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Do Adoption Subsidies Help At-Risk Children?

Kasey S. Buckles*

Abstract

Over half a million children in the United States are currently in foster care, many of whom are at risk for long-lasting emotional and health problems. Research suggests that adoption may be one of the more promising options for the placement of these children. The Adoption Assistance and Child Welfare Act of 1980, which provided federal funds for monthly adoption subsidies, was designed to promote adoptions of special-needs children and children in foster care.

Using data from the Adoption and Foster Care Analysis and Reporting Systems for 2000-2006, I consider the effects of these adoption subsidies on children's likelihood of being adopted, on time spent in foster care, and on the characteristics of adoptive families. Because subsidies may be determined endogenously, I employ an identification strategy that exploits state variation in the age at which children are eligible for federal subsidy funds. I find that foster children who are eligible for subsidies are more likely to be adopted, and that eligibility increases the hazard of discharge from foster care. Conditional on adoption, higher expected subsidies increase time to adoption finalization and increase the probability that a child is adopted by a relative such as a grandmother.

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I. Introduction

At the end of 2006, there were 510,885 children in the United States in foster care.[1] The vast majority of foster children come from disadvantaged backgrounds and are at much greater risk for emotional and health problems than their peers. For example, one-third of these children with reported disability information had some form of clinical disability, such as mental retardation or a physical disability. Additionally, 67.5% of children for whom a reason for removal from the home is reported had been abused or neglected, and 26.1% had experienced drug or alcohol abuse by a parent. Among children for whom government funding information was available, 49.0% were eligible for Medicaid, and Duncan Lindsey (1991) finds that low family income is the single best predictor of a child's placement into foster care.

Research suggests that adoption may be one of the most promising options for the placement of these at-risk children. Relative to children in long-term foster care, adopted children have lower placement disruption rates, and the rate of abuse of children in adopted homes is even lower than that for the general population (Barth and Berry 1994). Adopted children score higher on IQ tests than their unadopted siblings or institutional peers and have better educational outcomes (Van Ijzendoorn, et al 2005; Barth and Berry 1994). Financial investment by families over the lifetime of adopted children is estimated to be $150,000 more than that for foster children, and adopted children are more attached to their caregivers, are more able to form healthy adult relationships, and experience fewer emotional difficulties later in life (Barth and Berry 1994; Triseliotis and Hill 1990).

Because adoption is believed to be a desirable outcome for many foster children, various policies have been introduced at all levels of government to encourage adoption. In 1980,

[1] Adoption and Foster Care Analysis and Reporting System (AFCARS), 2006.

Congress passed the Adoption Assistance and Child Welfare Act (AACWA), which provided federal funds for monthly adoption subsidies designed to promote adoptions of special needs children and children in foster care. The program had three main goals: to encourage adoption when it is in the child's best interest, and the adoption of special-needs children in particular; to reduce the number of children in foster care and the duration of a child's stay in foster care; and to improve the quality of care and services of children in the child welfare system.[2] From 2000 to 2006, 86.8% of children adopted through child welfare services received a subsidy, with the average amount being $571.95 per month.[3] By 2002, the program provided subsidies for 285,600 children at a cost to the Federal government of over $1 billion, and was projected to grow to over $2.5 billion by 2008 (2004 Green Book).[4] State and local government spending increases this total by about 80% (Scarella, et al. 2004). The program was recently expanded in 2008 to remove income requirements and provide for kinship care, and the American Reinvestment and Recovery Act of 2008 (ARRA) added an additional $98 million in funding for adoption assistance over 2009 and 2010.[5]

A few previous studies have attempted to examine the effects of adoption subsidies on adoption outcomes and adoption rates. Using survey data, Sedlak and Broadhurst (1993) find that children adopted with subsidies exited foster care to their adoptive families more quickly

[2] These goals are outlined by the National Clearinghouse on Child Abuse and Neglect Information (nccanch.acf.hhs.gov/pubs/otherpubs/majorfedlegis.cfm, accessed March 2006).
[3] In comparison, the average monthly amount of AFDC payments to families in 2002 was $395.96 (www.ssa.gov). The subsidies generally continue from adoption to the age of 18, so that the average family adopting a toddler would receive over $100,000 in present value during their participation in the program.
[4] The subsidy program is comparable in size to more well-known and more studied programs such as the State Children's Health Insurance Program (SCHIP) and the Supplemental Nutrition Program for Women, Infants, and Children (WIC), which received $3.2 billion and $4.37 billion in federal funds in 2002, respectively (2004 Green Book).
[5] www.nacac.org, www.hhs.gov/recovery/programs/acf/adoption-foster.html

than children adopted without a subsidy. They also report that 29 percent of families who adopted from foster care in the mid-1980s said that they would have had difficulty adopting without the subsidy, and 35 percent said the availability of the subsidy had a positive influence on their decision to adopt. Hansen and Hansen (2006) find that a 1% increase in adoption subsidies is correlated with a roughly 1.5% increase in the demand for adoption services, and conclude that adoption subsidies are the most effective available policy tool for promoting the adoption of children from foster care. Hansen (2007a) predicts than an increase of $94 per month in a state's average subsidy would increase the state adoption rate by 130%. In contrast, Dalberth, Gibbs, and Berkman (2005) report that states' median subsidy amounts are not correlated with either the rate of adoptions from foster care or the time to adoption.

A limitation of these previous studies is the reliance on correlations (Dalberth, Gibbs, and Berkman 2005), conventional OLS estimation (Hansen and Hansen 2006), or OLS with state fixed effects (Hansen 2007a) to estimate the effects of the subsidy program. Because subsidy amounts are based on the needs and resources of the involved parties, these results potentially suffer from omitted variable bias due to unobserved family, child, or case worker characteristics. For example, children who are difficult to place due to behavioral problems may receive higher subsidies and also have longer stays in foster care; this would cause a positive bias in estimates of the effect of subsidies on time to adoption.

This paper will consider how adoption subsidies affect a child's probability of adoption, time spent in foster care, and type of adoptive family, using an identification strategy that accounts for the endogeneity of subsidy receipt and amount. I exploit state-level variation in the minimum age at which children may be designated "special needs" by age, where special needs designation is required for federal subsidy funds. This variation in policy means that children of

the same age are eligible for federal funds in some states and not in others. I show that this eligibility for special needs designation by age increases the likelihood of receiving a subsidy by 14% and increases the expected subsidy amount by $110.

Using this variation in expected subsidy amount induced by minimum age requirements, I present reduced form results that show that children discharged from foster care are 20% more likely to be adopted when subsidy eligible. I also estimate a hazard model and show that eligibility increases the hazard of discharge from foster care by about 5%, thereby decreasing time spent in care—an effect that is due to increased adoptions of children who would otherwise have had lengthy stays in foster care. Reduced form results for data on adopted children suggest that subsidy eligible children are more likely to be adopted by an older relative (such as a grandparent). Instrumental variables estimates of the effect of an increase in expected subsidy amounts confirm that higher subsidies encourage older relatives to adopt. These results are qualitatively different from those predicted by simple OLS regression.

Section II provides background information on adoption subsidies, and Section III describes the data and sample. I discuss the endogeneity problem and present the estimation strategy in Section IV. Results are presented in Section V, and Section VI concludes.

II. Adoption Subsidies and Special Needs Designation

The AACWA, signed into law on June 17, 1980, established and funded "a program of federal support to encourage adoptions of children with special needs."[6] The law amends Title IV of the Social Security Act, and requires states to make monthly adoption assistance payments to families that adopt special needs children. The intent of the program was to alleviate the

[6] Library of Congress, Thomas bill summary (2005).

financial burden of adopting a child, and economic theory predicts that the subsidy program should increase the demand for adoption services (Dalberth, Gibbs, and Berkman 2005; Hansen and Hansen 2006). Since 1980, the federal government has broadened the approach to promoting adoptions by providing performance incentives to states and offering tax credits, but the subsidy program remains the largest and most-used policy tool.[7]

Each individual adoptive family negotiates with their state child welfare agency to determine their subsidy eligibility and amount. In determining subsidy amounts, states consider the income of the adoptive parents, as well as the needs of the child. Some states choose to offer a basic subsidy rate, perhaps based on the child's age, which they rarely modify. Others have basic guidelines but leave the actual amount to the discretion of the case worker.

Almost half of the funding for the subsidy program comes from state and local funds, but most children are also eligible for federal matching funds under the AACWA. To be eligible for federal funds, the state must first have made reasonable efforts to place the child without assistance, and the child must have been AFDC/TANF- or SSI-eligible prior to removal from their pre-adoptive home. Additionally, the child must be classified as having special needs, where special needs are defined as a condition making it difficult for the child to be placed in an adoptive home. Such conditions include greater age, medical disability, or membership in a sibling group, ethnic group, or minority race. From 2000-2006, 81% of children who received a subsidy were eligible for federal funds. Federally-matched payments must be less than the foster care subsidy the family would receive for the child, and terminate when the child reaches the age of 18 (or 21 in the case of mental or physical disability). State contributions are matched with federal funds according to the Federal Medical Assistance Percentage (FMAP), which matches

[7] See Hansen (2007a) for a review of federal programs supporting adoption, through 2001.

contributions for states with lower per-capita incomes at higher rates than states with higher incomes.

Differences in child and adoptive family characteristics, combined with the flexibility that states have when operating their subsidy programs, yield considerable variation in subsidy amounts. From 2000 to 2006, 86.8% of children adopted through child welfare services received a subsidy. [8] The average amount was $571.95 per month, with a standard deviation of $418.98; the median was $461. Subsidy amounts are generally higher for male children, older children, and when the time since termination of parental rights is greater (see also Dalberth, Gibbs, and Berkman, 2005). Additionally, subsidy amounts are correlated with the pre-adoptive relationship—for example, children adopted by their foster parents tend to receive higher subsidies. Finally, subsidies are about $31 higher, on average, for children who are eligible for federal funds.

The total cost to the federal government of the subsidy program in 2002 was over $1 billion, serving 285,600 children. These figures represent dramatic increases since the program's inception in 1981, when only 163 children received adoption assistance for a total of about $400,000. The cost was projected to grow to $2.5 billion by 2008, and an additional $98 million was allocated ARRA for 2009 and 2010. Inflation-adjusted per-child expenditures exhibit a slight upward trend since the early 1980s. However, the majority of the increase in cost (over 85%) has come from increases in the number of children receiving assistance, rather than changes in the amount of assistance received.[9] Figure 1 shows the dramatic increase in both cost

[8] There are 348,848 adoption records for 2000-2006. Subsidy statistics are computed using the subsample for which subsidy information is reported (91% of the sample).

[9] The increase in children receiving assistance is in keeping with the dramatic increase in foster care caseloads that occurred over the 1980s and 1990s (Swann and Sylvester 2006). Rising rates

and average number of monthly recipients.

An important feature of the subsidy program is the requirement that a child be designated "special needs" in order to receive federal funds. Again, such conditions include age, medical disability, or membership in a sibling group, ethnic group, or minority race. States can choose how they define a special needs child, and in particular, states vary on the age at which a child is designated as being special needs by age. As a result, children of the same age can be designated as having special needs in some states and not in others. It is this variation that will be used in the estimation strategy below.

III. Data

A. Foster Care Data

The AACWA requires all states to report annual data on all children who were in foster care or who were adopted through their child welfare agency to the Children's Bureau of the Administration on Children, Youth and Families. The data are distributed as the Adoption and Foster Care Analysis and Reporting System (AFCARS) by The National Data Archive on Child Abuse and Neglect. This study will use AFCARS data from 2000 to 2006, and both the Foster Care and Adoption Files are used. First, the Foster Care Files contain date of birth, gender, race, and disability information for each child; and age, race, and family structure for birth and foster families. The data contain detailed case histories, including date of removal from the home and reason for removal (such as abuse, neglect, or abandonment); dates for recent placements and for discharge; reason for discharge (including reunification, living with a relative, adoption, emancipation); and sources and amounts for foster care subsidies. Each reporting period

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of female incarceration and reductions in welfare benefits have been cited as primary causes of the increase in caseloads.

(October 1 to September 30) has approximately 800,000 cases, and children who are in care in multiple reporting periods will have records in each period. Therefore, when combining the years to form a pooled cross-section, I identify duplicate observations using state, date of birth, and date of removal from the home and keep only the most recent observation (which contains and updates all of the information from the previous periods). Restricting the sample to children under 18 leaves 2,523,695 cases.

Table 1 contains summary information for the children in this full sample. Twenty percent of children in foster care have a medical condition, and over half have been neglected. Twenty-two percent have suffered physical or sexual abuse. 56.1% percent were receiving a foster care subsidy, with an average monthly payment of $1,239. Finally, 67.5% would be eligible for special needs by age designation (and therefore for federal funds for this reason) in their state.

The restricted sample in Table 1 contains only the cases that will be used in the regression analysis. This sample omits children from 16 states due to incomplete reporting (Arkansas, Georgia, Kansas, New York), because they do not have a strict cutoff for special needs designation by age (Hawaii, Idaho, Kentucky, Massachusetts, Minnesota, North Carolina, South Dakota, Vermont, and West Virginia), or because their state cutoffs were below age 2 or over age 10, making them outliers in the distribution (Illinois, Louisiana, and Rhode Island). The latter two restrictions are imposed by the identification strategy, described in detail below. This sample also omits children who were emancipated or who ran away or died during foster care (1.6% of cases), leaving 1,826,264 children. The characteristics of children in the restricted sample are quite similar to those of the full sample.

B. Adoption Data

The Adoption Files include a record for each child with a finalized adoption from foster care. The files contain data on date of birth, gender, race, disability, and special need designation for each adopted child; and age, race, and family structure for the adoptive parents. The data also identify the pre-adoptive relationship (foster parent, relative, non-relative) and dates for the termination of parental rights and the adoption finalization. I also observe whether the child receives an adoption subsidy, the amount, and whether Title IV-E adoption assistance is claimed. Again, the data for the years 2000-2006 are combined to form a pooled cross-section. There are about 45,000 reported adoptions of children under 18 each year, for 315,855 total cases.

Table 2 describes the characteristics of children who are adopted with and without a subsidy, for both the full and restricted samples. First, for the full sample, we see that 87.5% of children adopted with a subsidy are designated special needs on the basis of age, race, sibling group, medical condition, or other, compared to only 55.0% for those with no subsidy. Those adopted with a subsidy are older and more likely to be black, Hispanic, or to have a medical condition. Adoption outcomes also vary by subsidy receipt—recipients are more likely to be adopted by a foster parent or older relative, and their time from termination of parental rights to adoption is about 52 days longer. All differences between the two groups are statistically significant at the 5% level.

The restricted sample in Table 2 again includes only those observations that will be included in the regression analysis. Thus, children from the 16 states with incomplete reporting, without a strict age cutoff, or with a cutoff below two or over ten are omitted. In the adoption regressions, however, I also omit children whose primary special needs designation is listed as a reason *other than age* (such as race, medical condition, or sibling group). These children are

already subsidy eligible and therefore should not be "treated" by the special needs by age designation. [10] By definition, children in this subsample should be less disadvantaged. The data confirms that children in the restricted sample are younger, less likely to have a medical condition, less likely to be black, and less likely to be designated special needs. As with the full sample, there are important differences in both the characteristics and outcomes of children adopted with and without subsidies. These differences illustrate the difficulty in interpreting relationships between subsidies and outcomes as causal. We see that children adopted with subsidies are different in observable ways; they are likely to be different in unobservable ways as well. I now turn to a discussion of the empirical strategy that I will use to address this issue.

IV. Estimation

To evaluate the subsidy program, we would like to estimate the following model:

$$Y_{is} = \beta_0 + \beta_1 SUBS_{is} + \gamma X_{is} + \delta t + u_{is} \qquad (1)$$

where Y_{is} is the dependent variable of interest; $SUBS_{is}$ is a variable indicating subsidy receipt or subsidy amount; X_{is} is a vector of individual characteristics; t represents a vector of year dummies; and u_{is} is error. The subscript i indexes the individual and s identifies the state. For the primary results using foster care data, the dependent variable will be a dummy variable indicating the placement outcome (adoption, relative care, reunification, guardianship, or transfer). For the results using the adoption data, the dependent variable will be either the time to adoption (where time to adoption is defined as the number of days between the termination of

[10] In the AFCARS data, only one reason for special needs designation is given, though more than one reason may apply. Thus, children in the restricted sample who are identified as special needs by age might have been subsidy eligible without this designation. Therefore, reduced form estimates of the effect of qualifying for a subsidy on the basis of age will tend to underestimate the true effect.

parental rights and the finalization of the adoption) or a dummy indicating the type of adoptive family (foster parent, older relative, non-relative).

The difficulty in estimating the above equation arises because $SUBS_{is}$ is a choice variable that is potentially correlated with unobserved child, family, and case worker characteristics. Thus, OLS estimates of β_1 likely suffer from omitted variable bias, though the direction of the bias is unclear. For example, consider the bias that would result if $SUBS_{is}$ is correlated with unobservable child characteristics, where the dependent variable is time to adoption. Children who are difficult to place for emotional, behavioral, or other unreported reasons might receive higher subsidies and also have longer times to adoption—resulting in a positive bias in the estimate of β_1. Alternatively, characteristics of the case worker might negatively bias the coefficient, if particularly effective or aggressive case workers award higher subsidies and have lower average times to adoption. Wealthier adoptive families, who receive lower subsidies on average, might also be able to navigate the child welfare system more quickly and therefore have shorter times to adoption, resulting in a positively biased coefficient. These are just a few plausible sources of bias in OLS estimation, though there are likely others.

In order to resolve this issue and to identify the effect of subsidies on adoption outcomes, this paper uses an identification strategy that exploits state-level variation in the age at which children are designated special needs on the basis of age. Recall that an important feature of the subsidy program is the requirement that a child be designated as having special needs in order to receive federal funds. States can choose how they define a special needs child, and in particular, states vary on the age at which a child is designated as being special needs by age. As a result, children of the same age can be designated as special needs in some states and not in others. Table 3 lists the minimum age at which a child can be designated as having special needs by age

in each state, with the age requirement for white children ranging from 1 to 12 years. It is this variation that will be used in the estimation strategy below.

For results using the adoption data, results will be estimated using an instrumental variables strategy. The instrumental variable (IV) will be a dummy equal to one if the child qualifies as special needs by age in his or her state and zero otherwise. For example, the IV would be equal to one for a six year-old living in Indiana but zero for a six-year old living in Iowa. Because qualifying for special needs status makes the child eligible for federal funds, this variable should be positively correlated with expected subsidy amounts. It should not, however, be correlated with the error term in the above model, conditional on age, race, or gender. [11] The correlation between eligibility and receipt is not perfect, as states can and do award subsidies to children that do not meet these requirements. Also, because states must make an effort to place a child without a subsidy before federal funds will be awarded, some children who appear to qualify for a subsidy on the basis of age do not receive one. [12]

On average, children who received a subsidy were in fact more likely to have qualified for special needs by age status and were also more likely to have officially been designated as having special needs (Table 2). In Figure 2, I show results that suggest that the special needs by age designation does significantly affect subsidy receipt and subsidy amounts. Each panel in the figure shows the subsidy outcome as a function of the child's age relative to his or her state

[11] State age minimums are sometimes different for white and nonwhite children or for boys and girls. Differences by race have been omitted from Table 3 for simplicity but are taken into account in the estimation.

[12] Because treatment is not perfectly correlated with eligibility (the instrument), the estimation strategy used here is similar to the one described in Angrist, Imbens, and Rubin (1996). In their paper, the authors propose using instrumental variables to identify a causal Local Average Treatment Effect (LATE). Their example of using draft lottery number as an instrument for veteran status is analogous to my use of a child's qualification for special needs status by age as an instrument for subsidy amount

cutoff. The sample is adopted children from the restricted sample. First, in Panel A, we see that the likelihood that a child is adopted with a subsidy increases precisely at the point of eligibility. Before eligibility, fewer than 75% of children were adopted with a subsidy; after eligibility, this percent jumps to about 85% before leveling off at 90%. The 95% confidence intervals suggest that these differences are significant. Similarly, in Panel B, the average subsidy amount conditional on receiving a subsidy increases after eligibility. This would be expected if the designation makes the child eligible to receive federal funds.

In the IV estimation, the policy variable that will be used is the average subsidy amount for the entire restricted sample (including those who receive no subsidy). This should be thought of as the expected subsidy amount, as it contains information on both the probability of receipt and on the amount received. As Panel C confirms, children adopted after becoming subsidy eligible have significantly higher expected subsidies, and there appears to be a discontinuity precisely at the point of eligibility. [13]

[13] At first glance, the results in Figure 2 might suggest that a fuzzy regression discontinuity design (RD) could be used to estimate the impact of adoption subsidies, since the probability of treatment changes precisely at the minimum age threshold. In this case, I could effectively compare children within a narrow range on either side of the age threshold within a state. However, the internal validity of this design hinges on the assumption that the mean outcome would be continuous at the threshold in the absence of the policy (Lee 2008). When the policy is known, this assumption can be violated, since individuals may sort themselves into treatment (Lee 2008; McCrary 2008). In this case, the concern is that potential adoptive parents know about the threshold and may wait to adopt until they become eligible for funds.

McCrary (2008) suggests that such sorting would result in a "lumpiness" around the cutoff as agents sort themselves into treatment. Here, we would expect a decrease in adoptions of children who will soon become subsidy eligible. In Appendix Table 1, I use foster care records of children who are adopted to calculate the total number of adoptions per day, for children of a given age (in days) relative to the cutoff. To maintain the same sample of states for all days, I limit the sample to states with a cutoff between 5 and 8 (about 61% of adopted children). The specification is similar to that used in the rest of the paper.

The results in Column 1 suggest that crossing the age threshold increases adoptions per day by about 2.32, relative to a mean of 23.63. However, in the next two columns we see that the number of adoptions decreases in the months leading up to the threshold. In Column 3, there are

The results in Figure 2 serve as a visual first stage for the IV estimation; the first stage is estimated using OLS in Table 4. Controls are added for observed characteristics of the child, as well as for region, the log of state per capita income, and year fixed effects. First, the results in the first column confirm that children who qualify for special needs status by age in their state are 11.93 percentage points (14% of the mean) more likely to receive a subsidy than children who are ineligible. The second column confirms the expected mechanism, as these children are also more likely to receive federal funding for their subsidies. In column 3, we see that among children receiving any subsidy, the amounts were $61.69 higher for eligible children. The simultaneous increase in both the probability of receiving a subsidy and in subsidy amounts produces a $110.40 increase in expected subsidy amounts for children when they become subsidy eligible (column 4). This last result is the first stage for the IV results below, and is significant at the 1% level.

The results in Figure 2 and Table 4 confirm that eligibility for special needs by age status is significantly correlated with expected subsidy amounts. However, the IV strategy will only produce consistent estimates if eligibility is unrelated to the unobservables (u_{is} in Equation 1). Conditional on age, we would not expect an individual child's unobservable characteristics to be correlated with eligibility, since eligibility is determined at the state level. We might, though, be concerned that states with different age cutoffs are different in other ways as well. States with lower cutoffs might have other more generous policies or more difficulty placing children in adoptive homes, for example. However, Doyle and Peters (2007) find that states do not set

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1.79 fewer adoptions per day in the month immediately preceding eligibility, relative to children who are more than a year from eligibility. While the results are statistically insignificant, they do suggest that the threshold may be influencing the behavior of the adoptive parents. Therefore, rather than a fuzzy RD design, I use an estimation strategy that exploits variation in minimum ages across states.

market-clearing rates for foster care subsidies, which are closely related to adoption subsidies because of an AACWA requirement that adoption subsidies not exceed foster care subsidies. Also, no state changed its minimum age requirement between 2000 and 2006, which further suggests that policies are not highly responsive to supply and demand for child welfare services. In correspondence with state child welfare agencies, the prevailing sentiment was that the age minimums had been set long ago, and there was both variation in and uncertainty about the process used to set them.[14] I add controls for region and per capita income to the estimates, but the results are not sensitive to their omission. Finally, I limit my sample to states with cutoffs within four years of the median and modal cutoff of 6 because these limited variations might be considered more plausibly exogenous; this omits Illinois, Louisiana, and Rhode Island.[15]

For the foster care data, actual adoption subsidy amounts are unavailable, so IV estimation with Two-Staged Least Squares is not possible. I will, however, present results based on the reduced form, where the outcome of interest is regressed on the instrument directly (the dummy indicating eligibility for special needs status by age). Conceptually, if we observe different adoption probabilities for children with different eligibility status (conditional on age), we can attribute that difference to the fact that the eligible children had higher expected subsidy

[14] We contacted the State Subsidy Contact Person given on the website of the North American Council for Adoptable Children (http://www.nacac.org/adoptionsubsidy/stateprofiles.html), using both e-mail and telephone calls. We received a response from 22 of the 38 states contacted. When asked who set the age minimum, responses included the child welfare division director, the Department of Children and Families, social services officers, adoption program managers, state legislators, combinations of these, and others.

[15] The results are not sensitive to the inclusion of these states, with the exception of the set of results for type of adoptive family (Tables 7 and 8). These results are less precise and qualitatively different when Illinois is included, because 99.9% of Illinois' adopted children report being adopted by a foster parent. This is apparently due to several factors, including higher rates of guardianships in Illinois (an alternative to adoption for relatives), a policy decision (made in the late 1990s) to encourage adoption among existing foster parents, and the fact that many adoptive parents in Illinois become certified foster caregivers before adopting.

amounts. The reduced form estimates also identify the direct effect of being subsidy eligible on outcomes, which is an important policy question. Accordingly, I present reduced form estimates for outcomes in the adoption data as well.

V. Results

A. Foster Care Outcomes

First, I will consider whether eligibility for an adoption subsidy on the basis of age affects a foster child's probability of being discharged into an adoptive home. For the results in Table 5, the sample is restricted to children who were discharged from foster care, which excludes children who are still in care. I also exclude children who were emancipated or who ran away or died while in care. The possible reasons for discharge include reunification with the family, living with a relative, guardianship, transfer to another agency, and adoption. Throughout this section, regressions include controls for age, sex, race, medical condition, Hispanic origin, region, log state per capita income, and year, with standard errors clustered at the state level.

In the first column, we see that eligibility for special needs by age status has a practically meaningful and statistically significant effect on the likelihood that a discharged child was adopted. Eligibility increases the percent adopted by 4.05 percentage points, or 20.4% of the mean. Because eligibility increases the expected adoption subsidy by 19% ($110), this suggests an implied elasticity of demand for adoption of about one. This should be thought of as a lower bound, since the 20.4% refers to a change in the composition of discharged children; if eligibility causes additional children to be discharged, the effect on the total number adopted would be higher.

In the remaining columns, we see that about half of the adopted children would have been

placed with a relative in the absence of subsidy eligibility, though the coefficient is statistically insignificant. Children were also less likely to be reunified or transferred to another agency when subsidy eligible. Thus, these reduced form estimates suggest that subsidy eligibility does promote the adoption of children in foster care.

A second goal of the AACWA was to reduce time spent in foster care. To evaluate the success of the subsidy program in achieving this goal, I use a hazard model to estimate how the subsidy program affects a child's probability of discharge from care. The hazard model is an appealing choice because it allows me to include children with incomplete spells. These children, who may be the most important for policy makers since they are in perpetual foster care, were omitted from the sample in Table 5. The hazard model also allows for time dependence (the fact that the likelihood of discharge may depend on time already spent in care).

I use a specification that allows the main covariate (whether the child is subsidy eligible by age in his or her state) to vary over time. In the hazard model, each observation is a spell in foster care, measured in days from last removal from the home to the date of discharge, or to the date of most recent report for children still in care. Figure 3 shows Kaplan-Meier survival estimates, which indicate the fraction of children still in care by length of spell. We can see that the likelihood of remaining in foster care falls more quickly at first, and then flattens out. At any point, the fraction of children still in care is higher for those who qualify for special needs by age in their state, though it is important to note that these figures are not adjusted for age or other covariates.

To determine the reduced form effect of qualifying for special needs status by age, I estimate a parametric hazard model in a Weibull form. The Weibull form was chosen based on the shape of the Kaplan-Meier survival estimates, and because it allowed the use of time-varying

covariates. The dependent variable is time to discharge, and the main independent variable is again a dummy indicating that the child is eligible to be designated special needs by age in his or her state. The coefficients from this hazard model are reported in Table 6. For the full sample the estimate of the hazard rate is 0.0498, implying that eligibility increases the hazard of discharge and reduces the expected time spent in care. While this result is statistically insignificant, it is informative when taken together with the results by discharge reason in the remaining columns.

For children who are adopted, the hazard coefficient is actually negative—subsidy eligibility decreases the hazard of discharge by about 30%, thereby increasing time spent in care. This could be the case if potential adoptive parents wait to finalize adoptions until the child qualifies for special needs by age status, or if the process of adoption is longer for subsidy eligible children. There may also be an important composition effect—as the results in Table 5 suggest, subsidy eligibility promotes the adoption of children who might not have been adopted otherwise, and these children could have longer stays in foster care. The estimated hazard rate for reunified children is also negative. Adopted and reunified children together make up over half of the full sample, but yet the hazard rate for the full sample is insignificantly positive. This result must be driven by the discharge of children who otherwise would still be in long-term foster care.

Taken together, the results of Tables 5 and 6 indicate that subsidy eligibility increases the likelihood that a discharged child was adopted, and children who would have had lengthy stays in foster care are being adopted when they are subsidy eligible. I now turn to results using the adoption data to determine whether subsidy eligibility and amount affect the type of adoptive home.

B. Adoption Outcomes

Before estimating the effect of subsidy amounts using IV estimation, I consider the reduced form estimates of the effect of subsidy eligibility. As with the above results, the independent variable of interest is a dummy indicating that the child is eligible for special needs by age designation. The outcomes to be considered are the type of family adopting and the number of days to adoption. A child is identified as being adopted by an older relative if the adoptive mother is a relative that is at least 35 years older than the child (most likely a grandmother).[16] Children who were designated special needs for a reason other than age are omitted, as are children with subsidy amounts in excess of $2500 per month, or after more than ten years since termination of parental rights (1.4% and 2.6% of the sample, respectively).

Figure 4 shows how the fraction of children adopted by three different types of families changes as children become subsidy eligible. Again, the horizontal axis measures the child's age, in years, from his or her state cutoff. It is important to keep in mind that the data include only adopted children, so that all results are conditional on adoption.[17] In Panel A, we see that the fraction of children adopted by an older relative nearly doubles after subsidy eligibility. The fraction adopted by a foster parent does not deviate noticeably from the trend, but children are less likely to be adopted by someone with whom they have no prior relationship after subsidy eligibility. The results in the previous section confirmed that children were more likely to be adopted when subsidy eligible, and these figures suggest that older relatives (typically grandparents) may have been the ones induced to adopt by the subsidy.

[16] The AFCARS data do not separately identify grandparents.

[17] Also, because children who are eligible for special needs due to race, sibling group, or medical conditions are subsidy eligible regardless of age, all results in this section are based on a restricted sample that omits these children. If the omitted children are more difficult to place than the children in the samples, subsidies may have different effects on their adoption outcomes.

The regression results in Table 7 confirm this. Adopted children were 5.17 percentage points more likely to be adopted by an older relative when subsidy eligible. This represents a 26% increase above the mean, and the result is statistically significant. In the regression specification, we see that children appear to be likely to be adopted by non-relatives (step-parents and younger relatives are an omitted category). I also present results for the effect of subsidy eligibility on the log of days to adoption, and it appears that eligibility increases the time in foster care for children who are adopted by about 10.2% (consistent with the results for adopted children in Table 6).

I now turn to IV estimation of the effect of expected subsidy amount. The instrument is a dummy equal to one if the child is eligible for special needs classification by age under the policies of his or her state. The sample is adopted children under 18 who were not designated as special needs for any reason other than age. Results for the type of adoptive home are in Table 8. With OLS estimation, it appears that children with higher expected subsidy amounts are less likely to be adopted by an older relative, though the coefficient is small. However, with IV estimation, we see that higher amounts do induce older relatives to adopt. A $100 increase in expected subsidy amount increases the fraction of children adopted by an older relative by 0.045, or 23%. A Hausman test rejects that the OLS and IV coefficients are the same. One possible explanation for the apparent negative bias in the OLS estimate would be that children who are difficult to place (perhaps because of behavioral problems) tend to receive higher subsidies and are also less likely to be adopted by relatives. The IV results eliminate this omitted variable bias, and we see that subsidies actually encourage older relatives to adopt.

Similarly, OLS and IV results for foster parent and non-relative adoption lead us to different conclusions. With OLS, the fraction adopted by a foster parent appears to increase with

higher expected subsidies, while there is no effect on the fraction adopted by a non-relative. However, when instrumenting for subsidy amount with special needs eligibility, the sign of each of the coefficients is reversed. For adoption by a non-relative, a Hausman test rejects that the IV and OLS coefficients are the same in both cases. When expected subsidy amounts increase by $100, there is an estimated decrease of about 0.027 in the fraction adopted by a foster parent. It is important to keep in mind that the effects here are compositional—they do not establish that foster parents and non-relatives are deterred from adopting, but rather that they may be less responsive to subsidies than older relatives.[18] These results are consistent with Joseph Doyle's (2007) finding that families were more likely to provide care for related children when foster care subsidies were higher.

The results for time from termination of parental rights to adoption finalization are presented in Table 9. Again, we see that OLS and IV estimates yield different results; the Hausman test rejects that the coefficients are the same in both cases. The OLS results suggest that higher expected subsidies have little practical impact on time to adoption. However, the IV results reveal a significant and meaningful effect—a $100 increase in expected subsidy amounts increases the time to adoption by about one month (column 2), or by 9.3% (column 4). These results are consistent with prior estimates that showed that subsidy eligibility increases time to discharge (as in Tables 6 and 7).

The difference in the IV and OLS coefficients suggests that the OLS coefficient is negatively biased. As mentioned previously, we might expect this result if more aggressive case

[18] As a back-of-the-envelope calculation, we know from Table 5 that rates of adoption for foster children increase by 20% when the child is subsidy eligible. Thus, a $110 increase in the expected subsidy amount (from Table 4) , which is predicted to decrease the fraction adopted by non-relatives from 0.176 to 0.146, would have a negligible impact on the *number* of children adopted by non-relatives (-0.5%).

workers award higher subsidies and have lower times to adoption. Also, the local average treatment effect is for individuals whose time to adoption is affected by the eligibility status of the child. These adoptive parents may be waiting for the child to become subsidy eligible (see Appendix Table 10).

The reduced form and IV results for the adoption data indicate that the older relatives (such as grandmothers) are most responsive to the availability of adoption subsidies, and that higher subsidies increase the time to adoption. These results were qualitatively different from the OLS results, suggesting that OLS-based evaluations of the subsidy could potentially suffer from large omitted variable bias.

VI. Conclusion

Since the introduction of the AACWA in 1980, federal and state spending on adoption subsidies has increased dramatically, due largely to the rise in the number of eligible children. As a policy matter, it is important to know whether this large government program is having any impact on children in child welfare services. For policy makers, the results are particularly timely given recent increases in both the scope and level of funding for the program under the Fostering Connections to Success and Increasing Adoptions Act of 2008 and the 2008 American Recovery and Reinvestment Act.

In this paper, I use variation in states' definition of special needs by age to identify the effect of adoption subsidies on adoption outcomes. Conditional on age, I show that being eligible for special needs designation is positively correlated with subsidy receipt and amount; expected subsidy amounts are $110 higher for eligible children. Reduced form estimates of the effect of subsidy eligibility on the probability of adoption suggest that among children

discharged from foster care, eligibility is associated with a greater likelihood of adoption. I also estimate a hazard model, and the results suggest that the hazard of discharge from foster care is increased for children who would have had lengthy stays in care. These findings indicate that the adoption subsidy program has had some success in achieving its goals of promoting adoption and reducing time spent in foster care. Results using adoption data show that eligibility and increased expected subsidy amounts increase the likelihood that a child is adopted by an older relative such as a grandparent, and increase the average time to adoption. OLS and IV produce qualitatively different results, suggesting that previous OLS-based estimates may suffer from omitted variable bias.

There is reason to believe that the success of the adoption subsidy program will produce beneficial outcomes for these at-risk children. Permanent placements have been shown to be more successful when placement occurs at an earlier age (Lahti 1982). Using measures such as criminality, adoption has been shown to result in better outcomes than reunification, which in turn produces better outcomes than long term stays in foster care (Taussig, Clyman, and Landsverk 2001; Doyle 2008). It has also been argued that funding adoption subsidies is more cost-effective than funding long-term stays in foster care, given the associated costs of monitoring and related care for foster placements (Barth 1993). Hansen (2007b) argues that each additional dollar spent on the adoption of a child from foster care produces about three dollars in benefits. A remaining question, however, is whether the increase in the likelihood of adoption by an older relative is good news or not, since it is not known whether grandparents are better (or worse) caretakers of their grandchildren than other adoptive or foster parents.[19]

[19] Esther Duflo (2003) finds that cash transfers to grandmothers in South Africa resulted in improvements in the health of their granddaughters. However, research has documented strong intergenerational transmission of abusive and neglectful parenting behaviors (Oliver 1993).

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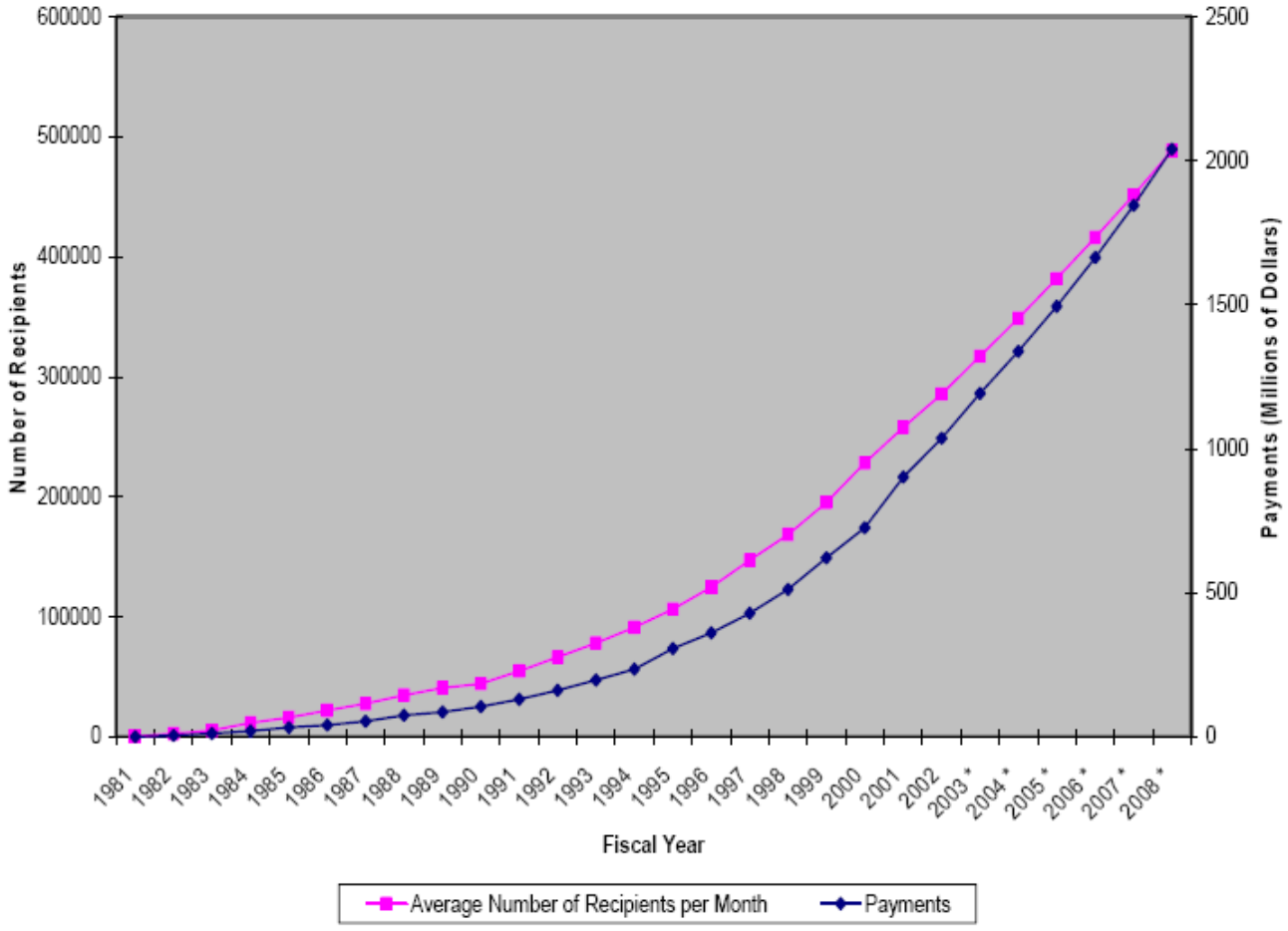
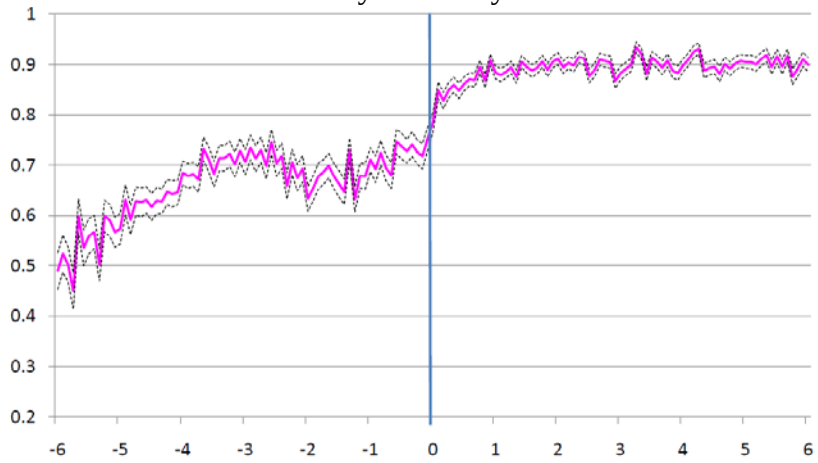
Figure 1: Title IV-E Adoption Assistance Payments, Federal Funding to States, 1982-2008*



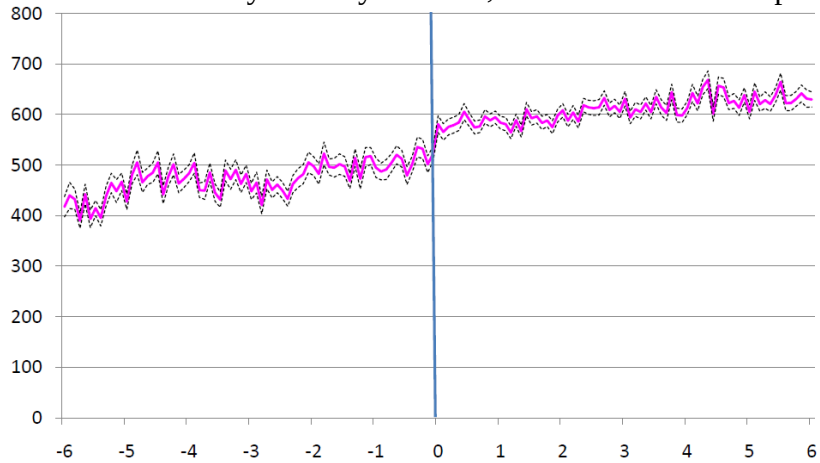
* Estimate. Source: U.S. House of Representatives, Committee on Ways and Means, Green Book, 1994, 1996, 2004.

Figure 2: Effect of Age Relative to State Cutoff on Monthly Subsidies

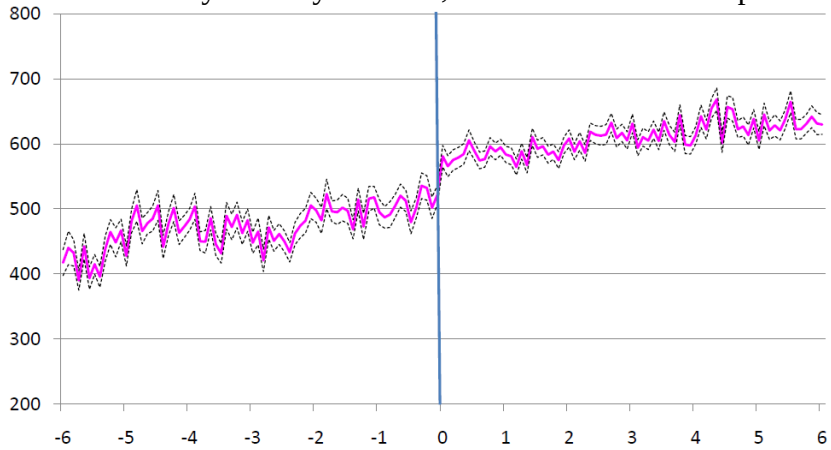
A. Probability a Subsidy is Received



B. Monthly Subsidy Amount, Conditional on Receipt

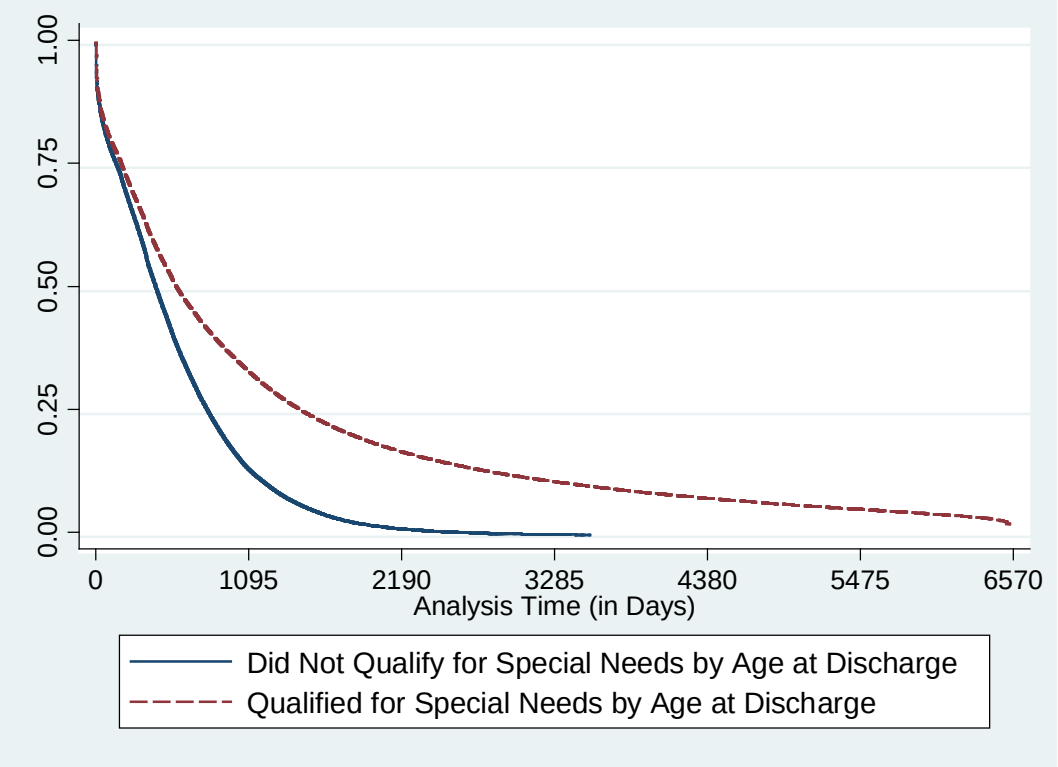


C. Monthly Subsidy Amount, Entire Restricted Sample



Source: Adoption Files, 2000-2006. The horizontal axis is age in years, relative to state cutoff; the dotted lines give a 95% confidence interval. The sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were designated special needs for a reason other than age (race, sibling group, medical condition, or other).

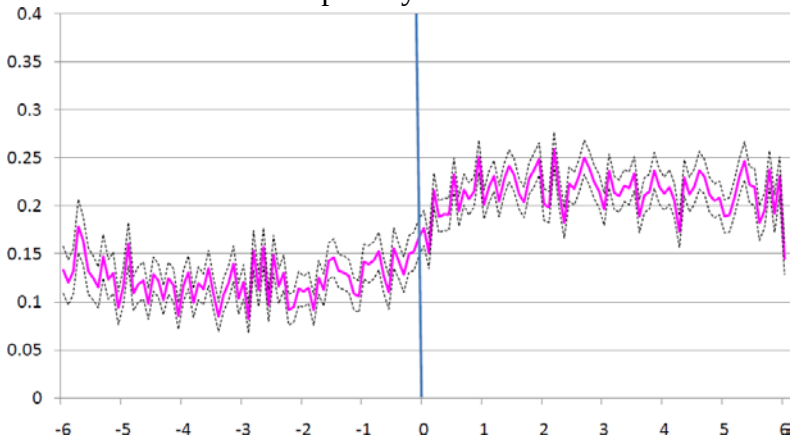
Figure 3: Kaplan-Meier Survival Estimate: Discharge from Foster Care



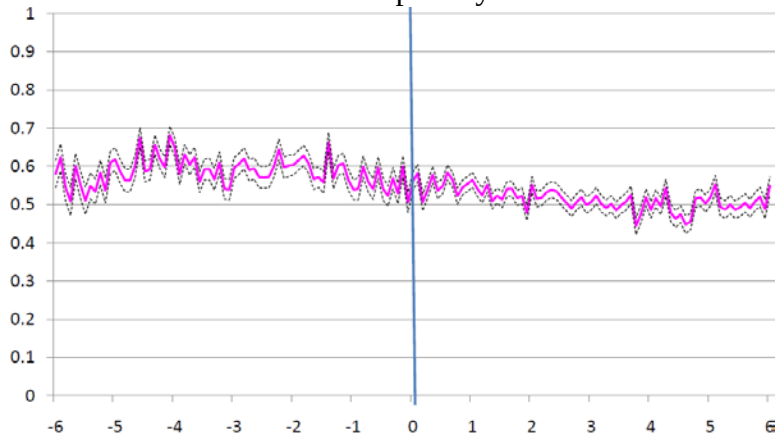
Source: AFCARS Foster Care Files, 2000-2006. Each observation is a spell in foster care; time to discharge is defined as the number of days between the latest removal from the home and the date of discharge. The sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were emancipated, transferred, or who ran away or died while in foster care.

Figure 4: Effect of Age Relative to State Cutoff on Type of Adoptive Family

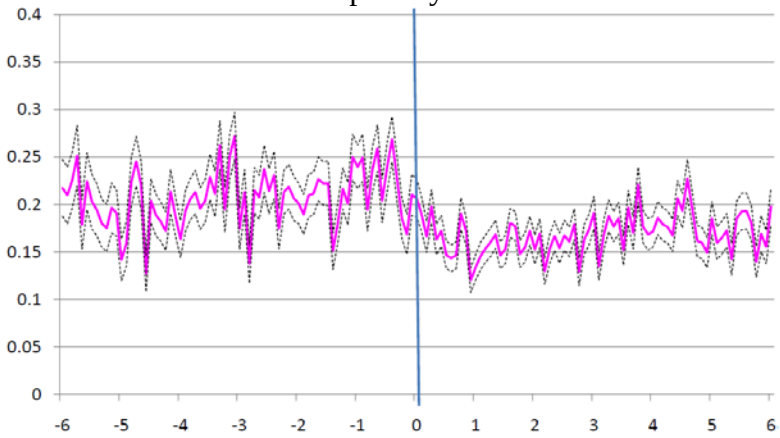
A. Fraction Adopted by an Older Relative



B. Fraction Adopted by a Foster Parent



C. Fraction Adopted by a Non-Relative



Source: Adoption Files, 2000-2006. The horizontal axis is age in years, relative to state cutoff; the dotted lines give a 95% confidence interval. An older relative is defined as a relative other than a step-parent who is at least 35 years older than the child. The sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted are omitted, as are children who were designated special needs for a reason other than age (race, sibling group, medical condition, or other).

Table 1: Characteristics of Children in Foster Care, AFCARS 2000-2006

	Full Sample		Restricted Sample	
Independent Variable	Mean	Std. Dev.	Mean	Std. Dev.
Age	9.11	5.53	8.89	5.48
Male	0.5157	0.4998	0.5150	0.4998
Medical Condition	0.1988	0.3991	0.2015	0.4011
Black	0.3255	0.4686	0.3168	0.4652
Hispanic	0.1629	0.3693	0.1687	0.8745
Removed for Abuse	0.2171	0.4123	0.2293	0.4204
Removed for Neglect	0.5164	0.4997	0.5120	0.4999
Receiving Foster Care Subsidy	0.5614	0.4962	0.5186	0.4997
Amount of Foster Care Payment, if Receiving	$1,239.13	$1,530.17	$1,146.61	$1,411.60
Eligible for Special Needs Status by Age	0.6750	0.4684	0.6705	0.4700
Observations	2,523,695		1,826,264	

Source: AFCARS Foster Care Files, 2000-2006. The full sample is restricted to children under 18. The restricted sample includes only those children who will be used in the regression analysis. Thus, children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were emancipated or who ran away or died while in foster care.

Table 2: Characteristics of Adopted Children, by Subsidy Receipt, AFCARS 2000-2006

	Full Sample				Restricted Sample			
	Without Subsidy		With Subsidy		Without Subsidy		With Subsidy	
Independent Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Monthly Subsidy Amount	-	-	571.95	418.98	-	-	603.73	321.18
Qualifies for Special Needs Status by Age	0.4294	0.4950	0.5653	0.4957	0.4132	0.4924	0.7713	0.4200
Designated Special Needs	0.5497	0.4975	0.8752	0.3305	0.2258	0.4181	0.6459	0.4783
Age at Adoption	5.68	4.26	6.82	4.17	5.46	4.26	8.04	4.21
Age Parental Rights Terminated	5.29	3.91	6.32	3.92	5.12	3.94	7.41	4.01
Male	0.4976	0.5000	0.5037	0.5000	0.4918	0.4999	0.4940	0.5000
Medical Condition	0.2197	0.4140	0.2871	0.4524	0.0517	0.2213	0.0646	0.2458
Black	0.3208	0.4668	0.3797	0.4853	0.2456	0.4305	0.3280	0.4695
Hispanic	0.1408	0.3478	0.1638	0.3701	0.1506	0.3577	0.1619	0.3684
Time to Finalization, in Days	417.98	411.28	470.59	437.55	403.05	381.17	522.05	454.56
Adopted By:								
Foster Parent	0.5526	0.4972	0.6053	0.4888	0.5359	0.4987	0.5337	0.4989
Older Relative	0.1285	0.3346	0.1776	0.3822	0.1303	0.3366	0.1982	0.3987
Non-Relative	0.2095	0.4070	0.1520	0.3590	0.2333	0.4229	0.1609	0.3675
Observations	41,667		274,188		14,677		71,479	

Source: AFCARS Adoption Files, 2000-2006. The full sample is restricted to children under 18 who were adopted from the public welfare agency. The restricted sample includes only those children who will be used in the regression analysis. Thus, children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were designated special needs for a reason other than age. Time to finalization is the time, in days, from the termination of parental rights to adoption finalization. An older relative is defined as a relative who is at least 35 years older than the child. Step-parents and other relatives are an omitted category.

Table 3: State Cutoffs for Special Needs Designation by Age

State	Minimum Age for Special Needs Designation	Public Agency Adoptions per 1,000 Births	State	Minimum Age for Special Needs Designation	Public Agency Adoptions per 1,000 Births
Alabama	8	5.00	Nebraska	8	13.49
Alaska	8	21.02	Nevada	6	8.95
Arizona	6	10.22	New Hampshire	6	7.86
California	3	12.58	New Jersey	10	8.47
Colorado	7	12.78	New Mexico	5	10.67
Connecticut	8	9.79	North Dakota	7	16.66
Delaware	8	8.83	Ohio	6	14.34
District of Columb	2	35.86	Oklahoma	8	20.89
Florida	8	11.62	Oregon	8	21.50
Illinois	1	14.07	Pennsylvania	5	12.97
Indiana	2	11.43	Rhode Island	12	19.71
Iowa	8	23.71	South Carolina	10	6.40
Louisiana	Boys: 11; Girls: 12	7.33	Tennessee	9	10.63
Maine	5	25.20	Texas	6	6.91
Maryland	6	9.41	Utah	5	7.02
Michigan	3	21.33	Virginia	6	4.81
Mississippi	6	5.71	Washington	6	14.85
Missouri	5	17.09	Wisconsin	10	13.55
Montana	6	21.12	Wyoming	6	8.22

Age minimums are from the North American Council on Adoptable Children, and were confirmed with visits to state child welfare web sites and calls to state agencies. In some states, the minimum age varies by race; this information is omitted in the table for brevity but is taken into account in the estimation. Thirteen states are omitted due to incomplete reporting or because they do not have a strict age cutoff. Number of births taken from Center for Disease Control National Vital Statistics Reports; number of public agency adoptions is from the Child Welfare League of America, National Data Analysis System.

Table 4: Effect of Special Needs by Age Designation on Subsidies

	Dependent Variable			
Independent Variable	=1 if Subsidy Received	=1 if Received Federal Funds	Subsidy Amount in $100s (If Received)	Subsidy Amount in $100s (Full Sample)
Qualifies for Special	0.1193**	0.1006**	0.6169**	1.1040**
Needs Status by Age	(0.0368)	(0.0416)	(0.3025)	(0.2391)
Male	0.0013	0.0074	0.2867**	0.2499**
	(0.0032)	(0.0056)	(0.0485)	(0.0443)
Medical Condition	0.0441	0.0639	-0.7469**	-0.3139
	(0.0287)	(0.0389)	(0.3195)	(0.2827)
Hispanic	0.0146	0.0690**	0.0182	0.0732
	(0.0257)	(0.0218)	(0.1894)	(0.2066)
Black	0.0329	0.1059**	0.2838	0.4489*
	(0.0213)	(0.0224)	(0.2236)	(0.2586)
Other	-0.0341	-0.0465	-0.4969	-0.6163**
	(0.0441)	(0.0278)	(0.3624)	(0.2443)
Dep. Variable Mean	0.8291	0.6466	5.9844	4.9617
Observations	80,086	80,079	66,400	80,086
R^2	0.1675	0.1236	0.1805	0.2220

**, * denote significance at the 5% and 10% levels, respectively. Each column is a separate OLS regression that includes a quartic in age, controls for region, the log of state per capita income, and year fixed effects. Standard errors are clustered at the state level and are in parenthesis. Observations are from AFCARS Adoption Files, 2000-2006, and the sample is restricted to children under 18 who were adopted from the public welfare agency. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were designated special needs for a reason other than age (race, sibling group, medical condition, or other).

Table 5: Effect of Eligibility for Special Needs by Age Designation on Probability of Adoption, Among Children Discharged from Foster Care

	Dependent Variable = 1 if Discharge Reason is:				
Independent Variable	Adopted	In the Care of a Relative	Reunified with Parents	Guardianship	Transferred to Another Agency
Qualifies for Special	0.0405*	-0.0226	-0.0073	-0.0012	-0.0097**
Needs Status by Age	(0.0229)	(0.0176)	(0.0270)	(0.0054)	(0.0047)
Male	-0.0112**	-0.0069**	0.0104**	-0.0057**	0.0108**
	(0.0016)	(0.0024)	(0.0045)	(0.0007)	(0.0026)
Medical Condition	0.1608**	-0.0279**	-0.1315**	-0.0080**	0.0059*
	(0.0165)	(0.0095)	(0.0129)	(0.0030)	(0.0030)
Hispanic	0.0056	-0.0089	0.0027	-0.0029	-0.0011
	(0.0093)	(0.0059)	(0.0101)	(0.0030)	(0.0019)
Black	0.0195**	0.0224**	-0.0701**	0.0128**	0.0092**
	(0.0080)	(0.0098)	(0.0078)	(0.0046)	(0.0037)
Other	-0.0294*	-0.0169	0.0216	0.0017	0.0201**
	(0.0157)	(0.0147)	(0.0132)	(0.0042)	(0.0085)
Dependent Variable Mean	0.1984	0.1148	0.6138	0.0493	0.0236
R^2	0.0868	0.0748	0.0511	0.0103	0.0324

**, * denote significance at the 5% and 10% levels, respectively. Each column is a separate OLS regression that includes a quartic in age, controls for region, the log of state per capita income, and year fixed effects. Standard errors are clustered at the state level and are in parenthesis. Observations are from AFCARS Foster Care Files, 2000-2006, and the sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were emancipated or who ran away or died while in foster care. There are 1,165,197 observations in each regression.

Table 6: Hazard Model Estimates of the Effect of Subsidy Eligibility on Probability of Discharge from Foster Care

		Discharged to:		
Independent Variable	All Foster Children	Adoptive Home	Reunified with Parents	Relative/ Guardianship
Qualifies for Special	0.0498	-0.2995**	-0.0615	0.0960
Needs Status by Age	(0.0604)	(0.0783)	(0.0497)	(0.0666)
Male	-0.0337**	-0.0102	-0.0531**	-0.0103*
	(0.0100)	(0.0064)	(0.0099)	(0.0057)
Medical Condition	-0.4579**	-0.1914**	-0.3469**	-0.2930**
	(0.0325)	(0.0324)	(0.0295)	(0.0451)
Hispanic	0.0233	0.0181	-0.0450	0.0167
	(0.0367)	(0.0702)	(0.0421)	(0.0246)
Black	-0.2582**	-0.4770**	-0.1610**	-0.1722**
	(0.0439)	(0.0344)	(0.0328)	(0.0316)
Other	-0.0125	0.0004	0.0489	0.0122
	(0.1519)	(0.0347)	(0.0449)	(0.0641)
Mean Days in Foster Care	587.18	1,164.71	322.76	364.00
Observations	1,699,391	233,087	716,871	133,867

** denotes significance at the 5% level. Results are coefficients from a hazard model with a Weibull distribution. Time to discharge is the number of days between the latest removal from the home and the date of discharge. Each column is a separate regression that includes a quartic in age, controls for region, the log of state per capita income, and year fixed effects. Standard errors are clustered at the state level and are in parenthesis. Observations are from AFCARS Foster Care Files, 2000-2006, and the sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were emancipated or who ran away or died while in foster care.

Table 7: Effect of Eligibility for Special Needs by Age Designation on Adoption Outcomes

	Adopted by:			
Independent Variable	Older Relative	Foster Parent	Non-Relative	ln(Days to Adoption)
Qualifies for Special	0.0517**	-0.0046	-0.0309	0.1020**
Needs Status by Age	(0.0238)	(0.0264)	(0.0264)	(0.0481)
Male	-0.0053**	0.0024	0.0091**	0.0408**
	(0.0025)	(0.0058)	(0.0031)	(0.0102)
Medical Condition	-0.0733**	0.1021**	-0.0510	0.1597**
	(0.0166)	(0.0433)	(0.0390)	(0.0773)
Hispanic	0.0476**	-0.0687**	-0.0046	0.1251**
	(0.0140)	(0.0175)	(0.0168)	(0.0251)
Black	0.0357**	-0.0621**	0.0107	0.2405**
	(0.0116)	(0.0242)	(0.0222)	(0.0530)
Other	0.0138	-0.0322	0.0140	0.1208**
	(0.0221)	(0.0197)	(0.0298)	(0.0464)
Dep. Variable Mean	0.1984	0.5288	0.1758	5.8998
Observations	78,772	78,772	78,772	78,856
R^2	0.0664	0.0196	0.1029	0.1629

**, * denote significance at the 5% and 10% levels, respectively. Each column is a separate OLS regression that includes a quartic in age, controls for region, the log of state per capita income, and year fixed effects. Standard errors are clustered at the state level and are in parenthesis. In the first three columns, the dependent variable is equal to one if the child's adoptive parent was in that category. An older relative is defined as a relative who is at least 35 years older than the child. Step-parents and other relatives are an omitted category. Days to adoption is defined as the number of days between the termination of parental rights and the finalization of the adoption. Observations are from AFCARS Adoption Files, 2000-2006, and the sample is restricted to children under 18 who were adopted from the public welfare agency. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted are omitted, as are children who were designated special needs for a reason other than age (race, sibling group, medical condition, or other).

Table 8: Effect of Subsidy Amount on Who Adopts: OLS and IV Estimates

	Older Relative		Foster Parent		Non-Relative	
Independent Variable	OLS	IV	OLS	IV	OLS	IV
Subsidy Amount,	-0.0058*	0.0453**	0.0125**	-0.0041	0.0013	-0.0271
(in $100s)	(0.0030)	(0.0216)	(0.0049)	(0.0230)	(0.0034)	(0.0235)
Male	-0.0038	-0.0168**	-0.0007	0.0035	0.0087**	0.0160**
	(0.0024)	(0.0058)	(0.0052)	(0.0082)	(0.0032)	(0.0063)
Medical Condition	-0.0731**	-0.0593**	0.1053**	0.1008**	-0.0517	-0.0594
	(0.0176)	(0.0195)	(0.0437)	(0.0422)	(0.0391)	(0.0430)
Hispanic	0.0503**	0.0445**	-0.0703**	-0.0684**	-0.0060	-0.0027
	(0.0143)	(0.0187)	(0.0171)	(0.0176)	(0.0168)	(0.0181)
Black	0.0434**	0.0159	-0.0692**	-0.0603**	0.0073	0.0225
	(0.0121)	(0.0207)	(0.0235)	(0.0264)	(0.0208)	(0.0301)
Other	0.0153	0.0416	-0.0262	-0.0347*	0.0119	-0.0027
	(0.0205)	(0.0263)	(0.0215)	(0.0203)	(0.0295)	(0.0311)
χ^2 for Hausman Test	110.46 [p=0.0000]		8.33 [p=0.9733]		43.30 [p=0.0007]	
Dep. Variable Mean	0.1984		0.5288		0.1758	

**, * denote significance at the 5% and 10% levels, respectively. Each column is a separate regression that includes a quartic in age, controls for region, the log of state per capita income, and year fixed effects. Standard errors are clustered at the state level and are in parenthesis. In each case, the dependent variable is equal to one if the adoptive parent was in that category. For IV regressions, the instrument is a dummy indicating that the child is eligible for special needs by age designation. An older relative is defined as a relative who is at least 35 years older than the child. Step-parents and other relatives are an omitted category. The chi-squared statistic is for a Hausman test of the null hypothesis that the coefficients of the OLS and IV models are the same. Observations are from AFCARS Adoption Files, 2000-2006, and the sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were designated special needs for a reason other than age (race, sibling group, medical condition, or other), leaving 78,772 observations.

Table 9: Effect of Subsidy Amount on Time to Adoption: OLS and IV Estimates

	Days to Adoption		ln(Days to Adoption)	
Independent Variable	OLS	IV	OLS	IV
Subsidy Amount,	5.2702**	28.4396**	0.0088**	0.0933**
(in $100s)	(0.4469)	(4.9797)	(0.0009)	(0.0102)
Male	26.2413**	20.4088**	0.0388**	0.0174**
	(2.9101)	(3.2111)	(0.0057)	(0.0065)
Medical Condition	80.1648**	86.5286**	0.1658**	0.1886**
	(6.3891)	(6.6367)	(0.0124)	(0.0134)
Hispanic	59.7548**	56.9960**	0.1283**	0.1194**
	(4.3490)	(4.4606)	(0.0085)	(0.0090)
Black	156.7317**	144.126**	0.2446**	0.2003**
	(3.3381)	(4.3354)	(0.0065)	(0.0087)
Other	45.3295**	57.3918**	0.1343**	0.1782**
	(6.6463)	(7.2333)	(0.0130)	(0.0147)
χ^2 for Hausman Test	21.82 [p=0.2399]		69.06 [p=0.0000]	
Dep. Variable Mean	504.88		5.9090	
Observations	80,086		78,856	

**, * denote significance at the 5% and 10% levels, respectively. Each column is a separate regression that includes a quartic in age, controls for region, the log of state per capita income, and year fixed effects. Standard errors are clustered at the state level and are in parenthesis. For IV regressions, the instrument is a dummy indicating that the child is eligible for special needs by age designation. Days to adoption is defined as the number of days between termination of parental rights and adoption finalization. The chi-squared statistic is for a Hausman test of the null hypothesis that the coefficients of the OLS and IV models are the same. Observations are from AFCARS Adoption Files, 2000-2006, and the sample is restricted to children under 18. Children in states with incomplete reporting, that do not have a strict cutoff for special needs designation by age, or with a cutoff below two or over 10 are omitted, as are children who were designated special needs for a reason other than age (race, sibling group, medical condition, or other).

Appendix Table 10: Number of Adoptions per Day, Relative to State Age Minimums for Special Needs Designation

	Number of Adoptions Per Day		
Age Relative to Cutoff:	[1]	[2]	[3]
After Cutoff	2.3249**	2.1173**	1.7240**
	(0.5331)	(0.5680)	(0.6093)
Month Before		-1.6487	-1.7908
		(1.2921)	(1.2920)
Two Months Before		-0.8117	-1.0813
		(1.0323)	(1.0422)
Three Months Before		-0.4212	-0.6840
		(1.2099)	(1.2197)
Six Months Before			-1.1004
			(0.7355)

** denotes significance at the 5% level. Data include adopted children from the AFCARS Foster Care Files, 2000-2006, and were collapsed to the day of the child's age at discharge to an adoptive home, relative to the state age cutoff. The sample was limited to states with a cutoff below five or over eight, and to children discharged five years before or eight years after the state cutoff, leaving 4,744 observations. Each column is a separate OLS regression that includes a quartic in mean age, controls for mean race, medical condition, region, log of state per capita income, and year fixed effects. Robust standard errors are in parenthesis. The dependent variable is the number of adoptions that occurred on the day relative to the cutoff, and the mean number of adoptions per day is 23.63.