Child Fosterage and the Buffering of Educational Inequality in Zambia

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Informal networks of the extended family are often viewed as reliable social safety nets that buffer educational inequalities among children in sub-Saharan Africa. However, this assumed buffering has not been formally evaluated at the macro-level. Yet such assessments are increasingly important at a time of rapid economic transitions and demographic change associated with HIV/AIDS. This paper asks the question: How effective are extended family systems in reallocating fostered children into households with better resource endowments? Using Demographic and Health Survey data, I apply a demographic index to measure the systematic flows of fostered children in Zambia. Results suggest that at macro level, the extended family system has been modestly effective in channeling children into households with fewer children. However, the potential for inequality buffering depends on the overall economic environment and the micro-level dynamics within receiving households. Future analyses will cover a larger set of sub-Saharan countries where DHS data are available.

Background

Extended family systems are often viewed as reliable social safety nets in Africa. In the absence of strong formal systems of social security for children, they are expected to buffer educational inequalities by permitting the fosterage of rural, poor, and orphaned children into better-endowed households. Indeed, data from many sub-Saharan African (SSA) countries indicates that as many as one in every three children lives away from their biological parents and that this system has supported the education of many children (DHS 2006, Akresh 2005). In recent years however, new questions have emerged about the limits of these support systems in the wake of economic crises, the rising costs of schooling, and the growing competition for urban employment. In particular, the HIV/AIDS pandemic has exacerbated the orphan problem. UNICEF (2007) estimates that SSA is home to more than three quarters (12 million) of all global AIDS orphans currently estimated at 15.2 million. Within the subcontinent, the highest concentration of orphans is in East and Southern Africa (8.7million) compared to West and Central Africa region (3 million). Compounded with the recent economic transitions after structural adjustment

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programs in SSA countries, the effectiveness of child fosterage systems in buffering inequality among African children may be compromised.

This study seeks to evaluate whether the traditional extended family framework continues to suffice as an effective social safety net for orphans and non orphans in SSA. The common assumption is that, consistent with Adam Smith's metaphorical *invisible hand,* individual families acting in their best interest will exhibit fosterage behavior that efficiently allocates fosterage opportunities to the neediest children. As a result of these myriad of individual but Pareto-efficient decisions, fosterage would benefit society as a whole, and it would in particular help reduce educational inequality among children. I specifically ask the question: Do foster children tend to be systematically reallocated from smaller to larger households? Using Demographic and Health Survey (DHS) data for Zambia (1992 and 1996), I evaluate the directionality of fosterage flows at national level. A better understanding of this directionality and the resulting buffering is important for scholars and policy makers concerned about inclusion and social justice.

Theoretical Perspectives on Child Fosterage and Educational Outcomes

Previous studies on child fosterage systems have focused on two dimensions of fosterage; prevalence and micro-level determinants and impacts. In a seminal paper, (Isiugo Abanihe 1985) highlighted the prevalence of fosterage in West African societies (20% of sampled children) describing five different types of fosterage systems. Vandermeersch and Chimere-Dan (2002) examined the factors that influence individuals' decisions to foster children and concluded that fosterage appears to be primarily a way of adjusting to demographic imbalances between households with too few children and those with too many. Others described the role of normative pressure in influencing individual decision making in fosterage (Mahieu 1989) as well as the human instincts towards altruistic behavior (Kolm 2007). The second and more recent theoretical and empirical contributions have addressed the micro-level dynamics within receiving foster homes (Lloyd and Blanc 1996; Akresh 2005, Case, Paxson and Ableidinger 2004, Case and Ardington 2006, Pilon 1995 and 2003, Kobiané 2003, Kobiané *et al* 2005, Bicego, Rutstein

and Johnson 2003). Individually, these studies sought to distill the household level social and economic outcomes associated with child fosterage. Among these studies, the perspectives on the desirability of fosterage system have fallen into two camps. Some studies (for example Akresh 2005) argue that fosterage decisions result in *Pareto efficient* outcomes for both sending and receiving households in ways that increase the probability of school enrollment. Yet, other studies have questioned the effectiveness of fosterage systems in buffering child resource inequality (Case, Paxson and Ableidinger 2004, Case and Ardington 2006, Pilon 1995 and 2003, Kobiané 2003, Kobiané et *al* 2005, Bicego, Rutstein and Johnson 2003, Eloundou-Enyegue, Titus and Kandiwa forthcoming). For instance, Pilon (2003) argues that fosterage decisions are often driven by the demand for child labor while others reiterated the salience of the Hamilton rule (Case, Paxson and Ableidinger 2004). In a study of ten African countries, they concluded that even after controlling for wealth status, orphans are less likely to be enrolled in school than are nonorphans with whom they live and this is because orphans tend to live with distant relatives or unrelated caregivers. In essence, fosterage opportunities are never randomly distributed among needy children but rather, consistent with Hamilton's rule, altruistic families systematically foster children with whom they have close biological ties.

While the above studies have made significant theoretical and empirical contributions to our understanding of the role of fosterage in improving the welfare of poor and vulnerable children in sub-Saharan Africa, they do not fully document the macro level buffering of fosterage systems. In this paper I argue that the macro level effectiveness of fosterage in reducing inequality among children depends not only on the prevalence and household level dynamics, but also on the directionality of flows or the distribution of fosterage opportunities among households of different status (Eloundou-Enyegue and Shapiro 2005). My study seeks to fill this gap in the literature by deriving a measure that estimates the demographic concentration of fosterage opportunities and explains the extent to which children are systematically fostered among low and high resourced households.

Macro Level Inequality Buffering Effectiveness of Fosterage Systems

The fundamental premise of this analysis is that the buffering potential of fosterage systems depends on three main parameters: The volume of fosterage flows; the extent to which receiving households treat the fostered children fairly; and the directionality of fosterage. Of these three parameters, this study focuses on the later. An important predictor of fosterage effectiveness is whether children flow from poorer and or larger households, to smaller and or wealthier households. Resource dilution theory leads us to expect that the number of children in a household is inversely related to the quality of those children in terms of educational outcomes (Judith Blake 1981)[2] and outcomes for children may vary depending on the structure of the family in which they belong (MacLanahan 2004), or both (Eloundou-Enyegue and Stokes 2006). Similarly, we expect a positive theoretical relationship between family wealth and educational attainment. Children who grow up in poorer families in SSA drop out of school earlier and subsequently have fewer years of education with serious implications for the reproduction of intergenerational inequality (Filmer and Pritchett 1999). Even in countries that have embraced policies and practice of Universal Primary Education (UPE) children in better endowed households are expected to do better because families still have to pay, out of pocket, for educational materials such as textbooks, transportation, etc. Combined, this evidence suggests that the distribution of fostered children in households of specific income and size profiles has implications on the expected social benefits at macro level.

My study therefore, estimates the extent to which children in Zambia are systematically channeled (through the invisible hand of fosterage) from larger to smaller households. The next section outlines the method as well as the data applied to estimate the directionality of fosterage flows in two time periods.

[2] Others failed to find similar quantity/quality tradeoff (Gomes 1984) due to contextual differences.

Data and Methods

I use Demographic and Health Survey (DHS) data to derive indices of demographic concentration of foster children and trace how these indices have changed over time in Zambia. DHS data comes from surveys of nationally representative samples carried out at variable intervals. The current study draws mainly from DHS data for Zambia (1992 and 1996). These datasets make it possible to distinguish between total number of biological children and total number of fostered children in a household. My analysis is based on children less than 15 years of age. First, I classify all children within the sampled households into different family types based on family size and I form ten categories of family sizes 1 through 10+. Importantly, these data show only the destination of children but not their families of origin. The index of demographic concentration is based on the assumption that if informal fosterage occurred in the same manner as biological distribution, we would expect the proportion of fostered children (in respective family sizes) to mirror those of biological children. Because these data show destination of fostered children, it makes it possible to calculate indices of demographic concentration as :

$$IC = (O_i - E_i) * \ln(r_i) \qquad [1]$$

Where :

IC=index of concentration; i=index group (family size in the case of demographic concentration); E_i*= percentage of children expected to be fostered into the group, if children were distributed proportionately according to group importance; Specifically, E is the percentage of biological children in this SES (sibsize) group, relative to all biological children;* O_i*=percentage of children actually fostered in this group (out of all fostered children);* r_i*= SES (or sibsize) ratio; that is, group SES divided by average SES.*

This formula is such that an over-representation of fostered children into smaller sized families makes a positive contribution while an over representation into larger families makes a negative contribution. The index of concentration takes values on either side of zero. A value of zero reflects no buffering effect from fosterage while negative values suggest that informal fosterage systems are reinforcing inequality among children.

Findings

This section presents the empirical findings. First, it describes the context, and then it presents the evidence on the demographic concentration of fosterage opportunities.

Contextual Issues: Fosterage and Orphanhood in Zambia

How prevalent is the practice of child fosterage in Zambia and how have the trends changed over time? Overall, about a fifth to a quarter of the total number of children in Zambia grow up in households other than with their biological parents. Table 1 shows that in Zambia, the total number of fostered children has steadily increased in the decade 1992-2002. It is important to note that fosterage is not unique to orphans as in fact about 10% of children aged between 6-9 years and 13% of children aged between 10 and 14 years (whose parents are alive) grow up with other relatives.

Table 1. Distribution of Fosterage Opportunities in Zambia by Age Group: Non orphans, Single and Double Orphans

	6-9 Year Olds Residence and survival status					10-14 year olds Residence and survival status of parents				
	both alive	father alive	mother alive	both dead	Total Number	both alive	father alive	mother alive	both dead	Total Number
1992	11.8	1.6	1.7	0.7	4320	16.2	2	3.2	1.3	4880
1996	10.8	2	2.9	1.6	4826	13.3	2.7	4	3	5596
2001/02	9.6	2.3	3.3	3.3	4910	12.4	3.2	5.5	6.1	5265

Source: ORC Macro 2007, STATompiler, measuredhs.com

Second, the proportion of fostered children increases with age (Figure 1) perhaps because parents are more likely to foster out their children to relatives nearer to or better able to afford secondary school. But, how has the HIV/AIDS pandemic affected the volumes of orphans in Zambia?

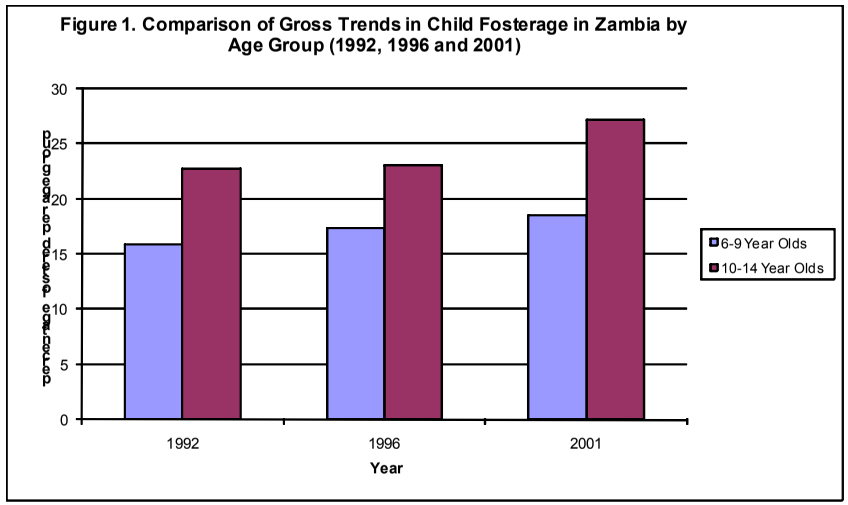
Figure 1. Comparison of Gross Trends in Child Fosterage in Zambia by Age Group (1992, 1996 and 2001)
30
25
20
15
10
5
0
1992
1996
2001
Year
6-9 Year Olds
10-14 Year Olds

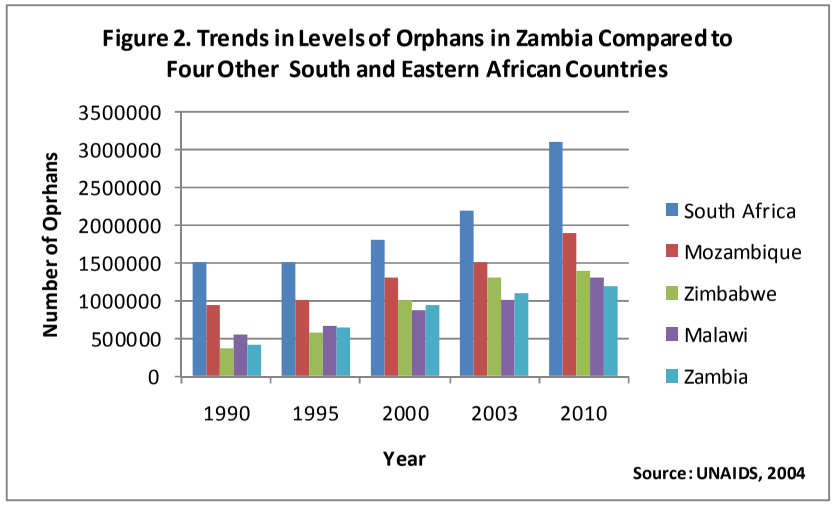
Figure 2. Trends in Levels of Orphans in Zambia Compared to Four Other South and Eastern African Countries
Number of Oprhans
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
1990
1995
2000
2003
2010
Year
South Africa
Mozambique
Zimbabwe
Malawi
Zambia
Source: UNAIDS, 2004

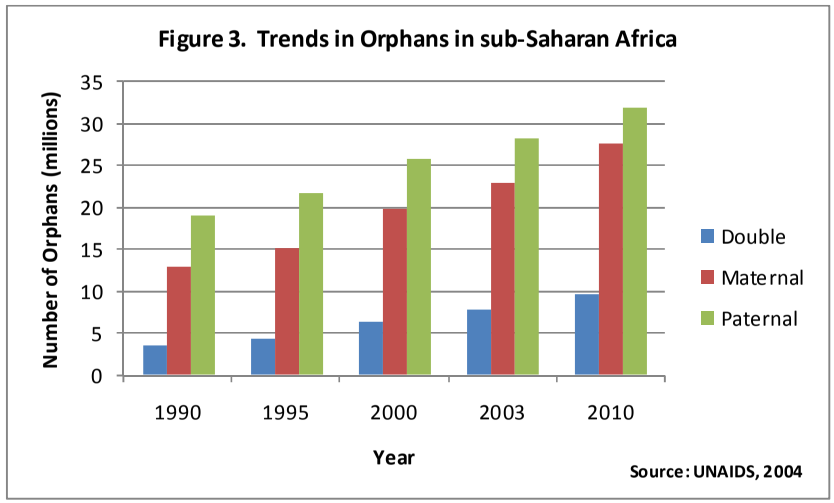
Figure 3. Trends in Orphans in sub-Saharan Africa
Number of Orphans (millions)
35
30
25
20
15
10
5
0
1990
1995
2000
2003
2010
Year
Double
Maternal
Paternal
Source: UNAIDS, 2004

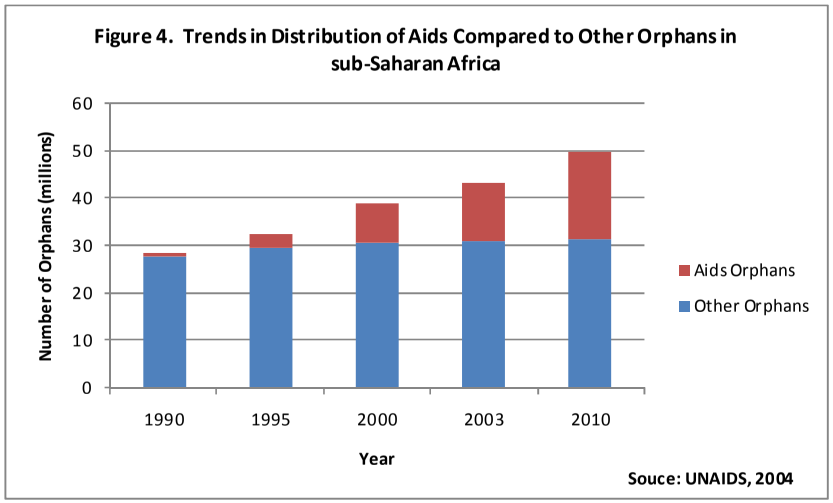
Figure 4. Trends in Distribution of Aids Compared to Other Orphans in sub-Saharan Africa
Number of Orphans (millions)
60
50
40
30
20
10
0
1990
1995
2000
2003
2010
Year
Aids Orphans
Other Orphans
Souce: UNAIDS, 2004

I answer this question by examining Zambian statistics, as well as those for the SSA sub-region. With a population of about 12 million people Zambia has an HIV/AIDS prevalence rate of 17%, a total fertility rate 6 children per woman and currently carries an HIV/AIDS orphan burden of about 710, 000 children (60% of all orphans). The general increase in single and double orphans is not unique to Zambia, but closely mirrors demographic trends in other neighboring countries in East and Southern Africa such as Zimbabwe, Malawi, Mozambique and South Africa (Figure 2). In the SSA subregion, overall number of orphans and the proportion of orphans to non-orphans has sharply increased between 1990 and 2003 and is predicted to follow a similar trend through 2010 (Figures 3 and 4). The question that often arises is that must we worry about orphanhood or should we focus more on poverty and general deprivation? If Case and Ardington (2006) were right in observing that orphans are more likely to have inferior educational outcomes than non-orphans with whom they live, then the overall volumes of orphans should continue to capture our attention especially in the contexts where formal safety nets are neither universal nor adequate.

Directionality of Fosterage Flows in Zambia (1992 and 1996)

While the emerging orphan crisis and the general prevalence of fosterage in Zambia are well understood, we know little about the direction of fosterage flows. In other words, do fostered children tend to be received in families with fewer children or vice versa? Table 2 shows the concentration indices of fostered children at two time periods, 1992 and 1996. Recall that the index of concentration is set such that positive numbers reflect that smaller-than average families receive comparatively higher proportions of children while larger-than-average families receive smaller proportions of children.

In 1992, about 68% of all biological children were found in households of sizes ranging between 3 through 7 while 66% of all fostered children were found in households of sizes 1 through 4. All household categories contributed positively towards the overall index of concentration except for households of with a total of 5 children (IC= -0.343).

Table 2 Indices of Concentration of Fostered Children in Zambia (1992 and 1996)

	Zambia 1992					Zambia 1996				
			% of Fostered Children		Index of			% of Fostered Children		Index of
Level of Demographic Deprivation	Family Size	Relative Deprivation	% Expected ($E_{i)}$	% Observed ($O_{i)}$	Concentration	Family Size	Relative Deprivation	% Expected ($E_{i)}$	% Observed ($O_{i)}$	Concentration
	1	0.195	4.7	27.54	37.358	1	0.207	5	25.89	32.916
	2	0.39	9.7	20.43	10.111	2	0.414	11.2	23.25	10.63
	3	0.584	12.5	18.07	2.994	3	0.621	14	19.54	2.64
	4	0.779	12.6	14.81	0.552	4	0.828	14.3	11.69	-0.493
	5	0.974	20.2	7.11	-0.343	5	1.035	22.4	7.52	0.506
	6	1.169	12.5	5.45	1.1	6	1.241	11	5.8	1.125
	7	1.364	10.8	2.83	2.472	7	1.448	8.6	2.37	2.309
	8	1.559	7.7	2.09	2.492	8	1.655	6.4	1.9	2.267
	9	1.753	4.5	0.80	2.077	9	1.862	3.7	1.07	1.637
	10	1.948	4.7	0.86	2.564	10	2.069	3.4	0.97	1.764
Total/Average	5.13		100% (N=9714)	100% (N=1870)	61.38	4.83		100% (N=10708)	100% (N=2155)	55.3

Source: DHS, www.measuredhs.com

The overall index of demographic concentration for 1992 is about 61.38 suggesting that informal distribution networks reallocated children from larger to smaller sized households.

In 1996, about two thirds (62%) of all biological children were found in households with a total of 2 to 5 children while four fifths (80%) of all fostered children were found in households of sizes 1 through 4. Again, all household categories made positive contributions to the overall index of demographic concentration except for households of size 4 (index of concentration = -0.493). Like in 1992, about 20% of all fostered children are being raised in families with 4 or more other children. The overall index of demographic concentration in Zambia for 1996 is 55.30 lower than that prevailing four years earlier (61.38). Families with only a single child typically more fostered children (shown by their larger contribution to the overall index, 37.36 for 1992 and 32.92 for 1996). Overall, these results suggest that observed through the lens of family demographic characteristics, the *invisible hand* of informal fosterage appears to have been successful in channeling children into households with fewer children. Should one conclude that informal fosterage systems have been effective in Zambia in buffering inequality among children? Not, necessarily. Even as this data is only for two time periods, it already signals a decline in the index of concentration. It is unclear whether this decline is a response to demographic transitions or economic downturns occurring in Zambia during that time.

Conclusion

This study investigates the effectiveness of informal child fosterage systems in buffering inequality among children in Zambia. Child fosterage continues to be prevalent with at least a quarter of the children in each respective survey growing up with non-biological parents. Results show modest but declining reallocation benefits from fosterage systems. Notably, about a fifth of all fostered children were found in large households. If Case and Ardington (2006) were correct in arguing that orphans often have lower educational attainment than non orphans with whom they live, then the concentration of fostered children in larger households indicates the growing precariousness of the livelihoods of fostered children. It demonstrates the limits of the extended family system to reduce potential inequalities in educational attainment and quality

of life in general for fostered children. These finding supports the call for more systematic formal safety nets. While this study showed that the direction of fosterage flows is consistent with effective buffering, this evidence must be complemented with information about micro-level household dynamics once the children move into foster homes. Future studies should cover more countries over larger time periods to trace the changes in the trends in fosterage directionality and evaluate the impact on the potential for inequality buffering.

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