School Enrollment Impacts of Non-traditional Household Structure*

Richard Akresh
Department of Economics
University of Illinois at Urbana-Champaign

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Abstract

Children growing up away from their biological parents may experience lower human capital investment. This paper measures the impact of child fostering on school enrollment using fixed effects regressions to address the endogeneity of fostering. Data collection by the author involved tracking and interviewing the sending and receiving household participating in each fostering exchange, allowing a comparison of foster children with their non-fostered biological siblings. Young foster children are 17.5 and 17.9 percent more likely to be enrolled after fostering than their host and biological siblings, respectively. This schooling improvement translates into a long-run improvement in educational and occupational attainment.

Keywords: Human Capital Investment, Household Structure, Child Fostering
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Contact Information: University of Illinois at Urbana-Champaign, Department of Economics, 1206 S. Sixth Street, Wohlers Hall, Room 470E, Champaign, IL 61820. Email: akresh@uiuc.edu

"The committee recommends that [Burkina Faso] urgently take all measures necessary in order to put a stop to the practice of 'fostering' and traditional adoption." [United Nations, Committee on the Rights of the Child, 2002]

"The majority of these [foster and informally adopted] children, mostly girls, are made to work around the clock. They have little or no time to play or interact with other children. They are denied education and are subjected to hunger, even though in most cases, they prepare the meals. These children, who are abused, suffer emotional and psychological trauma. Statistics are difficult to come by because of the informal nature of these activities, but it is evident that many children now find themselves in employment more than ever." [Ghanaian journalist, News From Africa-Ghana, 2003]

1 Introduction

Children comprise the majority of the population in many African countries and represent the region's future. If they lack the skills and knowledge needed to lead productive lives, Africa's economic development might be limited and its ability to reduce poverty jeopardized [World Bank, 2003]. The above two quotes succinctly summarize the prevailing view about child fostering and the belief by many international development organizations as well as academic researchers that this widespread institution, in which parents send their biological children to live with another family, has negative consequences for that child's human capital investment and welfare outcomes [Bledsoe and Brandon, 1989; Haddad and Hoddinott, 1994; Kielland, 1999; UNICEF, 1999; Case, Lin, and McLanahan, 2000; Bishai et al., 2003; Fafchamps and Wahba, 2004].

A child living away from his biological parents might be more likely to work, less likely to attend school, or might experience psychological problems due to differential treatment by the host family. However, it is also possible these children could benefit both in the short and long-run from the fostering experience by gaining access to schools, receiving better nutrition, or being exposed to an expanded employment or insurance social network. Households foster children for different reasons including the demand for child labor, in response to exogenous income shocks, human capital investment in the child, parent death, and high quality social networks [Goody, 1982; Isiugo-

Abanihe, 1985; Bledsoe and Isiugo-Abanihe, 1989; Page, 1989; Butcher, 1993; Ainsworth, 1996; Grimard, 2000; Frankenberg, Smith, and Thomas, 2003; Serra, 2003; Zimmerman, 2003; Akresh, 2004; Cichello, 2004; Edmonds, Mammen, and Miller, 2005]. Regardless of whether the fostering decision is due to a choice the parents made or an unexpected circumstance, measuring the impact of fostering on the foster child, his biological siblings who remained behind, and his host siblings in the receiving household, is a relevant empirical exercise given the prevailing assumption that a child is better off living with his biological parents.

This paper uses data collected by the author during eighteen months of fieldwork in Burkina Faso to measure the impact of child fostering on school enrollment.[1] Previous researchers have used cross-sectional data to evaluate the effect of children not residing with their biological parents, but cross-sectional data can only compare the current enrollment status for foster children with that of their non-fostered host family siblings [Case, Lin, McLanahan, 2000; Zimmerman, 2003]. Their results will be biased if there is some unobservable factor omitted from the analysis that is correlated with both fostering and school enrollment.

The data include three years of retrospective information which I use to estimate a fixed effects regression that measures the effect of fostering on school enrollment and deals with the potential biases arising from using cross-sectional data. While cross-sectional results suggest that only 17.8 percent of foster children are enrolled compared to 32.1 percent of host family siblings (Table 1), controlling for the child's enrollment status prior to the fostering episode indicates that, when compared to the host siblings they live with, young foster children experience a 17.5 percent increase in enrollment after moving away from their biological parents. The fixed effects approach shows that not controlling for omitted variables in measuring the welfare impacts of child fostering can

[1] According to these data, approximately 27 percent of households either sent or received a foster child between 1998 and 2000, and these children spent, on average, 2.75 years living away from their parents.

yield seriously misleading results.

During the data collection, I located the sending and receiving household participating in each fostering exchange. This research methodology makes these data particularly appropriate for understanding the impact of fostering, not only on the foster child and the host siblings, but also on the biological siblings who stayed behind. The results show that after being fostered, young foster children are, on average, 17.9 percent more likely to be enrolled when compared to their non-fostered biological siblings. However, these results mask substantial heterogeneity depending on the reason for the fostering and where the sending and receiving households live.[2] Children who, according to their parents, were fostered for schooling reasons are significantly more likely to experience a positive welfare outcome in terms of school enrollment compared to children fostered for child labor reasons.

The fixed effects regressions in this analysis control for household level unobservables and provide evidence that after a household selects which child to send, for young children there is a strong positive impact of the fostering on that child's enrollment, relative to both the child's host and biological siblings. However, the biological parents are probably selecting the child with the best chance to succeed in the host household. The decision of which child the biological parents foster may be based on factors that are unobservable to the researcher but which clearly influence how well the child does in the host family. To control for these factors, I estimate a child fixed effects regression that measures the impact of fostering on that child's educational enrollment, conditional on the child's unobserved attributes. The results suggest that young foster children after leaving their parents are neither worse nor better off relative to their host and biological siblings. Conditional on the child's type (via the child fixed effects regression), young children experience no

[2] Evidence of this welfare outcome heterogeneity is also seen in rural Mali where children who were requested by the receiving family had better nutritional outcomes than children sent due to crisis fostering [Castle, 1995].

school enrollment impact following the fostering, as opposed to a positive enrollment impact when the biological parents have knowledge about these unobservable factors and make an optimization decision about which child to send out.

The data allow me to compare these three groups of children (host siblings, biological siblings, and foster children) with children who live in households that never fostered a child. In both household and child fixed effects specifications, young foster children are better off after leaving their parents compared to children from non-fostering households. In addition, in the child fixed effects regressions, young host and biological siblings are better off after the fostering exchange compared to the non-fostering household's children. The results provide evidence that the institution of child fostering and the ability of a household to send out a child when it needs to can lead to a Pareto improvement in school enrollment for all young children involved: the host siblings in the receiving family, the biological siblings remaining behind in the sending family, and the foster child. This Pareto improvement is the major finding of this paper, and it appears to stem from the ability of African households to ease the constraint of a purely biological notion of a household.[3]

In addition to measuring short-run welfare improvements in schooling, I can also evaluate the long-run impacts of a fostering experience. I find a strong positive correlation between current wealth (measured as current assets or income) and the survey respondent having been fostered as a child, even after controlling for observable characteristics of the respondent and the respondent's biological parents. Stronger evidence of a positive long-run return to fostering is provided by household fixed effects regressions comparing brothers and sisters from the same family and controlling for unobservable factors that might be correlated with fostering and current wealth. Those sib-

[3]There is a growing literature trying to measure the impact of orphanage on children's school enrollment [Ainsworth, Beegle and Koda, 2002; Case, Paxson, Ableidinger, 2004; Gertler, Levine, and Ames, 2004; Yamano and Jayne, 2004; Evans and Miguel, 2006; Yamano, Shimamura, and Sserunkuuma, 2006], and while parent death is one of several reasons why children are fostered, the data used in this paper contain only 23 children who were fostered for that reason. Therefore, the conclusions from this paper may not generalize to the case of orphaned children.

lings, from a given family, who were fostered as children are more likely to be educated and have occupations with higher earnings such as a businessman, government employee, or teacher and are less likely to be a farmer and live in a rural village. These results are important for understanding why a household adjusts its structure and the long and short-run implications of that decision.

The remainder of the paper is organized as follows. Section 2 describes the empirical setting for the data collection. In Section 3, I describe the empirical identification strategy. Section 4 presents the empirical results and Section 5 concludes.

2 Data and Empirical Setting

2.1 Empirical Setting

The data were collected in Bazega province in central Burkina Faso, located approximately fifty miles from the capital, Ouagadougou.[4] Households in this region consist predominantly of subsistence farmers growing millet, sorghum, and groundnuts and have an average annual income of $183 (based on an average foreign exchange rate from 1998 to 2000 of $1 = 641 FCFA). On average, these households have 10.6 members consisting of a household head, 1.5 wives, 3.6 children under age 18, 3.2 children over age 18, and 1.3 members that might include the household head's mother, brothers, sisters, grandchildren, distant relatives, and individuals with no direct relationship.

The fieldwork component of the project improved on previous studies in several ways. First, I adopted a methodology that involved locating and interviewing the sending and receiving household of each fostering exchange. For example, if a household interviewed in the initial sample had sent a child to another family, then the receiving household was found and interviewed in the tracking phase of the survey. Similarly, if a household interviewed in the initial sample had received a child,

[4] More detailed information about the fieldwork, including the survey instruments, field enumerator training manuals, and project reports can be found on the website: https://netfiles.uiuc.edu/akresh/www

then the biological parents of the child (sending household) were located and interviewed. This is the first time that both the sending and receiving household from a given fostering exchange had been tracked and interviewed, and it enables a better understanding of the impact of the fostering not only on the host siblings and the foster child (which is possible with some existing datasets), but also on the foster child's biological siblings who stayed behind.

Second, I asked retrospective questions covering the years 1998 to 2000 concerning the child's school enrollment history. This information allows me to compare enrollment before and after the fostering exchange and to measure more accurately the impact of fostering. Most datasets collected in Africa do not have school enrollment information covering a three year time period and researchers must instead rely on cross-sectional comparisons using current enrollment. Third, I collected information from the respondents about the childhood fostering status and occupational and educational attainment of their siblings in order to measure the long-term impact of fostering while controlling for household level unobservables.

The survey consisted of two distinct phases. The initial phase entailed interviews with 606 household heads and their 812 wives in fifteen randomly selected villages in Bazega province. In these villages, the unit of analysis for the sampling frame was the compound, with some compounds containing multiple households.[5] Within each compound, an enumerator individually interviewed the head of every household and then separately interviewed all of his wives, if applicable.[6]

The tracking phase of the survey consisted of finding the 316 paired households that had ex-

[5] To increase the number of households in the sample that had fostered children, I adopted a two part sampling frame that included a random sample and a choice-based sample both drawn from a village level census that included information about the fostering status of every household [for more details, see Akresh, 2004b]. The choice-based sample consisted of compounds that had fostered a child between 1998 and 2000. All results in this paper use the entire sample, but results are qualitatively similar when I restrict the observations to just the random sample. Using the population fostering weights from the village level census to adjust the choice-based sample does not significantly alter the results. A total of 383 compounds containing 606 households were selected with approximately sixty percent of the compounds in the random sample.

[6] The particular household definition [described in Akresh, 2004b] that assigned every individual living in the compound to a specific household was implemented to ensure that individuals in the compound who might have been involved in making a fostering decision would be interviewed.

changed a foster child and interviewing the head of each household along with all of his wives using the same survey instrument as the initial phase. I restricted the tracking to those households that had exchanged a foster child between 1998 and 2000 and where the child's age at the time of fostering was between five and fifteen inclusive.

Children under age five were excluded from the tracking for three reasons. First, these children cannot be enrolled in school. Second, researchers studying child fostering in Africa have argued that young children are fostered for different reasons than older children [Vandermeersch, 2002]. In particular, young children are not routinely performing domestic chores and are essentially just consumers. Around age five, children are expected to become economic contributors to the family, undertaking tasks in the household, fields, and marketplace. At this time, a household would become concerned with human capital investment and possibly with offsetting demographic imbalances in the number of its children of a given age and gender. Third, results from this survey confirm that fostering of young children is much less common than older children, showing a significant jump in fostering rates at age six. Approximately one percent of children under age five were fostered between 1998 and 2000, compared to ten percent of children aged five to fifteen.

Children aged sixteen and older were also excluded from the tracking because, at that age, most villagers in rural Burkina Faso would consider them adults. They are physically mature, have passed initiation rites, and females are of an acceptable age for marriage. In addition, for older children, it becomes difficult to disentangle what is child fostering and what is an example of a household splitting off members to form distinct and separate households.

The success of the tracking phase makes these data particularly unique and appropriate for measuring the impact of fostering on school enrollment. Approximately sixty percent of the paired households were located within a twenty-five mile radius of the child's home, twenty-five percent were located in the capital fifty miles away, six percent were scattered across the other provinces

of Burkina Faso about one hundred and fifty miles away, and nine percent were in Côte d'Ivoire approximately eight hundred miles away. There were 316 paired households to be found during the tracking phase, and the field research team located 94.9 percent of them, 300 households in total.[7]

2.2 Data

In addition to the 316 foster children, there were 994 biological siblings who had never been fostered in the sending households and 638 host siblings who had never been fostered in the receiving households. Analyzing the school enrollment rates for these different groups of children in Table 1 shows that foster children and the biological siblings they left behind have similar average enrollment rates (17.8 percent for foster children and 20.2 percent for biological siblings). However, children in the host households have a much higher average enrollment rate of 32.1 percent. Average age is similar across the three groups of children ranging from 9.4 to 10.2 years old, but foster children are more likely to be girls.

Table 2 analyzes children's school enrollment before and after the child is sent away from his biological parents. Many development organizations are concerned that after a child is fostered he will stop attending school, but the data do not confirm this. Only two percent of foster children were no longer enrolled after being sent to the host household despite being enrolled prior to the fostering. This compares with 2.9 percent of host siblings and 2.3 percent of biological siblings who discontinued enrollment after the fostering exchange. Following the fostering, approximately the same percentage of children in each group were newly enrolled students, with rates ranging from 4.8

[7] The sixteen tracked households that were not interviewed included four households (three in the capital and one in Côte d'Ivoire) that were found but refused to be surveyed, four households in the capital in which the child left the village in search of work and had not yet contacted his biological parents to indicate the family with whom he was now living, two households where the parents left children in the village in Burkina Faso and went to work in Côte d'Ivoire but the receiving household did not have information to locate them, and three households (two in Côte d'Ivoire and one in Togo) that had contacted the parents to inform them they were moving towns and would send more contact information once they were settled. Finally, the remaining three cases included issues of disputed paternity, alleged adultery, and confirmed sorcery.

to 4.9 percent. The largest difference between the three groups is the percentage of children who were never enrolled. There are 82.7 percent of foster children and 77.0 percent of biological siblings in this category, but only 58.6 percent of host siblings were never enrolled. I can reject the null hypothesis that the percentage of children in each transition group (never enrolled, discontinued enrollment, newly enrolled, and enrolled both years) is the same across host siblings, biological siblings, and foster children with a likelihood ratio $\chi^2(6)$ test statistic of 54.65 and a corresponding p-value of 0.00. However, the likelihood ratio $\chi^2(3)$ test statistic testing for equality between foster children and biological siblings cannot be rejected with a p-value of 0.26.

3 Empirical Strategy

3.1 Empirical Identification in Previous Research

Several recent empirical papers attempt to measure the school enrollment impact of children living away from their biological parents. Most of these papers use cross-sectional data to compare school enrollment for children living with their biological parents with that of foster children living without their parents. However, current school enrollment is partly a function of that child's school enrollment history. Without controlling for that history prior to the fostering, the researcher will incorrectly measure the fostering impact. Since foster children come from poorer households and it is likely the child's parents could not afford the school fees, these children might not have been enrolled prior to the fostering [Thomas et al., 2004]. As a consequence, if the host family maintains the foster child's pre-fostering enrollment status, in a cross-sectional comparison it will appear that the foster child is worse off compared to non-fostered children. Using cross-sectional data to measure this impact would yield misleading results if there are factors (such as school enrollment history, wealth, or network quality) omitted from the regressions that are correlated with both

fostering and school enrollment.

Lloyd and Blanc [1996] use Demographic and Health Surveys (DHS) from seven countries in sub-Saharan Africa and show that children's school outcomes (measured by current school enrollment and grade four completion) are more influenced by characteristics of the child's extended family network and the household in which the child resides than by characteristics of his biological parents. Zimmerman [2003], using 1993 household survey data from South Africa, finds that the risk for foster children of not attending school is lower than it would have been if the child had stayed with his biological parents. Both studies rely on cross-sectional data which are subject to the aforementioned problems. Overall, some researchers have found similar results to Zimmerman [Eloundou-Enyegue and Shapiro, 2004], while others have found that foster children are less likely to be enrolled and more likely to be working [Kielland, 1999]. Cichello [2004] extends Zimmerman's analysis by incorporating information from a 1998 survey collected on a sub-sample of the households used by Zimmerman. This allows him to construct a school progress measure defined as the number of additional years of schooling attained between 1993 and 1998. He finds there are no positive gains for foster children in terms of school progress, despite higher initial school enrollment in 1993. Despite using the additional 1998 information to develop an improved measure of human capital investment, Cichello is not able to address the endogeneity of fostering.

Related research attempts to measure the school enrollment impact when a child's parent dies. As parent death is one of several reasons why children are fostered, it is informative to understand the empirical estimation strategies employed in that literature. Several papers use cross-sectional data to estimate this impact of being orphaned on enrollment [Ainsworth and Filmer, 2002; Case, Paxson, and Ableidinger, 2004; Gertler, Levine, and Ames, 2004], but the results are subject to potential biases due to omitted variables being correlated with both being orphaned and enrollment. There are two papers that address the endogeneity problem by using the time dimension in a panel

dataset to estimate a child fixed effects regression [Evans and Miguel, 2004; Yamano and Jayne, 2004]. With this estimation strategy the authors are able to control for time-invariant factors, such as wealth and network quality, that might be correlated with both orphanage and school enrollment.

These papers studying orphans differ in that parent death might be unexpected and measuring the schooling impact due to this potentially exogenous event seems straightforward. However, these papers focus on only one of the reasons why a child lives away from his biological parents, and their data do not allow for comparisons with the biological siblings left behind. This paper is able to address the broader question of the impact on children of fostering for potentially endogenous and exogenous reasons. This is possible because the fieldwork design collected data not just on a foster child and his host siblings, but also his left behind biological siblings. The biological siblings are a good comparison group if the fostering endogeneity operates purely at the household level, and thus is differenced out when comparing a foster child with his biological siblings.

3.2 Identification Strategy

In this paper, I employ two main estimation strategies, household and child fixed effects regressions, to address the endogeneity problems regarding the fostering decision discussed in the previous section. The household fixed effects regression, by controlling for household level unobservable factors, measures the impact of fostering on school enrollment, conditional on the household having optimized its decision of which child to send. This contrasts with the child fixed effects regression, which goes further and conditions on a given child's unobserved type.

This is the first time these strategies have been used to address the endogeneity of child fostering and the unobserved factors influencing fostering and school enrollment. If fostering is correlated with household characteristics such as wealth or network quality, which are also important determinants of school enrollment, then failing to control for these factors can yield biased estimates of

the fostering impact on school enrollment. At a minimum, the exogeneity assumptions needed for a cross-sectional ordinary least squares regression appear to be violated because of this correlation. The household fixed effects regression compares the school enrollment for a foster child and the host siblings, within the same household, before and after the fostering exchange, and the household fixed effect captures any time-invariant household characteristics that influence school enrollment.

The identification strategy can be illustrated using a two-by-two difference-in-differences table. Panel A of Table 3a shows average school enrollment rates for young foster boys (aged 5 to 7) and the young host boys (aged 5 to 7) they live with for the year before the fostering and the year after the fostering exchange.[8] Cross-sectional results indicate that young foster boys and young host boys do not have statistically different enrollment rates in the year prior to the fostering. For both young foster boys and young host boys, average enrollment increased after the foster child left his biological parents, but it increased considerably more for the foster children. The difference-in-differences result can be interpreted as the impact of fostering on enrollment under the assumption that, without the fostering episode, the change in enrollment for the two groups would not systematically differ. After the fostering exchange, the change in enrollment for foster children is 45.9 percent higher than that of host siblings.

However, the same improvement is not observed when analyzing young foster girls. In Panel B, cross-sectional results indicate that young foster girls do not have statistically different enrollment rates in the year prior to the fostering compared to the young host girls. Average enrollment increased after the foster girl joined the host family, but the young host girls increase their enrollment more than the foster girls, although the difference-in-differences results is not statistically significant.

[8] I restrict the table to households that fostered in 1999 or 2000 because of the need for enrollment information prior to the fostering exchange. For households fostering a child in 1999, I use 1998 enrollment as pre-fostering enrollment and 1999 enrollment as post-fostering enrollment. For households fostering in 2000, I use 1999 enrollment as pre-fostering enrollment and 2000 enrollment as post-fostering enrollment.

Table 3b presents similar two-by-two difference-in-differences tables, but now all children (boys and girls) and all ages (5 to 15 inclusive) are included in the results. The cross-sectional results in Panel A indicate that foster children, in the year prior to the fostering, are less likely to be enrolled compared with the host siblings they are currently living with. Average enrollment for host siblings is 36.6 percent while only 12.4 percent of foster children are enrolled. These results are consistent with previous research that uses cross-sectional data and examines children of all ages. For both foster children and host siblings, average enrollment increased after the foster child left his biological parents, but it increased more for the foster children. After the fostering exchange, the change in enrollment for foster children is 1.0 percent higher than that of host siblings, a finding which masks the large increase for young foster boys and no increase for young foster girls as seen in Table 3a.

To incorporate all available information, I estimate a household fixed effects regression which is comparable to the difference-in-differences estimator. In the simplest household fixed effects specification (additional age and gender controls are added later), I estimate the following:

$$S_{ijt} = \beta_0 + \gamma_j + \beta_1(EverFostered_{ij} * AfterFostering_{jt}) + \beta_2(EverFostered_{ij}) + \delta_t + \varepsilon_{ijt} \quad (1)$$

where S_{ijt} is the school enrollment status for child i in household j at time t, where household j refers to either the host or biological household, γ_j is the household fixed effect, $EverFostered_{ij} * AfterFostering_{jt}$ indicates for the foster child the years after he is sent away from his biological parents, $EverFostered_{ij}$ indicates if the child is a foster child, δ_t are time dummies intended to capture any secular time effects in school enrollment, and ε_{ijt} is a random, idiosyncratic error term.[9] The coefficient β_1 is the effect of fostering on school enrollment for the foster child compared to

[9] The secular time effects could also be captured by including an $AfterFostering$ main effect, although that is more restrictive than including unrestricted time dummies as in the text. Both approaches yield similar results.

the host siblings in the same household. The household fixed effects specification is identified by variation across children within the same household over time.

Previous research [Akresh, 2004] showed that network quality and household wealth influenced which households decided to foster and these factors, as well as unobservable permanent characteristics, will be captured by the household fixed effects term, γ_j. This research also showed that exogenous, idiosyncratic agricultural shocks influenced the timing of when a household sends out a child. If only exogenous shocks were causing the fostering, then estimating a cross-sectional regression would yield a measure of the causal impact of fostering on schooling. However, fostering and schooling are likely to be jointly determined by other factors such as household wealth, network quality, and unobservable preferences which can be eliminated with the fixed effects specification. The main identification assumption for the estimate of β_1 to be consistent is that, given the household fixed effect, the actual timing of when a household sends a child should be exogenous.

In addition to controlling for unobservables within the household that might be correlated with fostering and school enrollment, a related exercise is to control for a given child's unobserved attributes that might influence both fostering and school enrollment. In the following child fixed effects specification, I measure the impact of fostering on that child's educational enrollment, conditional on the child's unobserved attributes:

$$S_{ijt} = \beta_0 + \alpha_i + \beta_1(EverFostered_{ij} * AfterFostering_{jt}) + \eta_t + \psi_{ijt} \quad (2)$$

where S_{ijt} and $EverFostered_{ij} * AfterFostering_{jt}$ are as previously defined, η_t are time dummies to capture any secular time effects in school enrollment, α_i refers to the child fixed effect, and ψ_{ijt} is a random, idiosyncratic error term.[10] The child fixed effects specification is identified by within

[10] In Equation 2, I do not include the term $EverFostered_{ij}$ because it will be absorbed by the fixed effects.

child variation over time and all time-invariant factors, such as a child's ability or personality, will be captured by the child fixed effect.

While these two estimation strategies (household and child fixed effects) improve measurement of the fostering impact on school enrollment, most panel datasets are only able to compare foster children with their current host siblings and so are not able to fully measure the fostering impact. Even if the foster child is treated poorly and is worse off after leaving his parents relative to his new host siblings, the foster child still might be better off in terms of school enrollment relative to the treatment he would have received if he had stayed with his biological family. It is impossible to measure the "true" counterfactual that would compare the school enrollment change for the foster child if he is sent to a host family with the school enrollment change for the same foster child in the same time period if he had instead remained behind. However, with this dataset, it is possible to compare the school enrollment change for the foster child with the foster child's biological siblings who remained behind. These biological siblings might have more resources available spread among fewer children because the parents have reduced expenses for food, clothing, and health care by sending away a child, but they also might have more labor tasks to complete divided among fewer siblings remaining at home.

In Panel B of Table 3b, I show that biological siblings experienced a 2.5 percent increase in enrollment after the fostering exchange, indicating that on net, they seem to be better off. Young biological siblings (both boys and girls) also experienced an increase in enrollment of 4.5 and 4.9 percent, respectively. This is evidence that using the biological siblings as a comparison group will yield an underestimate for the fostering impact, since this group also experienced increased enrollment. A comparison of biological siblings with children from non-fostering households can provide additional information about any potential improvement the biological siblings experienced.

4 Empirical Results

4.1 Household Fixed Effects Results

In Panel A of Table 4, I estimate the household fixed effects regression from Equation 1 comparing foster children with the host siblings they live with.[11] I separate the children into three age categories (5 to 7, 8 to 11, and 12 to 15) to capture any differential impact of fostering on children of different ages. Column 1 presents the baseline specification in which young foster children are 17.5 percent more likely to be enrolled after being fostered compared to the host siblings, and the coefficient is significant at the 1 percent level.[12] However, young foster children come from households that have 6.2 percent lower enrollment rates, which is consistent with previous results in which receiving households are shown to be better off [Akresh, 2004]. This coefficient on the $EverFostered_{ij}$ variable is not significant but in the regressions for older children it is larger and significant at the 1 percent level. In column 2, I analyze whether the fostering impact varies based on the child's gender by including an interaction of the variable $EverFostered_{ij} * AfterFostering_{jt}$ with a variable indicating if the child is male. Young foster boys are 24.2 percent more likely to be enrolled than young foster girls, and the coefficient is significant at the 10 percent level.

For older children the results are different. Columns 3 and 5 present the baseline regression restricted to children aged 8 to 11 and aged 12 to 15, respectively. The enrollment impact due to the fostering for these older children is no longer statistically significant. Likewise in columns 4 and 6, which include gender interactions, the schooling impact for foster boys does not significantly

[11] All households that fostered a child in 1998, 1999, or 2000 are included in the regressions. In Panel A, there are 638 host siblings and 316 foster children measured over 3 years. I exclude 186 observations in which the child is under age 5 in a given year and 117 observations in which the child is over age 15 in a given year.

[12] In using retrospective information, it is possible respondents might misreport past enrollment status for their children. However, in this rural African setting, in which families value education and where the cash expenses related to enrolling a child in school are extremely high, the chance of systematic misreporting is significantly reduced. Also, traditional measurement error, if present, would bias results towards zero and the significant positive impacts observed for young children would be an underestimate of the true impact of fostering.

differ from that for foster girls. Older foster children come from households that have between 14.2 and 29.4 percent lower enrollment rates than the host households. All the regressions in this table also include year dummies intended to capture secular time trends in school enrollment. These results indicate that for young foster children, especially foster boys, fostering is a strong positive experience in terms of school enrollment, while for older children, the results are smaller and potentially negative.

Panel B of Table 4 presents household fixed effects regressions comparing foster children with their biological siblings and finds similar results in which young foster children benefit the most after the fostering.[13] Column 1 shows that young foster children are 17.9 percent more likely to be enrolled after being fostered compared to their biological siblings who remained behind, and the coefficient is significant at the 1 percent level. Young foster boys are 31.4 percent more likely to be enrolled than young foster girls (column 2), and the coefficient is significant at the 1 percent level. Similar to the regressions with host siblings, comparing older foster children and older biological siblings indicates a reduction in the positive impact of fostering for these children. In fact, foster children aged 8 to 11 experience a significant 10.2 percent reduction in enrollment relative to the biological siblings.[14] However, for children aged 12 to 15, there is a positive but insignificant impact after the fostering relative to the biological siblings. These results provide evidence that the impact of fostering may not be positive for children of all age groups.

I further explore the heterogeneity in observed outcomes for foster children in Table 5 in which I

[13] The dataset in Panel B consists of 994 biological siblings and 316 foster children measured over 3 years. I exclude 298 observations in which the child is under age 5 in a given year and 147 observations in which the child is over age 15 in a given year.

[14] This negative impact is predominantly driven by those foster children sent to live with distant relatives and families that had no direct relationship with the sending family (usually friends or members of the same ethnic group). Results for young foster children show that those who were sent to live with immediate family members (brothers, sisters, and adult children of the respondent) experienced the largest positive impact after the fostering exchange. Sixty-two percent of foster children were sent to live with immediate family members, sixteen percent were sent to live with distant relatives, and twenty-two percent were sent to live with families that had no direct relation to the sending household.

present household fixed effects regressions broken down by the reason for fostering and the location of the sending and receiving households. In Panel A, I compare foster children with their host siblings, and in Panel B, I compare foster children with their biological siblings. Only the coefficient on the term $EverFostered_{ij} * AfterFostering_{jt}$ is presented, although all regressions also include control variables indicating age, gender, year, and if the child was ever fostered.

For each foster child, the head of the biological household answered why the child was sent to live with another family. Based on those responses, if the foster child is sent for schooling reasons, then after being fostered the child is 37.3 and 35.9 percent more likely to be enrolled compared with his host and biological siblings, respectively. This result contrasts with a foster child sent for child labor reasons. These children are 6.1 and 2.7 percent less likely to be enrolled after the fostering compared with their host and biological siblings, respectively, although the result is only significant when compared to the host siblings. Children fostered due to a parent's death are better off compared to the biological siblings left behind, with enrollment 16.4 percent higher after the fostering, but this result is based on only 23 children and is only marginally significant (t-statistic=1.61).

There is evidence that where the foster child is sent is correlated with how well that child does relative to the child's host and biological siblings. Foster children sent to live with households in Côte d'Ivoire or Ouagadougou are 12.2 and 9.2 percent more likely to be enrolled after the fostering compared with, respectively, their host and biological siblings. This result contrasts with the outcome for foster children sent to households living in the same village. These foster children are 14.8 percent less likely to be enrolled after the fostering compared with their host siblings.

4.2 Child Fixed Effects Results

With the household fixed effects specification, I can address the issue that certain households are more prone than others to foster children and that the factors influencing fostering might also affect school enrollment. However, there might also be factors at the child level (unobservable to the econometrician) that influence the fostering decision and that child's school enrollment. These factors could include the child's ability or personality (which are probably known by the biological parents) and would bias the measurement of the impact of fostering on school enrollment. A child fixed effects regression can control for these factors and measure the impact of fostering on school enrollment after the child is sent away from his biological parents.

In Table 6, I present results from child fixed effects regressions comparing foster children with host siblings (Panel A) and biological siblings (Panel B). Column 1 shows that, after controlling for the child's type, young foster children still experience an increased enrollment of 9.2 percent after the fostering relative to their biological siblings, but the coefficient is no longer statistically significant. Relative to the host siblings, young foster children experience no statistically significant impact after the fostering. Similar to the household fixed effects regressions, relative to host and biological siblings, young foster boys are 30.5 and 30.0 percent, respectively, more likely to be enrolled than young foster girls. Column 3 shows that foster children aged 8 to 11 experience a statistically significant 8.0 percent lower enrollment after the fostering relative to the biological siblings.[15]

These results indicate that, after conditioning on the child's type, for young foster children the positive enrollment impacts are significantly reduced. This provides evidence that the biological parents, in selecting which child to send out, are taking into account factors that are unobservable

[15] Similar to the household fixed effects regressions, this result is driven by those foster children sent to live with distant relatives and families that had no direct relationship with the sending household.

to the researcher yet clearly influence how the foster child fares in the host household.[16] Even after controlling for the child's type, the impact of fostering for young foster children, while not significantly positive, is still not negative as often believed.

4.3 Comparisons with Children of Non-Fostering Households

Comparing foster children with their host and biological siblings is important, but it is also necessary to compare them with children from non-fostering households in order to understand the benefit to families of being able to reallocate resources by sending away children. Table 7 presents an overview for children from non-fostering households with information similar to Tables 1, 2, and 3. In Panels A and B, these children appear similar to the biological siblings, with an average enrollment rate of 18.8 percent, an average age of 9.2 years, and a school enrollment transition rate in which 74.9 percent of them are not enrolled in either year and 3.1 percent discontinued enrollment in 2000. Panel C presents difference-in-differences results comparing foster children with children from non-fostering households using enrollment for the foster child from the year before and the year after the child is sent away from his biological parents and using 1999 and 2000 enrollment for the non-fostering household children. Results are similar using 1998 and 1999 enrollment for the children from non-fostering households. There is no significant difference between foster children and children from non-fostering households in terms of enrollment after foster children are sent away, but again the table does not use all available information and is presented only as a comparison to Table 3.

The child and household fixed effects specifications in Table 8 provide evidence that child fostering is associated with a Pareto improvement in school enrollment for young children from all

[16] Related research using cross-sectional anthropometric data for these children tries to disentangle the difficult question of whether foster children do better because of additional resources being available to them in the host household or because they are high ability children who would be more likely to succeed in any situation.

the involved households: the host siblings in the receiving family, the biological siblings remaining behind in the sending family, and the foster child. This Pareto improvement appears to stem from the ability of African households to utilize the institution of child fostering to send and receive children when necessary and ease the constraints the household faces. The dataset used in Table 8 contains observations from 638 host siblings, 994 biological siblings, 316 foster children and 470 children from non-fostering households measured over 3 years, with the reference group in the regressions being the children from the non-fostering households.

In column 1, I control for the child's type in a child fixed effects regression and find that, for households that exchange a young child, all young children in those households (host siblings, biological siblings, and foster child) are much better off after the fostering relative to non-fostering household children. Young foster children increase enrollment by 21.5 percent, host siblings by 23.9 percent, and biological siblings by 11.3 percent relative to the non-fostering household children, and all coefficients are significant at the 1 percent level. For older children aged 8 to 11 (column 2), the positive impact of fostering relative to children from non-fostering households greatly diminishes, with biological siblings' enrollment increasing by 4.1 percent and host siblings having a positive but insignificant enrollment increase. Foster children aged 8 to 11 actually experience a significant 5.6 percent drop in enrollment after the fostering relative to the non-fostering household children. The oldest children in the fostering households fare the worst relative to the non-fostering household children, with host and biological siblings experiencing a 9.9 and 5.8 percent drop, respectively, in enrollment after the fostering (column 3). Older foster children experience an insignificant negative drop in enrollment relative to the non-fostering household children. Based on the child fixed effects results, on average all young children in the households involved in fostering experience an improvement in enrollment, but the effect diminishes and becomes negative for the oldest children.

Columns 4 to 6 estimate household fixed effects regressions that control for time-invariant

factors that might influence which households are involved in fostering children. Young foster children have an 18.2 percent increase in enrollment after the fostering relative to non-fostering household children, and the coefficient is significant at the 1 percent level. For older foster children, the coefficient is reduced and there is no significant impact after the fostering. For the host and biological siblings, there is no impact for the youngest children, but there is a positive enrollment impact for biological siblings aged 8 to 11 and a negative impact for the oldest biological siblings.

4.4 Adult Welfare Outcomes

Having provided evidence that child fostering can lead to a Pareto improvement in school enrollment for young children in both the sending and receiving households, it is also important to understand if fostering only has a short-run impact or whether the effects are long-lasting and translate into other social welfare gains for the fostered individual. In addition to the tracking component in the fieldwork, a unique aspect of the data is that they contain information about the childhood fostering experience for every current adult head of household who was interviewed. Results in Table 9 indicate a strong positive correlation between current wealth and the survey respondent having been fostered as a child.[17] Results in columns 1 and 4 show that respondents who were fostered as children have 54.2 percent higher income levels and 40.1 percent higher asset levels (calculated after converting log points into percentage increases).

I do not claim that fostering causes higher wealth because there could be other factors that influence the respondent's wealth such as gender, education, and family background. In columns 2 and 5, I estimate ordinary least squares regressions to measure the impact of being fostered as a child on current wealth, controlling for observable factors that might influence current wealth

[17] I use two measures of current wealth, the average value of all assets owned between 1998 and 2000 and the average level of income over the same time period. Assets include seventeen different items that rural households might typically own, such as a bicycle, a radio, a wheelbarrow and a cart. To account for heterogeneity in asset quality across individuals, the value of each asset as reported by the respondent is used to measure total asset value.

including whether the respondent's father or mother held a position of responsibility in the village, the number of the father's wives, the respondent's marital status, age, education and gender. The coefficient on the fostering variable is reduced slightly compared with columns 1 and 4, but there is still a positive, significant correlation between being fostered as a child and higher current wealth.

Columns 3 and 6 measure the impact of being fostered as a child for various durations and show that children who spent less than 5 years living away from their biological parents have higher levels of current wealth compared with non-fostered children (63.6 percent higher in income and 79.0 percent higher in assets). For children who lived away from their biological parents for a longer time period, the positive correlation with current wealth diminishes. This is consistent with previous research that shows households use fostering as a transitory risk-coping strategy in response to negative, exogenous income shocks [Akresh, 2004]. It is possible that for children with longer fostering durations, the biological parents never recovered from the transitory shock and this explains the child's lower current wealth levels.

Despite controlling for observables that might influence current wealth, foster status as a child could still be endogenous with unobservable factors correlated with fostering status and wealth biasing the regression estimates. For example, certain households might have better quality social networks and be more likely to foster a child and that child could have higher current wealth not because of being fostered as a child, but because of the parent's better social network. To address this endogeneity, I use information about the childhood fostering status of each of the respondent's biological siblings. In addition, the respondents provided information about the education, occupation, and location for each of his siblings. I can therefore estimate a household fixed effects regression which compares the welfare outcomes for siblings who were fostered as children with the welfare outcomes of siblings from the same family who were not fostered as children. The evidence in Table 10 indicates that those siblings who were fostered as children are 9.9 percent more likely to

have attended school, are 16.6 percent more likely to have a skilled occupation with higher earnings such as a businessman, government employee, teacher, or manual laborer, are 10.7 percent less likely to be farmers, and are 10.0 percent less likely to live in a rural village.

The data do not contain information about current assets or income for each of the siblings, so it is not possible to replicate the regressions from Table 9 using the household fixed effects estimation strategy. To compare the household fixed effects and ordinary least squares results using the same dependent variables, in columns 2, 4, 6, and 8, I present ordinary least squares estimates measuring the impact of being fostered as a child on education, having a skilled occupation, being a farmer, and living in a rural area. The ordinary least squares coefficients are similar in sign and significance but are larger in magnitude.[18]

5 Conclusion

Given previous research that details the negative implications for children living away from their biological parents and the prevailing political view of the institution, the results of this paper are somewhat surprising. This paper systematically analyzes the school enrollment outcomes of children living away from their parents and finds a Pareto improvement in school enrollment for young children due to the institution of fostering and a household's ability to adjust its structure. On average, young children in all the households involved in fostering (host siblings in the receiving household, biological siblings in the sending household, and the foster child) experience an increase in school enrollment relative to children from non-fostering households.

For economists who often assume there should be gains from trade between willing parties, these results should not be viewed with surprise, although the results stand in contrast to the sen-

[18] Consistent with the regressions in Tables 4, additional household fixed effects analysis (not reported) shows that siblings who were fostered as children between the ages of five to seven experienced the largest positive impact on education and occupation.

timent expressed in the quotes at the start of the paper. Two households that choose to reallocate resources by sending a child from the biological parents to the host family would only do so if there was the expectation of an improvement in each household's welfare. The host household would be unlikely to receive a child if that was going to make them worse off, and likewise, the sending household would not send a child if that was going to make them worse off. I find that not only are the two households not worse off, but they actually experience an improvement in their children's school enrollment. This has significant policy implications for international development organizations who are currently trying to prevent children from growing up away from their biological parents. However, the results are not consistently positive as foster children sent at an older age (in particular, those not sent to live with immediate family members) are significantly less likely to be enrolled after leaving their biological parents, a finding that indicates the need for a more nuanced view of the institution of fostering.

These results about the impact of a household adjusting its structure have implications for the larger issue in Africa and even the United States of how to define a household and what is the appropriate unit of analysis for studying the impact on a child's welfare outcomes. A large literature in the United States analyzes the schooling and health outcomes of children who live in non-traditional household structures and generally finds that not having the biological mother present is detrimental to the welfare outcomes of the child [McLanahan and Sandefur, 1994; Case and Paxson, 2001; Ginther and Pollak, 2003]. This paper finds substantially different outcomes for children from rural Burkina Faso. The results are based on an estimation strategy, household and child fixed effects, that can address the endogeneity of fostering. This paper also describes the advantages of a research methodology, tracking both households involved in the fostering exchange, without which I could not examine the impact of fostering on the biological siblings who were left behind.

This analysis is informative for understanding why families choose to adjust their structure and reallocate resources between two households (sender and receiver) in such a way as to make all parties better off in terms of school enrollment. While there is strong evidence of a short-run Pareto improvement in schooling for young children in households associated with fostering and a long-run improvement in the welfare outcomes for the foster child, future research needs to examine additional welfare measures to see if fostering also has a positive impact along other dimensions, such as health and nutrition.

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Table 1: Summary Statistics Comparing Foster Children, Host Siblings, and Biological Siblings

	(1) Host Siblings	(2) Foster Children	(3) Biological Siblings
Enrollment Rate (% currently enrolled)	32.1	17.8	20.2
Average Age	9.8	10.2	9.4
Median Age	10	10	9
Percentage Male	55.6	36.6	50.8
Number of Children	638	316	994

Note: All summary statistics exclude those observations in which the child is under age 5 or over age 15 in a given year. Data source: Author's survey.

Table 2: Tabulation of School Enrollment Transitions (Before and After Fostering Exchange) Comparing Foster Children, Host Siblings, and Biological Siblings [Column Percent]

School Enrollment Transitions	(1) Host Siblings	(2) Foster Children	(3) Biological Siblings
Never enrolled (Not enrolled before, Not enrolled after)	58.6	82.7	77.0
Discontinued Enrollment (Enrolled before, Not enrolled after)	2.9	2.0	2.3
Newly Enrolled (Not enrolled before, Enrolled after)	4.8	4.9	4.8
Enrolled both years (Enrolled before, Enrolled after)	33.7	10.4	15.9
Number of children	314	202	560
Testing for equality of all 3 columns:	LR χ^2 (6) = 54.65		p-value=0.00
Testing for equality of columns 1 & 2:	LR χ^2 (3) = 41.45		p-value=0.00
Testing for equality of columns 1 & 3:	LR χ^2 (3) = 37.56		p-value=0.00
Testing for equality of columns 2 & 3:	LR χ^2 (3) = 4.02		p-value=0.26

Note: I restrict the table to households that fostered a child in 1999 or 2000 because of the need for enrollment information prior to the fostering exchange. For households fostering a child in 1999, I consider 1998 enrollment as before enrollment and 1999 enrollment as after enrollment. For households fostering in 2000, I consider 1999 enrollment as before enrollment and 2000 enrollment as after. There are 242 host siblings, 108 foster children, and 310 biological siblings that were fostered in 1998 that are excluded from the table, and I also exclude 82 host siblings, 6 foster children, and 124 biological siblings who were under age 5 in the year prior to the fostering exchange or over age 15 in the year after the fostering exchange. Testing for the equality of all 3 columns yields a LR χ^2 (6) test statistic of 54.65 with the corresponding p-value of 0.00. Testing for the equality of columns 1 and 2 yields a LR χ^2 (3) test statistic of 41.45 with a p-value of 0.00. Testing for the equality of columns 1 and 3 yields a LR χ^2 (3) test statistic of 37.56 with a p-value of 0.00. Finally, testing for the equality of columns 2 and 3 yields a LR χ^2 (3) test statistic of 4.02 with a p-value equal to 0.26. Data source: Author's survey.

Table 3a: Difference in Differences Comparing Average School Enrollment for Foster Children with Host Siblings and Biological Siblings [Young Children]

Panel A: Boys Aged 5-7

Foster Children Compared to Host Siblings

	Foster Children	Host Siblings	Difference
Pre-Fostering	0.0	0.067	-0.067
	[0.0]	[0.065]	[0.142]
Post-Fostering	0.625	0.233	0.392
	[0.183]	[0.082]	[0.178]
Difference	0.625	0.166	0.459
	[0.183]	[0.092]	[0.200]

Foster Children Compared to Biological Siblings

	Foster Children	Biological Siblings	Difference
Pre-Fostering	0.0	0.044	-0.044
	[0.0]	[0.040]	[0.104]
Post-Fostering	0.625	0.089	0.536
	[0.183]	[0.049]	[0.126]
Difference	0.625	0.045	0.580
	[0.183]	[0.057]	[0.146]

Panel B: Girls Aged 5-7

Foster Children Compared to Host Siblings

	Foster Children	Host Siblings	Difference
Pre-Fostering	0.0	0.100	-0.100
	[0.0]	[0.069]	[0.098]
Post-Fostering	0.100	0.250	-0.150
	[0.069]	[0.085]	[0.121]
Difference	0.100	0.150	-0.050
	[0.069]	[0.098]	[0.139]

Foster Children Compared to Biological Siblings

	Foster Children	Biological Siblings	Difference
Pre-Fostering	0.0	0.032	-0.032
	[0.0]	[0.029]	[0.059]
Post-Fostering	0.100	0.081	0.019
	[0.069]	[0.036]	[0.073]
Difference	0.100	0.049	0.051
	[0.069]	[0.041]	[0.083]

Note: Standard errors in brackets. Post-fostering enrollment refers to the year after the foster child is sent away from his biological parents. I restrict the table to households that fostered a child in 1999 or 2000 because of the need for enrollment information prior to the fostering exchange. For households fostering a child in 1999, I use 1998 enrollment as pre-fostering enrollment and 1999 enrollment as post-fostering enrollment. For households fostering in 2000, I use 1999 enrollment as pre-fostering enrollment and 2000 enrollment as post-fostering enrollment. Data source: Author's survey.

Table 3b: Difference in Differences Comparing Average School Enrollment for Foster Children with Host Siblings and Biological Siblings [All Children]

Panel A: Foster Children Compared to Host Siblings

	Foster Children (N=202)	Host Siblings (N=314)	Difference
Pre-Fostering	0.124	0.366	-0.242
	[0.024]	[0.024]	[0.039]
Post-Fostering	0.153	0.385	-0.231
	[0.025]	[0.025]	[0.040]
Difference	0.029	0.019	0.010
	[0.034]	[0.035]	[0.056]

Panel B: Foster Children Compared to Biological Siblings

	Foster Children (N=202)	Biological Siblings (N=560)	Difference
Pre-Fostering	0.124	0.182	-0.058
	[0.024]	[0.016]	[0.031]
Post-Fostering	0.153	0.207	-0.053
	[0.025]	[0.017]	[0.032]
Difference	0.029	0.025	0.005
	[0.034]	[0.023]	[0.045]

Note: Standard errors in brackets. Post-fostering enrollment refers to the year after the foster child is sent away from his biological parents. I restrict the table to households that fostered a child in 1999 or 2000 because of the need for enrollment information prior to the fostering exchange. For households fostering a child in 1999, I use 1998 enrollment as pre-fostering enrollment and 1999 enrollment as post-fostering enrollment. For households fostering in 2000, I use 1999 enrollment as pre-fostering enrollment and 2000 enrollment as post-fostering enrollment. Only children between age 5 and 15 years old (inclusive) are included in the table. Data source: Author's survey.

Table 4: Household Fixed Effects Estimation Comparing School Enrollment of Foster Children with Host Siblings and Foster Children with Biological Siblings

Panel A: Foster Children Compared to Host Siblings

	(1)	(2)	(3)	(4)	(5)	(6)
	Children Aged 5-7		Children Aged 8-11		Children Aged 12-15	
Ever Fostered * After Fostering	0.175***	0.089	0.000	0.026	-0.049	-0.050
	[0.062]	[0.073]	[0.050]	[0.052]	[0.043]	[0.055]
Ever Fostered	-0.062	-0.021	-0.142**	-0.191***	-0.294***	-0.224***
	[0.061]	[0.076]	[0.058]	[0.065]	[0.059]	[0.072]
Male	0.002	0.003	0.107***	0.092**	-0.017	0.022
	[0.042]	[0.045]	[0.035]	[0.042]	[0.043]	[0.050]
(Ever Fostered*After Fostering)*Male		0.242*		-0.084		-0.006
		[0.127]		[0.114]		[0.073]
Ever Fostered * Male		-0.123		0.140		-0.200
		[0.126]		[0.147]		[0.142]
Controls for Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	670	670	1010	1010	879	879

Panel B: Foster Children Compared to Biological Siblings

	Children Aged 5-7		Children Aged 8-11		Children Aged 12-15	
Ever Fostered * After Fostering	0.179***	0.071	-0.102**	-0.065	0.043	0.043
	[0.052]	[0.055]	[0.046]	[0.056]	[0.037]	[0.045]
Ever Fostered	0.031	0.076	-0.021	-0.036	-0.096**	-0.045
	[0.040]	[0.048]	[0.044]	[0.050]	[0.039]	[0.051]
Male	0.083***	0.081***	0.160***	0.164***	0.142***	0.170***
	[0.029]	[0.030]	[0.029]	[0.031]	[0.031]	[0.035]
(Ever Fostered*After Fostering)*Male		0.314***		-0.107		0.003
		[0.117]		[0.093]		[0.069]
Ever Fostered * Male		-0.119		0.051		-0.126
		[0.082]		[0.099]		[0.085]
Controls for Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1063	1063	1363	1363	1059	1059

Note: Robust standard errors in brackets. *, **, *** indicate significance at 10%, 5%, and 1% respectively. The dependent variable is school enrollment with a mean of 27.1 in Panel A and 19.6 in Panel B. All households that fostered a child in 1998, 1999, or 2000 are included in the regressions. The dataset in Panel A consists of 638 host siblings and 316 foster children measured over 3 years. The dataset in Panel B consists of 994 biological siblings and 316 foster children measured over 3 years. In Panel A, I exclude 186 observations in which the child is under age 5 in a given year and 117 observations in which the child is over age 15 in a given year. In Panel B, I exclude 298 observations for children under age 5 and 147 observations for children over age 15. Data source: Author's survey.

Table 5: Household Fixed Effects Estimation Comparing Foster Children with Host Siblings and Foster Children with Biological Siblings

	(1) Only Households Fostering for Schooling Reasons	(2) Only Households Fostering for Child Labor Reasons	(3) Only Households Fostering due to Parent Death	(4) Only Households Fostering To & From Côte d'Ivoire / Ouagadougou	(5) Only Households Fostering Within Same Village
Panel A: Foster Children Compared to Host Siblings					
Ever Fostered * After Fostering	0.373***	-0.061*	0.056	0.122**	-0.148**
	[0.114]	[0.035]	[0.091]	[0.049]	[0.073]
Observations	310	1272	269	803	371
Number of Foster Children	32	193	23	106	57
Panel B: Foster Children Compared to Biological Siblings					
Ever Fostered * After Fostering	0.359***	-0.027	0.164	0.092**	-0.007
	[0.107]	[0.029]	[0.102]	[0.043]	[0.068]
Observations	240	2271	199	1093	570
Number of Foster Children	32	193	23	106	57

Note: Robust standard errors in brackets. *, **, *** indicate significance at 10%, 5%, and 1% respectively. Each regression also includes control variables indicating age, gender, year, and if the child was ever fostered. All households that fostered a child in 1998, 1999, or 2000 are included in the regressions. The dataset in Panel A consists of 638 host siblings and 316 foster children measured over 3 years. The dataset in Panel B consists of 994 biological siblings and 316 foster children measured over 3 years. In Panel A, I exclude 186 observations in which the child is under age 5 in a given year and 117 observations in which the child is over age 15 in a given year. In Panel B, I exclude 298 observations for children under age 5 and 147 observations for children over age 15. Data source: Author's survey.

Table 6: Child Fixed Effects Estimation Comparing Foster Children with Host Siblings and Foster Children with Biological Siblings

Panel A: Foster Children Compared to Host Siblings

	(1)	(2)	(3)	(4)	(5)	(6)
	Children Aged 5-7		Children Aged 8-11		Children Aged 12-15	
Ever Fostered * After Fostering	0.004	-0.096	-0.051	-0.037	0.031	0.047***
	[0.080]	[0.083]	[0.034]	[0.037]	[0.021]	[0.015]
(Ever Fostered*After Fostering)*Male		0.305*		-0.040		-0.038
		[0.163]		[0.072]		[0.038]
Controls for Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	670	670	1010	1010	879	879

Panel B: Foster Children Compared to Biological Siblings

	Children Aged 5-7		Children Aged 8-11		Children Aged 12-15	
Ever Fostered * After Fostering	0.092	-0.006	-0.080**	-0.066*	0.021	0.037***
	[0.075]	[0.075]	[0.034]	[0.037]	[0.021]	[0.014]
(Ever Fostered*After Fostering)*Male		0.300*		-0.040		-0.038
		[0.163]		[0.072]		[0.038]
Controls for Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1063	1063	1363	1363	1059	1059

Note: Robust standard errors in brackets. *, **, *** indicate significance at 10%, 5%, and 1% respectively. The dependent variable is school enrollment with a mean of 27.1 in Panel A and 19.6 in Panel B. All households that fostered a child in 1998, 1999, or 2000 are included in the regressions. The dataset in Panel A consists of 638 host siblings and 316 foster children measured over 3 years. The dataset in Panel B consists of 994 biological siblings and 316 foster children measured over 3 years. In Panel A, I exclude 186 observations in which the child is under age 5 in a given year and 117 observations in which the child is over age 15 in a given year. In Panel B, I exclude 298 observations for children under age 5 and 147 observations for children over age 15. Data source: Author's survey.

Table 7: Overview for Children of Non-Fostering Households

Panel A: Summary Statistics	(1) Children of Non-Fostering Households
Enrollment Rate (% currently enrolled)	18.8
Average Age	9.2
Median Age	9
Percentage Male	51.1
Number of Children	470

Panel B: School Enrollment Transitions (1999-2000)	(2) Children of Non-Fostering Households [Column %]
Never enrolled (Not enrolled 1999, Not enrolled 2000)	74.9
Discontinued Enrollment (Enrolled1999, Not enrolled 2000)	3.1
Newly Enrolled (Not enrolled 1999, Enrolled 2000)	6.6
Enrolled both years (Enrolled 1999, Enrolled 2000)	15.4
Number of Children	390

Panel C: Difference in Differences Comparing Average School Enrollment [†]

	Foster Children (N=202)	Children of Non-Fostering Households (N=390)	Difference
Pre-Fostering	0.124	0.185	-0.061
	[0.024]	[0.019]	[0.032]
Post-Fostering	0.153	0.221	-0.068
	[0.025]	[0.020]	[0.034]
Difference	0.029	0.036	-0.007
	[0.034]	[0.027]	[0.047]

Note: All statistics exclude those observations in which the child is under age 5 or over age 15 in a given year. Panel A contains summary statistics, similar to Table 1, for children from non-fostering households. Panel B contains school enrollment transition information, similar to Table 2, for those children. In Panel B, I use 1999 and 2000 enrollment rates for these children, but results are similar using 1998 and 1999 enrollment rates. In Panel B, I exclude 47 children under age 5 in 1999 and 33 children over age 15 in 2000. Data source: Author's survey.

[†] Panel C presents difference-in-differences results comparing average school enrollment for foster children with children from non-fostering households using enrollment for the foster child from the year before and the year after the child is fostered and using 1999 and 2000 enrollment for the non-fostering household children. Results are similar using 1998 and 1999 enrollment for these non-fostering household children.

Table 8: Household and Child Fixed Effects Regressions Comparing Host Siblings, Biological Siblings, Foster Children and Children From Non-Fostering Households

Dependent Variable:	Child Fixed Effects			Household Fixed Effects		
School Enrollment	(1) Children Aged 5-7	(2) Children Aged 8-11	(3) Children Aged 12-15	(4) Children Aged 5-7	(5) Children Aged 8-11	(6) Children Aged 12-15
Foster*After	0.215***	-0.056*	-0.016	0.182***	0.011	0.019
	[0.071]	[0.031]	[0.016]	[0.050]	[0.046]	[0.039]
Host*After	0.239***	0.023	-0.099***	-0.045	0.005	0.002
	[0.060]	[0.030]	[0.033]	[0.043]	[0.040]	[0.047]
Biological*After	0.113***	0.041*	-0.058***	-0.009	0.062**	-0.055*
	[0.028]	[0.024]	[0.020]	[0.027]	[0.028]	[0.029]
Host Sibling				0.118**	0.181***	0.253***
				[0.050]	[0.055]	[0.059]
Biological Sibling				0.003	0.045	0.149***
				[0.040]	[0.047]	[0.045]
Male				0.047**	0.123***	0.090***
				[0.020]	[0.020]	[0.024]
Controls for Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1998	2443	1935	1998	2443	1935

Note: Robust standard errors in brackets. *, **, *** indicate significance at 10%, 5%, and 1% respectively. Dataset includes 638 host siblings, 994 biological siblings, 316 foster children, and 470 non-fostering household children measured over 3 years with the reference group being children from non-fostering households. I exclude 604 observations in which the child is under age 5 in a given year and 274 observations in which the child is over age 15. The year dummies are interacted with an indicator variable for children from non-fostering households to capture the control group's time trend. Data source: Author's survey.

Table 9: OLS Regression Estimating Correlation Between Being Fostered as a Child and Income and Wealth

	Dependent Variable = Ln (Income)			Dependent Variable = Ln (Asset Value)		
	(1)	(2)	(3)	(4)	(5)	(6)
Fostered as a Child	0.433***	0.400***		0.337**	0.336**	
	[0.141]	[0.141]		[0.156]	[0.154]	
Foster duration < 5 years			0.492**			0.582**
			[0.228]			[0.248]
5years<=Foster duration<=10 years			0.465**			0.368
			[0.211]			[0.229]
Foster duration > 10 years			0.169			-0.056
			[0.262]			[0.286]
Father in Position of Responsibility		0.072	0.061		-0.156	-0.185
		[0.135]	[0.136]		[0.147]	[0.148]
Mother in Position of Responsibility		0.270	0.261		0.655***	0.631***
		[0.214]	[0.215]		[0.233]	[0.234]
Number of Father's Wives		0.025	0.025		0.078***	0.078***
		[0.024]	[0.024]		[0.027]	[0.027]
30< Age <= 40		0.624***	0.615***		0.428**	0.412**
		[0.166]	[0.167]		[0.181]	[0.181]
40< Age <= 50		0.261	0.255		0.104	0.096
		[0.192]	[0.193]		[0.210]	[0.210]
50< Age <= 60		0.267	0.271		0.254	0.268
		[0.181]	[0.182]		[0.198]	[0.198]
Age > 60		0.117	0.122		0.136	0.149
		[0.190]	[0.190]		[0.207]	[0.207]
Primary Education		0.199	0.222		0.580***	0.624***
		[0.189]	[0.191]		[0.206]	[0.208]
Male		0.412	0.454		1.083*	1.197**
		[0.538]	[0.545]		[0.586]	[0.593]
Divorced / Widowed		-0.526	-0.527		-0.373	-0.374
		[0.337]	[0.338]		[0.368]	[0.367]
Never Married		0.212	0.203		-0.031	-0.039
		[0.349]	[0.350]		[0.381]	[0.381]
Constant	11.160***	10.339***	10.300***	10.837***	9.237***	9.128***
	[0.058]	[0.566]	[0.573]	[0.064]	[0.617]	[0.623]
Observations	445	445	445	445	445	445

Note: Robust standard errors in brackets. *, **, *** indicate significance at 10%, 5%, and 1% respectively. The omitted categories for the dummy variables are age of the respondent is under 30, married for more than 3 years, and duration of fostering is never fostered. For those respondents who were fostered, 36% were fostered for less than 5 years, 39% were fostered for between 5 and 10 years, and 25% were fostered for more than 10 years. Data source: Author's survey.

Table 10: OLS and Household Fixed Effects Regressions Using Biological Siblings to Estimate the Impact of Having Been Fostered as a Child on Education, Occupation, and Residence

Dependent Variables:	Education		Skilled Profession		Farmer		Rural	
	(1) HH FE	(2) OLS	(3) HH FE	(4) OLS	(5) HH FE	(6) OLS	(7) HH FE	(8) OLS
Fostered as a Child	0.099***	0.214***	0.166***	0.223***	-0.107**	-0.295***	-0.100*	-0.215***
	[0.029]	[0.043]	[0.046]	[0.046]	[0.054]	[0.046]	[0.056]	[0.048]
Male	0.059***	0.057***	0.243***	0.255***	-0.162***	-0.168***	-0.222***	-0.214***
	[0.012]	[0.012]	[0.019]	[0.019]	[0.022]	[0.022]	[0.023]	[0.022]
30< Age <= 40	-0.013	-0.015	0.001	0.015	0.053*	0.028	0.066**	0.073**
	[0.016]	[0.017]	[0.026]	[0.024]	[0.030]	[0.029]	[0.031]	[0.029]
40< Age <= 50	-0.043**	-0.038**	-0.056*	-0.045*	0.111***	0.121***	0.137***	0.167***
	[0.021]	[0.016]	[0.033]	[0.025]	[0.038]	[0.031]	[0.040]	[0.030]
50< Age <= 60	-0.068***	-0.053***	-0.092**	-0.058*	0.158***	0.149***	0.176***	0.188***
	[0.025]	[0.018]	[0.041]	[0.029]	[0.047]	[0.035]	[0.049]	[0.035]
Age > 60	-0.079**	-0.080***	-0.233***	-0.193***	0.180***	0.195***	0.271***	0.261***
	[0.032]	[0.014]	[0.052]	[0.027]	[0.060]	[0.039]	[0.063]	[0.036]
Constant	0.063***	0.055***	0.129***	0.107***	0.648***	0.666***	0.677***	0.673***
	[0.013]	[0.011]	[0.021]	[0.015]	[0.024]	[0.021]	[0.025]	[0.020]
Observations	1829	1829	1829	1829	1829	1829	1829	1829
Number of Households	433		433		433		433	

Note: Robust standard errors in brackets. *, **, *** indicate significance at 10%, 5%, and 1% respectively. The household fixed effect is for brothers and sisters from the same household. All observations in the dataset are brothers and sisters of the head of the household. Education is defined as having attended school. Skilled profession is defined as the individual being a businessman, government employee, teacher, manual laborer, or other type of employee. Farmer is defined as the individual being a farmer and rural is defined as the person living in a village. The omitted age category is under 30. Data source: Author's survey.