be employed than those parents whose grandchild is not living in their home.

Combined across these four groups, the estimates in this paper suggest that pregnant teenage girls face a decision that will collectively change the earnings of the four groups by over a million dollars. This likely understates the financial impact on society from the decision to place a child for adoption because, in addition, this decision will also have a dramatic effect on the degree to which the government will need to financially support each of the individuals involved, particularly the mother, her child, and all of her future children. While each of the individual estimates in this paper are likely to have their limitations, the contribution of this paper is to provide a general framework to quantify the economic impact of placing a child for adoption.

I. Background

There is a long history of research on the economic consequence of teenage childbearing. One of the empirical strategies used in this literature has been to use a sample of women who get pregnant and compare mothers who have a miscarriage to mothers who end up having the baby (Hotz *et al.*, 2005; Ashcraft and Lang, 2013; Fletcher and Wolfe, 2009). Estimates from this particular empirical approach provide particular insights about the decision to place a child for adoption, since both situations represent a case in which one group ends up parenting the child and the other does not. A randomly assigned treatment that influenced an unmarried teenage mother's decision to place their child for adoption could be evaluated using a very similar

empirical approach as that used in the miscarriage literature. Since there have been no large-scale randomized experiments to influence adoption placement decisions, the estimates from studies using miscarriages provide a reasonable approximation.

The consequences of teenage childbearing for the mother directly influence the economic outcomes for the child and all of the mother's future children. Women who have a birth as a teenager complete fewer years of education, have lower earnings, are more likely to be below the poverty line, and are less likely to be married. Children raised by mothers who have lower education, lower income, and are unmarried, experience lower income over their lifetime than children with mothers who are more educated, have higher income, and are more likely to be married (Lopoo and DeLeire, 2014; Lerman *et al.*, 2017). The estimates from these previous studies provide a way to quantify how changes in the economic circumstances during childhood are correlated with the lifetime earnings of a mother's children.

A group commonly forgotten in studies of teenage childbearing are the parents of teen mothers. Overall, 45 percent of single mothers live in a three-generation household when their child is born (Pilkauskas, 2012). This rate is likely to be much higher for teens. This arrangement provides the teen the best chance of graduating high school and avoiding poverty, but can simultaneously burden the parents. There have been varied opinions on how this burden affects parents. A number of studies have found significant benefits from grandchild care, such as a healthier and more active lifestyle (Waldrop and Weber, 2001; Hughes *et al.*, 2007) or having fulfilling and rewarding experiences being with grandchildren (Pruchno and McKenney, 2002). Other studies have reported higher self-reported health and lower depression symptoms (Ku *et al.*, 2013). Many of these benefits were found to be conditional on the level of care. Chen and Liu (2012) found that grandparents in three-generation households who are heavily involved in

care experience accelerated health declines, but lighter levels of care reinforced physical activity. It also has a protective effect on the grandparents' health.

The research that is available on the economic outcomes of grandparent caregivers suggests that the costs can be high. Caputo (2001) suggests that relatively young grandparents (age 40 and younger) in three-generation households experience both short-term and long-term financial hardships, including lower labor force participation. Sands and Goldberg (1998) find that employment for primary caregiving grandparents dropped 29 percentage points after becoming primary caregivers. We expect that this should look similar to that of parents to teen mothers. Another important consideration is that grandparent care can often be the last alternative to foster care, so the economic value of grandparent care is equal to the cost that would have been incurred had those grandchildren been put into foster care (Bass and Caro, 1996; Baker *et al.*, 2008). Baker *et al.* estimate this value to have been between \$23.5 and \$39.3 billion in 2008 dollars. While the economy as a whole is benefited by this cost saving, the grandparents who provided tens of billions of dollars of care are not compensated at that level. In fact, approximately 85 percent of grandparent caregivers receive no public assistance at all (Dellman-Jenkins *et al.*, 2002).

While not part of our economic analysis, another group affected by the mother's decision to place a child for adoption is the family that gets to adopt the child. A potential proxy for the economic value of being able to adopt a child is the amount that families are willing to pay to be able to adopt a child. Currently, parents who wish to adopt children from the United States typically incur costs of over \$40,000. These costs vary by baby's country of birth and whether parents used an agency or attorney to adopt. Domestic adoptions from the US average about \$37,829-\$43,239. Using an attorney is the least expensive option. Adoptions from foster homes

are drastically cheaper, amounting to an average of about \$2,938. Foreign adoption costs have a much larger cost range. Average costs from the top three sending countries ranged from \$35,000-\$48,329 (Adoptive Families, 2018).

II. Data

The analysis in this paper draws on data from the American Community Survey (ACS). Beginning in 2008, the ACS reports more detailed information on a child's relationship with the head of the household; specifically, we can observe whether a child was biological or adopted. This allows us to use the 2008-2015 waves of the ACS to examine characteristics of families who adopted children. These waves provide a sample of 4,743,508 children, of which 120,941 (2.5%) are adopted.

When examining the living circumstances of adopted children in our analysis, we limit the sample to children 5 years old or younger who were either adopted or living with a single mother. This leaves us with 20,543 children across 17,479 adoptive families and 191,131 children across 147,695 single mother families. We require that adopted children be born in the United States and that the single mother be the head of the household. We also restrict the sample to children under 1 year old to measure if effects differ by the child age. We make this restriction because the ACS does not record the age when children were adopted, so we look at children who were more likely to be adopted at birth (1 or younger) separate from children who were potentially adopted later in childhood (1-5 year-olds) This limits our sample size to 2,118 adopted children across 2,056 adoptive families and 22,702 children across 22,247 single mother homes.

Our ACS sample also provides information on whether a woman gave birth to a child in the last year. We use this to examine the outcomes of grandparents who have grandchildren at risk of adoption. To identify these families, we limit the sample to parents who had a 15-17-year-old daughter living in their house who gave birth to a child in the last year. We then identify if the grandchild is still living in the household and compare them to households where the grandchild is not present. This leaves us with a sample of 5,323 families, 2,812 of which do not have the grandchild present.

For our regression analysis, we supplement the ACS sample data with state level indicators for family well-being provided by the Family Prosperity Index (Moody and Warcholik, 2017). The Family Prosperity Index ranks states based on the strength and prosperity of families, including data from pure survey data (e.g., American Community Survey published by Census Bureau) to pure administrative data (e.g., income data published by Internal Revenue Service) to hybrid survey/administrative data (e.g. data from Bureau of Economic Analysis). We include measures from this index for family self-sufficiency, family culture, and family health as controls. Family self-sufficiency is an aggregate variable that takes into account Medicaid, welfare assistance, prison population, charitable donations, and other similar indicators. The family culture variable is a measure of how helpful or harmful the family environment is in raising socially responsible children, and includes indicators such as crime, education, and church attendance. Family health measures both physical and mental health of families through indicators such as infant survival, self-mortality, sexually transmitted diseases, and years of potential life lost.

III. Results

In this section, we examine the economic impact on each of the aforementioned four groups, namely the mother, the child, the future children of the mother, and parents of the mother. We use a different empirical strategy to estimate the economic consequences for each group and so this section is split by each group that is affected. For each group, we describe the empirical strategy used, followed by the results that we observe.

The mother

One challenge with estimating the impact of placing a child for adoption on the mother is that there isn't any large nationally representative data that provides information about whether a mother places her child for adoption. In addition, the individuals who decide to place a child for adoption are likely to differ in unobservable ways from those who keep the child, making a proper comparison challenging. Many of the same issues exist when studying the economic consequences of teen births, but there has been much more research on that question. In this section, we summarize estimates from those previous studies and focus specifically on the subset of results that exploits the occurrence of a miscarriage to provide a comparison group for the teenage girls that have a live birth.

Miscarriages provide an important empirical strategy since they provide a quasi-random event that influences whether a pregnant teenager ends up having a child born. One challenge is that while a miscarriage is quasi-random, the decision to have an abortion is not. Ashcraft et al. (2013) use data from the National Survey of Family Growth (NSFG) and find that of first pregnancies to teenage girls, 10 percent of the pregnancies end in a miscarriage and 25 percent end in an abortion. They find that even though a miscarriage is close to biologically random,

there are social and economic factors that are correlated with whether a miscarriage occurs because of the way these factors influence abortion decisions. This raises an interesting issue for the comparisons in this study since the teenage girls who place a child for adoption might be those that are the least likely to get an abortion.

In Table 1, we provide the estimates from four recent studies that all exploit variation in teenage childbearing that comes from the occurrence of miscarriage. These studies were chosen based on a systematic search of the literature for research on the economic consequences of teenage childbearing that used the occurrence of a miscarriage as their identification strategy. The outcomes that we examine are whether the mother receives a high school diploma, how many years of schooling she achieves, whether she is married by a particular age, her personal annual earnings, and her family income (which includes her own earnings and those of her spouse and partner if she is married or cohabiting). Other outcomes examined in these studies that were not included in our table include obtaining a GED, hours worked, and participation in different welfare programs either because effects were statistically insignificant across all papers, or the outcome was specific to just one of the papers. Ashcraft et al. (2013) provide the most comprehensive set of outcomes in their study and Hotz et al. (2005) take a lifespan approach to some of the outcomes by comparing the estimated effects at each age between 19 and 35.

The results in Table 1 provide estimates that indicate a much smaller impact of teenage childbearing than estimates from previous studies based on regression estimates, sibling fixed effects, or matching strategies. In fact, the estimates in Table 1 are likely to strike most readers as rather surprising since the effects are often rather small, counter-intuitive, and provide conflicting estimates across studies. In particular, the effect on the mother's own earnings is quite striking and differs between large negative and large positive estimates. This is not

unexpected since the theoretical effect on earnings is ambiguous. It's possible that earnings could increase or decrease depending on whether families are more in need of child care or income.

We also want to emphasize that an increase in earnings does not reflect that mothers who do not place their children for adoption are better off. Since keeping the child increases family size, income per family member might actually be decreasing despite the positive estimate on earnings.

The child

In Table 2 we provide a comparison between the household characteristics experienced by children who are adopted compared to children who are raised by single mothers. For the children who are adopted, we focus on children who were born in the United States. For our control group, we want a proxy for the homes where children who are placed for adoption are likely to come from. We use single mothers with young children since this is likely to be the group from which most children placed for adoption come from. We provide two separate comparisons, one using children 5 and under and one using children under the age of 1. The estimates using either cutoff are very similar, but the group of single mothers with children under 1 tend to have lower incomes and be more likely to participate in welfare programs than the single mothers with children 5 and under.

The estimates in Table 2 are meant to provide some insight into the likely change in economic circumstances that occurs when a child is placed for adoption. We estimate the new economic circumstances using the set of parents that have already adopted children to proxy for the types of households that would be the most likely to adopt these children. The results in Table 2 indicate that children 5 and under placed for adoption experience a household income

that is over 3 times larger than they would experience with a single mother. In addition, these children are over 2 times more likely to have a mother with a college degree and 86 percent of these adopted children will be living with two parents in the home. All of these factors have been shown in previous research to be strongly correlated with better lifetime economic outcomes for children. The results in Table 2 also indicate that these children are nearly 4 times less likely to receive SNAP and 3 times less likely to receive Medicaid. As such, the decision to place a child for adoption produces an immediate cost savings in terms of government expenditures. Each of these differences is larger when only considering children under the age of 1, suggesting that children adopted as infants experience larger gains than children who were adopted between 1-5 years-old.

We use estimates from recent studies by Lopoo and DeLeire (2014) and Lerman *et al.* (2017) to convert each of these differences in the household characteristics experienced by the child into changes in expected lifetime earnings. For example, Lopoo and DeLeire find that an extra \$1000 in household income experienced as a child translates into an additional \$397 in annual earnings as an adult. In addition, having a mother that has a college degree is associated with an additional \$40,000 a year in earnings as an adult as compared to a mother who just graduated from high school. The Lopoo and DeLeire estimates are based on rich data from the Panel Study of Income Dynamics and Lerman *et al.* (2017) find similar estimates using data from the National Longitudinal Survey of Youth 1979.

In Table 3, we combine these estimates with the differences that we observe in our data and use this to provide an estimate of the total change in earnings likely to be experienced by the child, based on the change in economic circumstances that accompany being placed for adoption. We find that based on the reported results from the literature, a child being placed for adoption is

associated with an adult income roughly \$40,000 more per year than those not placed for adoption. This is based on estimates for childhood permanent income, mother's education, and mother's marital status. This certainly does not reflect a causal estimate, but it allows us to use a single metric to describe the associated economic consequences of putting a child up for adoption. Furthermore, the decision to put a child up for adoption is associated with an increase in that child's lifetime earnings by about 1.6 million dollars.

The future children of the mother

For the children that are placed for adoption, the comparison of interest is between the family that adopts them and the situation of where they are raised by an unmarried teenage mother. For the future children of the mother, the comparison is a bit different. The estimates in Table 1 indicate that a woman who experiences an unmarried teenage birth is less likely to graduate from high school and less likely to be married in the future. Thus, any future children of the mother will likely experience worse economic circumstances than if the mother had placed her first child for adoption.

The ability to conduct this type of analysis is limited by the fact that no large nationally-representative datasets include survey questions about whether a woman has placed a child for adoption in the past. The National Survey of Family Growth has information in their fertility history to identify children that have been adopted by another family, though, it is impossible to tell from the data if the child was placed for adoption or removed from the mother through the foster care system. As such, we use an approach that approximates the possible economic consequences for the future children of the mother based on the estimates of how a teen birth

affect the mother's education and marital status. The estimates in this section are based on whether the mother actually has future children.

The first column in Table 4 provides the estimated relationship between the mother's characteristics and the estimated change in annual adult income for her children based on the estimates from Lopoo and DeLeire (2014) and Lerman *et al.* (2017). Those estimates indicate that a thousand dollar increase in the mother's annual income, is associated with an increase of the child's future annual income of \$397; graduating from high school is associated with an increase of the child's future annual income of \$7,149; and being married is associated with an increase of the child's future annual income of \$2,534.

The second column of Table 4 provides the estimated change in the mother's characteristic if she experiences a teenage birth based on the estimates from Table 1. The third column multiplies the change in the mother's circumstances in column 2 with how much these changes are associated with changes in the adult income of her children. Summing up these three estimates indicate that each of the mother's future children will have a \$147 higher income per year as an adult than they would have if she had not put the first child up for adoption. We are not able to factor in the gains of a mother graduating from college (like in Table 3) since this outcome is not available in the literature looking at the effects of teenage child bearing, but this should not significantly affect our results given that less than 2 percent of teen mothers complete college (NCSL, 2013). We suspect our estimate is unexpectedly small because we are relying on past estimates based on the occurrence of a miscarriage. The estimates from these studies have found surprisingly small effects (and often counter-intuitive effects) of having a teenage birth. These estimates based on miscarriages provide estimates that are much smaller than previous studies.

One consideration with these estimates is that the occurrence of a miscarriage provides a proxy for the impact of a randomly assigned teenage mother placing her child for adoption. What is more likely in practice is that a particular policy might change the fraction of teenage mothers placing their child for adoption by a few percentage points (which would represent a doubling of the adoption placement rates). Thus, the distinction between the marginal and average effect of an adoption placement becomes really important in this context. In practice, if the change in adoption placement rates occur for the teenage girls who perceive the largest benefits from placing their child for adoption, then the average estimates we use in this paper will not provide the correct insight on the impact of this particular group.

The grandparents

The last group that we examine are the parents of the teenage mother. We find that 71 percent of teenage mothers (ages 15-17) whose child is living with them are living in the home of one or both of their parents. This parental safety net certainly plays an important role in providing for the needs of the mother and child, but it raises the natural question of the economic cost of this care. In this section, we examine the degree to which the grandparents labor force participation and leisure patterns change as a consequence of caring for the grandchild living with them.

In Table 5, we provide some descriptive statistics for the sample of parents in our ACS sample who have a 15-17-year-old daughter present who had a baby within the last year. We separate these parents by whether or not the grandchild is present within the household. Broadly speaking, we find that the parents where the grandchild is not present in the household have a higher personal income, (\$31,000 per year as compared to \$24,000) have a higher household

income, (\$63,000 per year as compared to \$44,000) and are more likely to be employed (71 percent as compared to 67 percent) than those where the grandchild is still present in the household.

In order to evaluate these differences more robustly, we estimate a regression with these outcome measures while controlling for factors such as sex, age, number of own children in the household, race, and marital status. We also control for state-level measures of family health, family culture, and family sufficiency, all of which come from state-year level data from the Family Prosperity Index. These results are reported in Table 6. We find that individuals who are helping raise a grandchild in their home experience a personal income that is \$5,390 less per year and family income that is \$13,270 less per year than otherwise similar families without a grandchild present. They are also 5 percentage points less likely to be employed. Each of these differences are significant at the 1 percent level.

These results suggest that one of the economic costs of an unmarried teenage mother not placing her child for adoption is that her parents adjust their labor market decisions that involves less employment and less income for the parents, presumably to help with the care of their grandchild. This economic tradeoff is not exclusive to the parents of teen mothers, given that a significant number of grandparents help care for their grandchildren, but the timing of care is accelerated. This has large implications not only for household earnings, but also for personal retirement savings, future social security benefits, and retirement age. Workers must accumulate up to 40 quarters of earnings to claim social security payments and benefits. Additionally, interruptions in labor force participation have also been shown to lower future earnings (Spivey, 2005).

IV. Discussion

Previous studies in economics have noted a significant lack of research in the field about adoption (Moriguchi 2012). Recent empirical studies about the supply and demand of adoption (Moriguchi 2012) and theoretical economic models have provided new insights into the market for adoptions. However, very little of this research has examined the impact of the decision to place a child for adoption. This is partly due to the fact that so few teenage mothers place their child for adoption, so it is challenging to have a sample size large enough to examine this issue well. We contribute to this research question in the following three ways:

First, we expand the conceptual scope of individuals who are affected by the decision to place the child for adoption. While it is natural to consider the outcomes of the mother and child, since they are the most directly affected by the decision, we also show the importance of considering the teen mother's future children and parents. Our results indicate that narrowly focusing on the outcomes of the adopted child is likely to understate the total economic impact of the decision since the mother, her future children, and her parents are also significantly impacted.

Second, we draw on a rich area of research that has excellent data and rigorous methodologies, then we apply those results to our setting where the data and methodologies are much less extensive and effective. The ability to draw on this past research hinges in part on the degree to which placing a child for adoption is similar to experiencing a miscarriage. However, the decision to place a child for adoption is likely to be plagued by selection problems, so the occurrence of a miscarriage actually provides something closer to the causal effect, if placing a child for adoption were randomly assigned. Given the large estimates of the impact of teenage childbearing, it might be worthwhile to examine policies that randomly assign interventions that increase the willingness of mothers to place their child for adoption. Given the large economic

consequences at stake, even a small change in the adoption placement rate could produce large economic returns.

Third, very few datasets include direct measures of whether a mother placed a child for adoption, and those datasets with this information have very small samples. For example, the NLSY79 includes only 30 mothers for whom a child was placed for adoption. We exploit an interesting question available in the American Community Survey that asks women if they have had a child in the last year. We then examine whether the woman has a child under the age of one in the household. This proxy for placing a child for adoption provides us a much larger sample than any previous survey data and allows us to look at the immediate impact of placing a child for adoption on the labor market outcomes of the grandparents.

Combined across these four groups, the estimates in this paper suggest that pregnant teenage girls face a decision that will collectively change the earnings of the four groups by over a million dollars. In addition, it will have a dramatic effect on the degree to which the government will need to financially support each of the individuals involved, particularly the mother, her child, and all of her future children. Finally, while not part of our study, there are also the benefits to the family that gets to adopt a child, which are harder to quantify but can still represent a dramatic benefit to those families.

The results of this research suggest that public policy debates connected to adoption are missing a critical element: the economic impact that adoption policy changes can bring to individuals, families, and local economies. Examples of public policies that have the potential to impact adoption placement rates - meriting considerations of the policy's economic consequences based on this research - include a state's decision about whether to maintain a default position of having adoption processes open or closed to adopted children, and the size of tax credits for

adoption at the federal and state levels. This research suggests that these policies could have multi-million-dollar ripple effects through the economy: an issue that is rarely highlighted in debates about adoption-related policies.

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Table 1. Estimates of the Consequences of Teen Births using Miscarriages

Study	HS Diploma	Years of School	Married	Earnings	Family Income
Hotz, McElroy, Sanders (2005) NLSY79, age 28 outcomes	-0.110 (0.080)	-	-0.020 (0.100)	4,218 (1,707)	5,886 -
Fletcher and Wolfe (2009) Add Health, age 21 outcomes	-0.092 (0.044)	-0.121 (0.166)	-	-2,710 (1,745)	-
Hotz, Mullin, Sanders (1997) NLSY79, age 27, White	-0.127 (0.100)	-	-	4,147 (1,416)	-
Ashcraft et al. (2013) NSFG	-0.010 (0.050)	-0.150 (0.240)	-0.030 (0.050)	-73.6 (1,612)	638 (2,446)

Notes: Each of the cells provides a regression-based estimate from the original paper. The coefficients for HS diploma and Married are interpreted as percentage point differences and earnings and family income are measured in dollars per year.

Table 2 Comparison of households where children are being raised by adoptive parents or by single mothers

	<u>Children under age 5</u>		<u>Children under age 1</u>	
	Adoptive Parents	Single Mothers	Adoptive Parents	Single Mothers
2008-2011				
Annual Household Income	94,737 (92,204)	27,762 (33,248)	100,171 (99,299)	22,119 (29,024)
Mother has College Degree	0.47	0.23	0.52	0.18
Percent receiving SNAP	0.16	0.55	0.17	0.63
Percent on Medicaid	0.41	0.66	0.32	0.76
N	9,578	76,666	1,187	11,752
2012-2015				
Annual Household Income	95,517 (94,609)	26,594 (32,614)	100,314 (98,174)	20,853 (28,063)
Mother has College Degree	0.51	0.25	0.55	0.20
Percent receiving SNAP	0.18	0.60	0.19	0.68
Percent on Medicaid	0.43	0.70	0.32	0.79
N	7,901	71,029	869	10,495

Notes: This sample is from the 2008 to 2015 waves of the American Community Survey only to preserve continuity of data over time periods. It includes all children who are either listed as adopted children or are living with a single mother. Adopted children are limited to those born in the United States. Standard deviation in parentheses. All amounts are measured in 2017 dollars.

Table 3. Estimated change in adult income for an adopted child.

	Literature Estimates	Differences from Table 2	Estimated Difference in Family Income
Mother's Annual Income	0.397	68,923	27,362
Mother has College Degree	38,851	0.26	10,101
Mother is Married	3,640	0.85	3,094
Difference in Annual Income	-	-	40,557
Difference in Lifetime Income	-	-	1,622,280

Notes: The estimates from the literature for Mother's Annual Income and Mother has College Degree come from Lopoo and DeLeire (2014). The literature estimate for Mother is Married is calculated using Tables 1 and 2 from Lerman, Price, and Wilcox (2017). The differences from Table 2 come from the children 5 and under column in the years 2012-2015. The comparison group for the mother having a college degree is high school graduates and for mother being married is single mothers. Difference in lifetime income is based on an individual working from age 25 to age 65.

Table 4. Estimated change in adult income for the future children of a mother who gives a child up for adoption.

	Literature Estimates	Mean Differences from Table 1	Estimated Difference in Family Income
Mother's Annual Income	0.397	-1,395	-554
Mother is HS Graduate	7,149	0.085	608
Mother is Married	2,534	0.025	63
Difference in Annual Income	-	-	147
Difference in Lifetime Income	-	-	10,560

Notes: The literature estimate for Mother's Annual Income comes from Lopoo and DeLeire (2014). The literature estimate for and Mother is HS Graduate and Mother is Married are from Lerman, Price, and Wilcox (2017). The comparison group for the mother being a high school graduate is high school dropouts and for mother being married is single mothers. Difference in lifetime income is based on an individual working from age 25 to age 65.

Table 5. Comparing grandparents with grandchildren born to a teenage daughter

	Child present	Child not present
Personal Income	24,396 (30,895)	31,038 (40,176)
Household Income	43,738 (43,351)	63,150 (64,380)
Percent Employed	0.67	0.71
Percent College Degree	0.13	0.21
Percent High School Graduate	0.46	0.43
Percent Female	0.64	0.58
Age	43.0 (7.43)	44.2 (7.59)
Number of Children	2.32 (1.26)	2.96 (1.52)
Percent White	0.64	0.61
Percent Black	0.20	0.18
Percent Married	0.55	0.68
N	2,511	2,812

Notes: The sample is restricted to households in the American Community Survey where we observe a teenage daughter (ages 15-17) in the household who reports having had a birth in the last year. We then compare the outcomes of the daughters parents based on whether or not the daughter's child is present in the household, which we use as a proxy for the effect of placing a child for adoption. Standard deviation in parentheses.

Table 6. Regression Analysis of Grandparents with Grandchildren at Risk of Adoption

	Personal Income		Family Income		Percent Employed	
Kept Grandchild	-9,390**	-5,390**	-23,190**	-13,270**	-0.06**	-0.05**
	(2,270)	(2,110)	(4,700)	(4,130)	(0.02)	(0.02)
N	2,075	2,071	2,075	2,071	2,075	2,071
Controls		x		x		x

Notes: Standard errors are in parentheses. Controls are included for education, sex, age, number of own children in the household, race, and marital status. Additional controls for family health, family culture, and family sufficiency taken from the Family Prosperity Index are also included. ** p<0.01, * p<0.05