INTERNATIONAL
Poverty Centre

United Nations Development Programme

Working Paper number 9 November, 2005

Working Paper

CONDITIONAL CASH TRANSFERS IN AFRICAN COUNTRIES

Nanak Kakwani
Director/Chief Economist,
International Poverty Centre,
United Nations Development Programme

Fábio Veras Soares
International Poverty Centre,
UNDP/IPEA

and

Hyun H. Son
International Poverty Centre,
United Nations Development Programme

International Poverty Centre
SBS – Ed. BNDES,10º andar
70076 900 Brasilia DF
Brazil

povertycentre@undp-povertycentre.org
www.undp.org/povertycentre
Telephone +55 61 2105 5000
Fax +55 61 2105 5001

The International Poverty Centre's Working Papers disseminates the findings of work in progress to encourage the exchange of ideas about development issues. Our main objective is to disseminate findings quickly, so we compromise and bear with presentations that are not fully polished. The papers are signed by the authors and should be cited and referred accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the International Poverty Centre or the United Nations Development Programme, its Administrator, Directors, or the countries they represent.

Working Papers are available online at http://www.undp.org/povertycentre and subscriptions might be requested by email to povertycentre@undp-povertycentre.org

ISSN: 1812-108X

CONDITIONAL CASH TRANSFERS IN AFRICAN COUNTRIES

Nanak Kakwani, Fabio Soares, Hyun H. Son
International Poverty Centre – UNDP

ACKNOWLEDGMENTS

This study is being financed by Department for International Development, London. The authors are grateful to its generous financial support. Right from the inception of the study, we benefited a great deal from guidance and interactions with Matthew Greenslade in DFID. For excellent comments and suggestions on the first draft of this paper, we would like to express our gratitude to Matthew Greenslade, Alejandro Grinspun, Bruce Lawson-McDowall, Kalanidhi Subbarao and Eduardo Zepeda. In particular, the authors wish to acknowledge Eduardo Zepeda for his unfailing support which has led to a substantial improvement in the final version of the study.

The findings, interpretations and conclusions presented in the paper are entirely those of the authors. They do not necessarily coincide with the views of UNDP or DFID.

EXECUTIVE SUMMARY

1 AIMS

Poverty affects a large proportion of the population in Sub-Saharan Africa and, far from decreasing, the proportion and numbers of poor people in Sub-Saharan Africa have actually increased over the last ten years. Policies to reduce poverty in Sub-Saharan Africa (SSA) and elsewhere are defying conventional wisdom. Single-focus solutions have proved ineffective. There is an urgent need to learn from both successful and failed experiences that have been tried elsewhere.

This study provides an ex-ante assessment of the implementation of a cash transfer programme conditional on school attendance in 15 Sub-Saharan African countries. Conditional cash transfer (CCT) programmes have been tried in other regions, notably Latin America, with relative success. The two key characteristics of CCT programmes are that they simultaneously act upon the short and long term dimensions of poverty. Therefore we investigate here both the impact of a cash transfer on current poverty and the impact of conditioning the transfer upon school attendance.

The study has two major limitations. A policy to increase school attendance needs to set in place effective incentives to induce decisions favouring school attendance, that is it needs to influence demand factors, but schools need to be there within a reasonable distance and with an acceptable quality, otherwise, enhancing incentives might be a futile exercise. The scope and time frame of this study, as well as the lack of readily available information on the supply of schools in the countries selected prevents us from analysing the crucial supply factors. The second limitation also refers to lack of information. Given that available data sets did not include sufficient and reliable information on income from child labour, we were not able to simulate the effect of conditioning cash transfers upon school attendance and we have to limit ourselves to simulating the effect of increasing income upon school attendance.

Bearing these limitations in mind, three major solid recommendations emerge from the study. First, to be successful in significantly reducing poverty any cash transfer programme will need to be sizeable, in the order of 2 to 8 percent of GDP of the country in question. Second, an increase in income, by itself, would not suffice to significantly increase school attendance, which means that school or any other human capability- enhancing conditionality should be part of any cash transfer programme aiming at a sustained reduction in poverty. Third, given the pervasiveness of poverty in the countries analysed, a broad targeting design might suffice, such as a geographical one, enabling programmes to avoid incurring the high administrative costs that plague heavy targeting schemes.

2 CONDITIONAL CASH TRANSFER IN CONTEXT

CCT programmes have been regarded as a leading-edge social policy tool for their ability in influencing both income of the poor in the short run and for improving human capabilities of the poor in the medium and long run. CCT programmes have been also praised for their ability to focus on the poor, for making it easier to integrate different types of social services (such as education, health, and nutrition), and for their cost-effectiveness. What is more, they can avoid the price distortion that may stem from policies such as food subsidies. Most of these findings have emerged from impact evaluations of many CCT programmes in Latin American, mainly *Progresa* in Mexico, Bolsa Escola in Brazil, *Programa de Asignación Familiar (PRAF)* in Honduras and *Red de Protección Social (RPS)* in Nicaragua.

The success of CCT programmes in some countries is not a guarantee that they can be reproduced in other countries with the same performance. However, they set an important example that can yield an array of best practices and notes of caution regarding many challenges and possible bottlenecks in implementation. A good starting point is to perform a detailed ex-ante evaluation of the possible impact of such programme. But one should always be aware that many relevant questions about the design of the programme can only be answered by ex-post impact evaluations.

It is clear that policymakers face many challenges and trade-offs while designing social programmes. For instance, on the one hand, the emphasis on targeting and conditionality helps programmes maximize their impact and their effectiveness. However, targeting and monitoring increase the cost per beneficiary, which reduces programme's efficiency. On the other hand, designing a programme with a weak or non-existent targeting strategy reduces the cost per beneficiary but also leads to leakages to the non-poor, driving down its impact and effectiveness. In addition, targeting and conditionality put pressures on the total budget

and reduce the effective value of the transfer to the targeted population, which in turn also decreases the impact of programmes. This is so because the reduced effective transfer might not be enough to cover either the direct cost of the conditionality or the opportunity cost to beneficiary households for complying with conditionalities.

An ex-ante evaluation may help to decide the order of magnitude of the necessary transfers for the desired impact, the targeted areas and population, as well as to offer an idea of the impact one can expect given the design of the programme. This study aims to contribute in this area, offering a first approximation of the impacts of a CCT programme on poverty and school attendance in 15 Sub-Saharan African Countries through exploring different budget scenarios and targeting strategies. The study is limited to the demand aspects. Due to lack of readily available information, we do not look at all into the availability and quality of schooling facilities. So we have no choice but to assume that supply side constraints, including quality of schools, have been already resolved.

3 METHODOLOGIES

The study utilizes the following budget scenarios and targeting strategies to assess the impact on poverty and school attendance.

Transferring a share of GDP: This scenario is based on the case where the budget is given by the percentage of GDP.

(A.1) Universal targeting: This scenario estimates the impact of 0.5 percent of GDP spent on every child belonging to one of the three age-groups; 5-10 years, 11-13 years, and 14-16 years.

(A.2) Poor and geographical targeting: This scenario attempts to capture the impact of having 0.5 percent of GDP spent only on poor children and children in rural areas.

(A.3) Progressive targeting: In this scenario, the study estimates the impact of 0.5 percent of GDP budget being spent on all the children aged 5 to 16 with a uniform transfer and with a transfer value that rises 5 percent with the child's age.

(B) Transferring a proportion of the national poverty line: The study attempts to assess the impacts of transfers with values of 20 percent, 30 percent, and 40 percent of the average national poverty line.

In the poverty simulation approach, it is assumed that transfers given to children are pooled within families and distributed to each member so that every member enjoys the same level of welfare. It is further assumed that all the transfers received by families are spent on consumption goods. So the benefits received by the families are added to the family's total consumption expenditure which, on dividing by household size, gives per capita family expenditure after the transfer. The new poverty estimates are derived using per capita family expenditure after the transfer, which is then compared with the poverty estimates based on the family's per capita expenditure before the transfer.

Additionally, the study attempts to assess whether the outcome of cash transfer conditional on school attendance would be pro-poor, even in the case of a universal targeting

of children – which could bring down the cost of targeting. This universal targeting is then compared with perfect targeting which may be regarded as the ideal policy for poverty reduction. In the study, the impact of universal targeting as well as perfect targeting is estimated using the Pro-Poor Policy (PPP) index proposed by Kakwani and Son (2005). The study finds that the values of PPP indices in conditions of perfect targeting show little difference from the values of indices resulted from universal transfers. This suggests that perfect targeting may not be necessary in cases such as these 15 African countries, where poverty is extremely high.

As for school attendance, this study uses a probit model to: (i) investigate the determinants of school attendance based on a household demand for education; (ii) simulate the impact of the cash transfer based on the scenarios and targeting strategies highlighted above in terms of the probability of children's attendance at school in the absence of conditionality.

4 PROFILES OF CHILDREN IN AFRICA

The 15 African countries used in the study include: Burundi, Burkina Faso, Côte d'Ivoire, Cameroon, Ethiopia, Ghana, Guinea, Gambia, Kenya, Madagascar, Mozambique, Malawi, Nigeria, Uganda, and Zambia. Although the choice of the 15 selected countries is governed by the availability of household survey information, the sample includes both west and east African countries. Thus, the sample countries are broadly representative of the whole of Sub-Saharan Africa.

According to data provided by the study, children aged between 5 and 16 years old make up around 34.7 percent of total population in the 15 study countries. While the age-group of 5-10 years constitutes a fairly large percentage of the population in Africa, the other age-groups, 11-13 and 14-16 years old, contribute relatively small proportions to the total population, 8.0 and 7.5 percent, respectively.

Regarding poverty among the children, the study shows that in all 15 countries, the incidence of poverty among children aged 5-16 years is higher than or close to the national average. Moreover, poverty among children not attending school is far higher than that among children in general. In most countries in study, around two-thirds of children not attending school are found to be living below the poverty thresholds. This suggests that children are not attending school partly due to lack of resources, directly or indirectly, to pay for schooling and/or partly due to the absence of nearby schools of adequate quality. As mentioned previously however, this study builds upon the presupposition that takes the supply-side issues as given, and focuses on addressing the issues related to the demand-side. Moreover, the analysis of the supply-side issues is constrained largely because of lack of information on the distance to nearest school or a good-quality school. Furthermore, the study finds that children living in rural areas are poorer than those living in urban areas.

5 POVERTY SIMULATIONS

Using different simulation scenarios, the study attempts to quantify the impact of a transfer on poverty reduction at national level. The major findings emerging from this study can be summarized as follows:

(i). The transfer of 0.5 percent of GDP to school-age children has small impacts on the headcount ratio but its impact increases rapidly as we move to the poverty gap ratio and severity of poverty index. Since the severity of poverty index gives greater weight to the poor who are living far below the poverty line, a larger reduction in this index implies that the cash transfers have greater impact on poverty reduction among the ultra-poor than the poor. Thus, the impact of a CCT programme should not be judged merely on the number of people that can be removed from conditions of poverty through the programme. As a matter of fact, a CCT programme provides greater financial relief to those who are still unable to escape from poverty because extra value of money is much greater to them. The headcount ratio is completely insensitive to any improvement in the standard of living of those who could not be removed from conditions of poverty by such CCT programmes.

(ii). Although it appears that 0.5 percent of GDP is too small to have a significant impact on national poverty (particularly when measured by the headcount ratio), it should be stressed that these estimates only capture the short-term effect on poverty of the financial transfer.

(iii). Targeting the children from poor households leads to much greater poverty reduction at national level as the per capita benefits received by the poor recipients' families are likely to be higher under targeted programmes than universal ones. Nevertheless, the total benefits of the transfer under the targeted programmes will be partly offset by administrative costs of identifying the poor. Another message emerging from the study is that the impact on poverty is generally greater if the transfer is given only to rural children rather than to all children. This suggests that if targeting poor children is likely to bear too much budgetary burden in terms of the administrative costs of identifying the targeted subjects, then targeting only rural children is not a bad option in order to achieve a better poverty outcome than the universal programme.

(iv). One of findings in the study suggests that the average pattern of outcomes of children not attending school exhibits a U-shape curve, falling sharply until 11 years old and then rising steadily after 11 years old. Based on this finding, we assess the impact of poverty reduction if 0.5 percent of GDP is transferred to children aged between 5 and 16 in a progressive manner. More specifically, we increase the transfer by 5 percent for every extra year of a child's age. This is because children at a higher level of education are more likely to drop out of achool or to encounter the higher opportunity costs of attending school. This simulation result suggests that progressive transfer is effective if only poor children are targeted. Nevertheless, there is little difference in poverty reduction impact between progressive transfer and equal transfers when all children are targeted.

(v). In the poverty simulation, the size of transfers is increased to assess how much difference the larger size of transfers makes compared to the transfer of 0.5 percent of GDP. Alternative simulation scenarios used in the study are based on 20 percent, 30 percent, and 40 percent of the average national poverty line. The simulation results show that transfers proportional to the average national poverty line have far greater impact on national poverty reduction than the transfer of 0.5 percent of GDP.

(vi). Finally, although the transfer programmes based on 20 percent, 30 percent, and 40 percent of the average national poverty line do have much greater impacts on poverty reduction at national level than the transfer programmes based on 0.5 percent of GDP, they are very expensive and may not be affordable for most countries in Africa. For Ethiopia, the poorest country included in the study, a programme based on the 40 percent of its average national poverty line would require a minimum expenditure of almost 8.31 percent of GDP. A question then remains as to whether a poor country like Ethiopia is able to afford this fiscal burden (of as much as 8.31 percent of its GDP). Even a country like Côte d'Ivoire, the most affluent of the 15 countries, has to bear burden of about 2.8 percent of its GDP that will be foregone if national poverty is to be reduced to the maximum level. This is not a small cost for any country in Africa to bear. This may be part of reason why governments tend to set a fairly low benefit level. As a result, however, there will be an insignificant reduction in the impact of the programme on poverty.

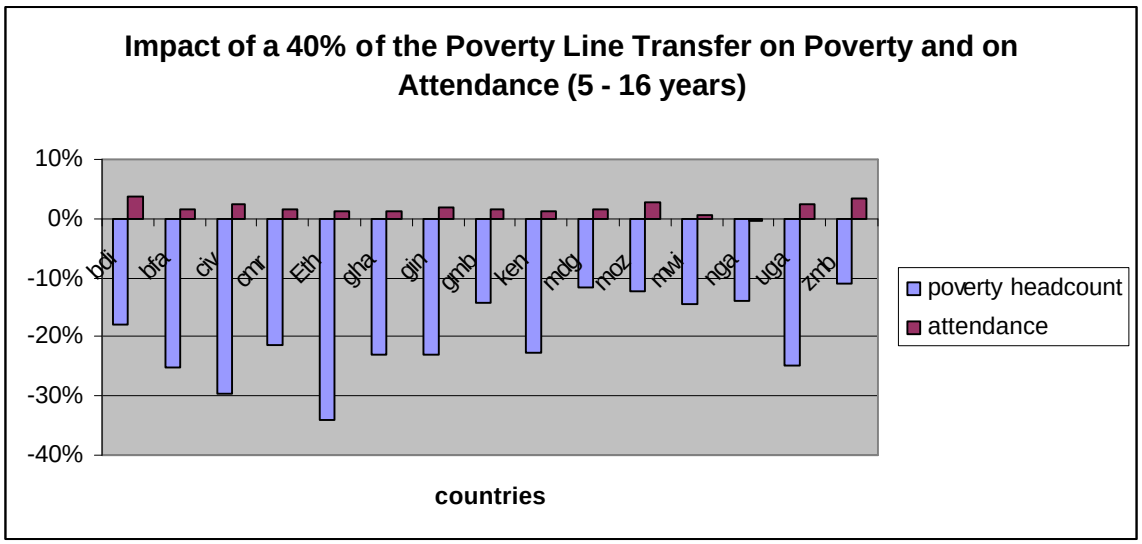
6 DETERMINANTS OF ATTENDANCE AND SIMULATION

The study also attempts to isolate factors that are likely to influence children's school attendance due to a given level of transfers. These factors were identified through a probit regression technique. Major findings stemming from the regression model can be synthesized in three points:

(i). Per capita expenditure seems to be an important determinant of the demand for education in Africa as well as the stock of human capital of the head of the household. In general, girls are worse off than boys in view of school attendance, even after controlling for other factors that confuse the issue; this is indirect evidence that there is a higher opportunity cost for girls to attend school and/or some cultural traits that discriminate against them. Female family headship improves both boys' and girls' school attendance. The human capital of the head of household is another important determinant of school attendance as well as the fact that the child is offspring of the head.

(ii). The impact of cash transfer (without conditions) is very modest when the budget for the CCT programme is set at 0.5% of the GDP. The impact increases with simulations using percentages of poverty line, especially for the 40% benchmark. However, they achieve a maximum of 3.6% increase in attendance for Burundi. These results suggest that conditionalities are a necessary ingredient of cash transfer programmes if the aim is to break the vicious intergenerational cycle of poverty[1]. Interestingly, initial levels of school attendance have no impact on attendance due to a cash transfer programme: initial conditions (levels of current attendance) are not inversely related to the gain in attendance due to a cash transfer programme.

(iii). The figure below summarizes the impact of the largest cash transfer that we simulate. We can see that when 40% of the average national poverty line is set as the value of the transfer, we achieve a sizable effect on poverty reduction. However, even with such a relatively large transfer, the impact on the attendance is very modest. Therefore, a cash transfer programme without conditionality is not enough to lead to a substantial increase in school attendance.



Source: Authors' calculation.

CONDITIONAL CASH TRANSFERS IN AFRICAN COUNTRIES

1 BACKGROUND CONTEXT

It is increasingly being realized that poverty is the most serious problem in large parts of the developing world. According to the 2000/2001 World Development Report, around 1.1 billion of the world population are living on less than $1 a day. New global poverty estimates produced by the International Poverty Centre show that, based on nutritional norms, almost 1.4 billion people lived in poverty around the world in 2001. During the 1990s, in Sub-Saharan Africa (SSA hereafter) both average income of the region and the percentage of the people living below the $1 poverty line scarcely changed over the decade (World Bank database, 2004). Because the population is still growing fairly rapidly in the region, the number of poor people rose substantially over the decade.

Rising concerns about poverty is well reflected in one of the Millennium Development Goals of halving poverty between 1990 and 2015. Achieving that goal would require an annual reduction in poverty of around 2.74 percent a year for the 25-year period. The most effective way to reduce poverty in long term might be through economic growth. But economic growth so far has not been sufficient in most countries in SSA to make a significant dent in high rates of poverty. For the SSA region, halving poverty by 2015 would be an ambitious goal to achieve, either because it is not growing fast enough or because what growth it is experiencing is not being translated into poverty reduction at a rapid rate. What is worse, because of relatively slow growth in the 1990s, most countries in SSA will have to reduce poverty by over 3 percent per annum in the 2000s to reach the poverty reduction goal in 2015. If the relationship between growth and poverty is as weak as it has been in the 1990s, most countries in SSA will fall far short of the ambitious goal they have set for themselves.

It appears clear, then, that to reach the Millennium Goal of poverty reduction, countries in SSA will require specific poverty reduction strategies to achieve significant long-term reduction in poverty. Yet, poverty reduction strategies alone are not sufficient enough to generate economy-wide growth. What is actually required are growth-oriented macroeconomic policies integrated with structural reforms, as well as social policies. Structural reforms improve productive capacities and promote the dynamic efficiency of resource allocation in the economy, whereas social policies ensure that the benefits of economic growth are shared broadly across all segments of the society.

Conditional cash transfer (CCT) programmes can be one such policy option. CCT programmes impact on poverty through a channel by which poor households build up their assets by means of their investment in human capital, which plays a pivotal role in poverty reduction and accelerated growth in the long term (ILO 2001). Needless to say, the programmes also have a short-term effect on poverty, both through the immediate effect of cash transfers on household incomes and through positive multiplier effects of the increased household budget.

This study attempts to see the extent to which CCT programmes have impacts on achieving educational goals as well as poverty reduction in the context of SSA. Not only are the programmes able to promote the economic opportunity of poor households, but they can also enhance the security and dignity of these households. Hence, CCT programmes can be viewed as an innovative approach to reducing poverty, to enhancing the human capital

of the poor and to combating child labour in the SSA region. The study investigates the potential *ex-ante* impact of this innovative approach on education and poverty if implemented in the African context.

2 CONDITIONAL CASH TRANSFERS

Conditional cash transfer programmes have been regarded as an effective way to reconcile safety nets (or more generally social assistance policies) with investments in human development benefiting the poor. The basic idea behind the conditionality of these programmes is that the hand-over of some cash to bring families out of poverty is an insufficient way to tackle poverty in the long run, particularly, to bring the future generations of poor families out of poverty. To avoid this shortcoming, conditional transfers have been devised to improve human capital among poor families. Their aim is to give monetary and moral incentives to families so that they fully utilize the social services on offer. In economic terms, their objective is to tackle the lack of utilization of important public services, assuming that those incentives would be enough to raise some awareness of the importance of education (or other public services on offer) for those families to achieve the full realization of their potential . In some cases, when reduction in the incidence of child labour is one of the objectives of the programme, the compensation package should be large enough to compensate for the monetary loss incurred when the contribution of child labour to the welfare of the family ceases.

Several Latin American countries have been pioneers of CCT programmes. In particular, countries where large-scale conditional cash transfers have been implemented are Mexico and Brazil. This section looks into the general features of these two programmes.

2.1 BRAZIL'S *BOLSA ESCOLA*

Brazil was the first country to start CCT programmes, as early as 1995 at the municipal/state level as opposed to the Federal level. Although Bangladesh's Food for Education (FFE) programmes date back to 1993, they are not cash transfers but in-kind transfers. Brazil's CCT programmes were aimed at increasing attendance at school and curbing drop-out rates among children aged 7-14. Therefore, the educational dimension of human capital was the main focus of these programmes.

Brazil's main Federal CCT programme was preceded by relatively successful programmes at the local level. Since the mid-1990s, Brazilian municipalities had introduced cash transfers conditional on school attendance, with relatively good results and high public visibility. Sedlacek (2000) reported that in 1998, more than 60 local CCT programmes were already operational in the country, covering around 200,000 households. In 2001, President Cardoso was responsible for the introduction of *Bolsa Escola* at the national level, building upon a smaller programme which transferred resources for municipalities to implement their own CCT programmes. The programme's budget was around 0.2 percent of Gross National Product.

The *Bolsa Escola* transferred monthly payments to poor households with children aged 6-15 enrolled in grades 1-8, on condition that they had at least 85 percent school attendance. The transfers were addressed to the female head of the household, with no intermediation through sub-national budgets. The size of the transfers was around US$5 per child, up to

US$15 per household. There were no variations in the transfers by age, gender or geographical location, but the decentralized fiscal arrangements in place in Brazil allowed the national programme to be combined with local equivalents.

For the operation of the programme, the government established a poverty line of US$30 per month per person, half the minimum wage at the time when the programme was established. Estimates of the target population in each municipality were calculated on the basis of national household sample surveys, the population census and the annual School Census, in order to determine numerical parameters of coverage. However, the implementation of targeting the household level was left to the municipal governments, with no detailed requirements from the federal administration other than the estimated coverage. As a result, targeting practices at local level have shown considerable variations. In some places, the identification of beneficiaries was carried out by the schools themselves; some municipalities reported having implemented geographical targeting, and others implemented self-targeting. In any cases, quite sophisticated information and management systems were developed to prevent multiple registers for the same household. But, MEC (2002) reported that there appeared to be repeated cases of exclusion of potential beneficiaries because the municipality had reached its coverage estimate. This problem might have come from failures in the estimates on the one hand, but on the other hand they could also have been caused by the inaccurate targeting methods employed.

The *Bolsa Escola* was coordinated by the Ministry of Education and the operation of the transfers was contracted out to a public bank with wide representation in the country, through its own branches or franchise outlets in local stores. This institutional location emphasizes the primary education focus of the programme. Its rationale was linked to the efforts to achieve universalization of basic education in Brazil. In fact, net enrolment rates in grades 1-8, the mandatory education cycle, had increased from 87 percent to 96 percent from 1994 to 1999 (MEC 2003) and the *Bolsa Escola*'s main stated objective was to keep these children in school.

The *Bolsa Escola* programme was initiated with domestic resources, but by the end of 2001 a US$ 500 million loan had been contracted with the Inter-American Development Bank for improving the programme in respect to targeting, impact evaluation, institutional organization and management (IDB 2002). The *Bolsa Escola* was replaced in October 2003 by *Bolsa Família* which merged all CCT programmes and some social assistance cash transfers into a single grant by family to avoid having competing benefits in the same household and to integrate the conditions of different programmes. In absolute numbers, it is now the largest CCT in place, benefiting more than five million households.

2.2. MEXICO'S *PROGRESA*

The first national level CCT programme was pioneered by Mexico in 1997. This was the most comprehensive programme of education, health and nutrition, called *Progresa*. It was a targeted initiative, aiming at replacing the highly regressive and urban-biased general food subsidies in Mexico (Scott 1999). The innovation of *Progresa* was related to its integrated approach to alleviating extreme poverty and promoting human development. It consisted of cash and in-kind transfers to beneficiary households, conditional on school attendance up to the age of 18 by the children of those families and regular visits to health centres by all its members.

Through its educational component, the largest one in budgetary terms, *Progresa* granted cash transfers every two month for each one of the beneficiary children enrolled in grades 3-9, up to a fixed maximum amount per family, and additional cash support for school material to primary school students. Its health component combined primary health care, informative sessions and periodical check-ups for individuals of beneficiary households. The nutrition component included cash transfers and nutrition supplements to children under the age of five, pregnant and lactating women (SEDESOL 1999). The size of the transfers was not small and varied from US$ 10 to US$ 60, depending upon the programme component and the beneficiary children's grade and gender (Ayala 2003). Skoufias et al. (2001) point out that the cash transfers provided by *Progresa* averaged 20 percent of the prior income of the recipients and might have had a significant impact on the local economies of the areas served.

Besides this integrated approach, *Progresa* had a positive gender bias, for the cash benefits were addressed to the female heads of the recipient households. Moreover, the value of cash transfers for secondary students was around 15 percent higher for girls than for boys, in a clear recognition of the higher risks of drop-out faced by them (CEPAL 2002) and the positive external benefits generated by higher female educational attainment.

The apolitical claims of *Progresa* were related to its targeting and transfer mechanisms, intended to eliminate the discretional management of public funds of which previous programmes had been commonly accused. The selection of recipient households was carried out in three steps (Skoufias et al. 2001). As the first step, communities to be targeted by the programme were selected on the basis of a composite measure of deprivation derived from census data. This provided the criteria for a geographical targeting of highly deprived areas. The second step consisted in the selection of beneficiary households within the targeted communities, on the basis of socioeconomic data collected for all households in the community. The central criterion used in this step was "an index that parsimoniously discriminated between the poor and the non-poor. The index was a weighted mean of the ratio of family members to the number of rooms in the household, the age of the household head, the dependency ratio, the level of schooling and occupation of the household head, the number of children aged 5-15 not attending school, the number of children under 12 years, and binary variables characterizing the housing and the asset holdings of the household." (Skoufias et al. 2001, pp. 11) The final step of targeting in *Progresa* involved an element of community participation. Before their actual inclusion in the programme, the list of selected households was presented in a community meeting which reviewed the accuracy of the selection.

The actual transfers were directly sent from the national programme coordination to recipients, without passing through state or municipal budgets. Beneficiaries would collect their transfers every other month from organizations contracted for this purpose, such as post office branches or banks.

Progresa adopted a gradual approach to implementation. In the initial stage, it was implemented in 11 states and covered 300,000 households in rural areas. In 2002, now under the name of *Oportunidades*, the programme reached more than 4 million households in all 31 Mexican states, including urban areas (SEDESOL 2003). Its coverage today represents around 20 percent of the Mexican population (Rawlings and Rubio 2003).

The programme's budget was entirely funded by domestic sources and grew rapidly as *Progresa* expanded. In 2002, it reached US$ 1.8 billion, around 0.3 percent of the country's gross domestic product (Ayala 2003).

Progresa became gradually the centrepiece of the targeted poverty reduction strategy in Mexico. The programme is now well established and widely considered as a successful model in the development practices of Latin America.

2.3 IMPACTS OF CCT PROGRAMMES: WHAT DO EVALUATIONS SAY?

Initial evaluations of CCT programmes have found them to have positive effects on school enrolment and nutrition patterns (Morley and Coady 2003; Guerrero 2001; Sedlacek et al. 2000). Most of these positive effects, and therefore, the good reputation of CCT programmes come from *Progresa* evaluations carried out by IFPRI. The evaluation of *Progresa* showed that there was a significant increase in enrolment of boys and girls, particularly for the latter, and at the secondary level. Most of this increase was achieved through children, especially boys, working less. As for the health dimension, both adults and children showed improvement in health indicators. Children receiving *Progresa* have a 12% lower incidence of illness, and adults reported a 19% decrease of sick or disability days. *Progresa* also reduced the probability of stunted growth in children aged 12 to 36 months and had a significant impact on nutrition.

A positive effect on child labour cannot be taken for granted, as school attendance can be frequently combined with work (Bourguignon et al. 2002). Cardoso and Souza (2003) showed that in the case of Brazil, the decentralized CCT programmes in place before the federal *Bolsa Escola* had a significant impact on increasing school attendance for both boys and girls, and confirming the assumptions of Bourguignon et al.'s (2003) ex-ante evaluation, they also found that the programmes have reduced the incidence of only work child and no work/no school child and increased the incidence of only school child and school and work child. The impact on poverty reduction seems unclear. In the short term, the magnitude of effects on poverty rates varies by programme, with *Progresa* yielding the most significant results. Bourguignon et al. (2002) find very little impact on poverty and inequality for *Bolsa Escola* due to the small amount of the transfer. In the long-run the translation of higher educational attainment into higher earnings cannot be taken for granted because of countries' absorption capacity of skilled labour in the economic structure and general rates of return to education (Bourguignon et al. 2002, CEPAL 2002). This is particularly worrying in the case of Africa, where some studies have found small returns to education (particularly for primary education) in the rural sector, where the bulk of the problem of school attendance is found (Bennel, 2002).

Although they began with domestic funding both in Mexico and in Brazil, CCT programmes have received substantial support from the international community. International development agencies are unanimous in highlighting CCTs as one of the best practices of social protection in Latin America. This support is not only rhetorical, but also practical, as considerable funding has been given to the dissemination of programme experiences, expansion of existing initiatives and replication of similar programmes elsewhere. To date, there are records of at least nine countries with large-scale CCT programmes in the region, either being formulated or already under implementation. These countries are Brazil, Bolivia, Chile (*Subsidio Unitario Familiar*), Colombia, Costa Rica, Ecuador (*Beca Escolar*), Honduras (*Programma de Asignación Familiar*), Mexico, Nicaragua (*Red de Proteccion Social*), and Argentina (*Bono Escolar*). Countries like Guatemala and El Salvador have initiated small-scale pilot programmes.

All in all, CCT programmes appear to have come to occupy a central place in the poverty reduction agenda of Latin America. CCT potential, which cannot be denied, provides scope for exploring whether CCT programmes can be implemented in the SSA region.

3 COSTING CCT PROGRAMMES

It is a common criticism that in administrative terms CCT programmes are very costly. Much of the budget is spent on simply getting the resources to poor families. Consequently, the cost per unit of income transferred can be substantially large. CCT programmes seem to be administratively complex as they require resources to undertake targeting of transfers and to monitor the recipients' actions. Making transfers conditional on the recipients' actions also implies that their private costs in participating in the programmes are not trivial. For instance, in workfare programmes, households incur an opportunity cost in terms of forgone income opportunities; queuing to receive benefits also involves similar opportunity costs. Households may also have to incur financial and time costs associated with obtaining certifications required for the programme, such as a national identity card and proof of residency or of disability and with travelling to and from programme offices. It is important not to underestimate these private costs when designing or evaluating transfer programmes.

As Coady, Grosh, and Hoddinott (2002) have stated, it is difficult to identify total costs even if programmes are ongoing. The difficulty mainly arises due to lack of adequate data available on total costs. It will be even more difficult if one tries to estimate total costs before implementing a CCT programme. Of CCT programmes that are already in progress, Mexico's *Progresa* is the only one that provides relatively detailed costs. A limited amount of information is available for the *Red de Proteccion Social* (RPS) programme in Nicaragua and for the Food for Education (FFE) programme in Bangladesh.

Coady, Perez, and Vera-Llamas (2000) have identified four broad types of costs. The first consists of administrative costs related to geographical targeting. The second is the costs associated with household proxy means targeting, whereas the third type arises from the making transfers conditional on household actions. The last type of cost is incurred in monitoring ongoing programmes. Some of these factors, such as the administrative costs, may be considerably high in the programme's initial set-up. In the long run, however, they will be spread over a longer period and their ratio to total transfers is likely to diminish rapidly. Other costs arise from certifying, monitoring, and running the programme. To illustrate the magnitude and importance of these costs, it is interesting to look at the experience of Mexico, Honduras and Nicaragua. In Mexico,during the first year of implementation of the *Progressa,* 1997, the cost of targeting represented 65% of the total cost of the programme, whereas the cost of monitoring conditionality was 8% of the total and actual delivery of transfers was 8%. By 2000, the major component was the actual transfers (41%), followed by monitoring of conditionalities (24%) and the targeting costs were down to 11%. A similar cost share is observed for the *Programa de Asignacion Familiar – PRAF* in Honduras and for the pilot of the *Red de Protección Social* (*RPS*) in Nicaragua. The major difference is that the latter two programmes also have supply transfer to boost the infrastructure of the social services in the selected communities (Caldés et al., 2004).

Coady, Perez, and Vera-Llamas (2000) estimated the programme and private costs per peso amount transferred by *Progresa*. They found that the total cost is just 9% of the

programme, which is quite low by any standards. They also found that recipients' private costs arising from the makng transfers conditional were as much as 27 percent of the programme, which is considerably high compared to programme costs. What this suggests overall is that it is of paramount importance to have a return from such high costs; the conditioning costs should produce improved human capital outcomes, whilst the targeting costs should be able to produce a return that provides more transfers to the poorest and most needy individuals or households.

The administrative costs of the Nicaraguan RPS programme were found to be much higher than those of Mexico's *Progresa* (IFPRI, 2002). In the RPS programme, the total costs – including those of programme design, administration, and follow-up evaluation – exceeded $2 million during the 1994-2001 period. Comparing this figure with the size of the total programme cost ($10 million for 2001-02), administrative costs in total amount to at least 25 percent of the total budget. IFPRI (2002) argues that the total administrative costs are likely to rise by at least $500,000 over the remainder of the life of the programme. As RPS is a small programme, the administrative costs per dollar transferred are high. Since leakages into overhead are negatively related to the size of a programme, any country seeking to have a CCT programme must take this factor into account in deciding on the optimal size of the programme (Morley and Coady 2003)

The FFE programme in Bangladesh is another programme for which an estimate of administrative costs is available. The programme distributes grain to increase school attendance. Unlike other CCT programmes, this type of in-kind transfer programme is expected to drive up total administrative costs because of the transport costs to deliver a physical commodity. According to a recent estimate, total administrative costs for the FFE programme comprise as much as 37 percent of the total cost of the programme. This high figure casts serious doubts on the feasibility of the use of food as a transfer medium.

A prime example of having a low administrative cost is the *Bolsa Escola* programme in Brazil. It operates under a system that achieves low costs of making transfer payments to both the beneficiary and the donor. More specifically, the mother of each beneficiary is given an electronic cash card and an account at a large federal bank. Monthly payments are made through electronic transfers between this account and the national treasury. The mother is, then, able to withdraw benefits at any of the local banks or other authorized commercial financial outlets. While this approach substantially reduces the transportation and time costs to beneficiaries of the transfer, the system works only if the financial banking system is well established, an advantage which a vast majority of developing countries in Africa do not enjoy.

4 AIMS AND LIMITATIONS OF PRESENT STUDY

4.1 ASSESSING THE PROGRAMME IMPACTS THROUGH SIMULATIONS

Conditional cash transfers have two broad objectives: (i) Reducing poverty in the long run through the enhancement of capabilities obtained by the conditioning of the cash transfer and (ii) Reducing poverty in the short run through cash/in-kind transfers. As such, CCTs need to make two decisions. First, it is necessary to determine the eligibility criterion. This is usually established in terms of socioeconomic attributes such as income level, age, area of residence,

family composition and the like. The other decision is associated with the choice of the conditionality itself, i.e. choosing the expected behaviours that the CCT programme intends to achieve. Examples of these include attendance at school, regular visits to health centre, immunization, and so forth.

The main focus of this study is twofold. First, it explores the impact of cash transfers on poverty. It evaluates the impact of different transfer amounts and different target populations on poverty reduction. The cash transfers are given to families with children. It must be recognized that all transfers given to families may not be spent on children. The household surveys do not provide any information about the distribution of resources within households. In the measurement of poverty, it is commonly assumed that all members of household receive the resources proportional to their needs so the families tend to equalize the welfare of each member. Following this practice, we assume that the transfers given to children are pooled within families and distributed to each member so that every member enjoys the same level of welfare. This assumption allows us to calculate the impact of transfers on aggregate national poverty among individuals, subject to the limitations implied by the assumption.

Second, this study develops a probit model to explore the determinants of school attendance in Africa. Using this model, we simulate the impact of cash transfers on school attendance. The basic aim is to know that if we give unconditional transfers to families, how much impact there will be on school attendance. If this impact is small, then we shall need to pay greater attention to conditionality and implementation of programmes.

4.2 SUPPLY-SIDE CONSTRAINTS

It should be noted at the outset that the focus of this study is on school attendance and poverty outcomes provided that the importance of supply-side issues is taken as given. Prior to considering a CCT programme for education as a policy response to poor educational outcomes, the study presupposes that there are no such supply-side constraints in terms of access to a basic quality of educational services. Our major concern lies with the fact that, even with widespread access to a basic quality of education, poor households often cannot afford to incur the direct and indirect costs of attending school, such as tuition fees, travel costs, and the opportunity costs of participating in the labour market. In this respect, transfers conditional upon school attendance seem to a feasible policy instrument from the perspective of helping children from poor families to enrol in school and to gain permanent tools to earn their way out of poverty.

Although in this study, the CCT approach to increasing school attendance is based on the assumption that low school attendance is perceived as a demand-side problem rather than a supply-side one, it may be true in the context of African countries that children, in particular in rural areas, face problems associated with supply-side in conjunction with demand-side. More specifically, there may not be enough schools, classrooms, or teachers to offer adequate education to those who need or want them. In such circumstances, pouring a amount of resources into a CCT programme would not be able to achieve the educational objective. With a limited budget for the CCT programme, it is worth asking what is the best way to get children into school.

It is worth noting that there have been CCT programmes with a supply-side component. This experience has been attempted in low-income Latin American countries, particularly, in

Nicaragua (*Red de Protección Social*) and Honduras (*PRAF*)[2] where, besides the demand component of the cash transfer, there were also investments in infrastructure.[3] A part of the programme's budget was set aside for building schools and health centres as well as improving school conditions in the way that teachers, parents and pupils believed could improve the quality of teaching. In very poor countries with reduced social service infrastructure, CCT programmes that target the demand-side should be one element of an overall poverty reduction strategy and very well integrated with it in order to avoid policy inconsistency and wasting resources.

This latter point is extremely important for Sub-Saharan African countries for two reasons: i) it is important to assess the existence of infrastructure before setting up a CCT programme. If there is no school to go to, there is no point in imposing this condition; ii) it is necessary to discover if the lack of demand is due to the family's short-term need for the children's labour, either in farming or in domestic chores, rather than due to a deep belief that there is nothing good about going to school, i.e., that the quality of the school is so low that the abilities learned there are either of no use in the daily life of African children or that they are not taught in a meaningful way. If one of these two reasons prevails, then an infrastructure component should be at heart of any African CCT programme.[4] However, it is outside the scope of present study to deal with supply-side constraints.

5 DATA AND METHODOLOGY

This study will utilize the unit record household data sets from 15 African countries. With the exception of Guinea, the data sets cover 1996-2001.[5] Although the choice of the 15 selected countries is governed by the availability of household survey information, the sample includes both West- and East-African countries. Thus, the sample countries are broadly representative of the whole of Sub-Saharan Africa. For this study, a poverty line is required for each of the 15 countries and the study uses national poverty lines. These have been obtained from various poverty assessment reports produced by the World Bank. As these poverty lines do not take into account different needs of household members by age and gender, the poverty lines used in this study have been modified to account for equivalence and household economies of scale (Kakwani and Subbarao, 2005).[6]

5.1 POVERTY SIMULATION

For purposes of this study, children are classified into three different age-groups:

(i). Children aged between 5 and 10 years

(ii). Children aged between 11 and 13 years

(iii). Children aged between 14 and 16 years

To estimate the impact of transfers on poverty, this study focuses on three aspects of poverty – incidence, depth, and severity. These are described according to the general class of Foster-Greer-Thorbecke (FGT) (1984) poverty measures (See Box. 3.1). The incidence of poverty

is measured by the headcount ratio, which simply estimates the percentage of population that lives below the poverty line.

The depth of poverty is estimated by the poverty gap ratio. The poverty gap ratio can be defined by the average distance below the poverty line as a proportion of that line, where the average is formed over the entire population, counting the non-poor as having zero poverty gap. Thus, the sum of poverty gaps (aggregated across all individuals) reflects the minimum amount of consumption that needs to be transferred to bring all the poor up to the poverty line.

The severity of poverty measure represents the mean of the squared proportionate poverty gaps. Unlike the headcount ratio and the poverty gap ratio, it takes into account inequality among the poor. The severity of poverty measure is sensitive to the distribution of consumption among the poor in that weights in the calculation are more heavily given to those whose consumption falls far below the poverty line. Hence, the severity of poverty index is more sensitive to change in welfare of the ultra-poor than it is to the moderately poor.

Box 5.1. Foster-Greer-Thorbecke Poverty Measures

The FGT poverty measure can be defined as: $P_a = \int_0^z \left(\frac{z - x}{z} \right)^a f(x)dx$

where z is the poverty line, x is income, and a is the parameter of inequality aversion. When the headcount ratio is used as the poverty measure, $a = 0$. For a =1 and 2, P_a measures the poverty gap ratio and the severity of poverty, respectively.

This study simulates several scenarios of cash transfer of the programme. These scenarios include:

Transferring a share of GDP: This scenario is based on the case where the budget is given by the percentage of GDP.

(A.1) Universal targeting: This scenario estimates the impact of 0.5 percent of GDP spent on every child that belongs to one of the three age-groups; 5-10 years, 11-13 years, and 14-16 years.

(A.2) Poor and geographical targeting: This scenario attempts to capture the impact of having 0.5 percent of GDP spent only on poor children and children in rural areas.

(A.3) Progressive targeting: In this scenario, the study estimates the impact of 0.5 percent of GDP budget spent on all the children aged 5 to 16 with a uniform transfer and with a transfer value that rises 5 percent according to the child's age.

(B) Transferring a proportion of the national poverty line: The study attempts to assess the impacts of transfers with the values of 20 percent, 30 percent, and 40 percent of the average national poverty line.

These scenarios will be used when the study assesses the impacts of cash transfers on poverty and school attendance based on a probit regression model.

5.2 SCHOOL-ATTENDANCE SIMULATION

In order to assess the impact of cash transfers on children's school attendance, we present a model for the household demand for education and highlight the direction of the impact of changes in the determinants of the demand for education. This model tries to capture the preference of the household and its full income constraint in order to derive a demand function for education.

We assess the impact of the household composition and of characteristics of the children and of the head of the household as well as the per capita expenditure of the household on school attendance. The analysis of these effects is carried out through a probit model. The marginal effects are analyzed at the means of the observed variable. And this analysis is focused on the direction of the effect rather than its magnitude – since the latter depends on the level of all other explanatory variables.

After investigating the determinants of the demand for education and its marginal effects, the study simulates the impact of the cash transfers, in the alternative scenarios and targeting strategies listed above, on the probability of children's attendance at school. These simulations do not take into account conditions that might be imposed on beneficiaries and provide lower boundaries for the impact of the cash transfer on school attendance, as measured by differences in probability before and after the cash transfer.

5.3 TRANSFER SIZE USED FOR SIMULATION

According to the experience of existing CCT programmes, the programmes overall make a commitment of between 0.1 percent and 0.2 percent of gross national income (Morely and Cordy 2003). Given that these programmes are established mostly in upper-middle income countries in Latin America (the exceptions being Nicaragua and Honduras in Latin America, and Bangladesh in the rest of the world), the programme sizes for the 15 African countries may have to be much larger than the CCTs that are currently being operated in Latin America. First of all, poverty is much greater in the African countries. Hence, a small-scale version of any programme would have little impact on poverty reduction. What is worse, if poverty in these African countries is deep rather than shallow, then it will not only be more costly but also harder to achieve a significant reduction in poverty from a CCT programme.

For simulation purposes, the study works with various thresholds. These thresholds are meant to be illustrative, to help to understand the implications of targeting for various groups of the children. As laid out in subsection 5.1, hypothetical thresholds adopted for the study are 0.5 percent of GDP, progressive transfers of 0.5 percent of GDP, and 20, 30 and 40 percent of average national poverty lines.

Table 5-1 shows the absolute and relative size of transfers that will be distributed among children if the transfer takes 0.5 percent of GDP. The table reveals that transfers to beneficiary children appear to be very small relative to the average poverty line in most of these countries. On average, the payment per child in the age-group of 5-10 years is less than 10 percent of the average national poverty line, ranging from a low of 2.2 percent in Burundi to a high of 7.1

percent in Madagascar. The payments as percentage of average poverty line improve slightly as they move towards higher age-groups.

TABLE 5-1
Per capita transfers of 0.5 % GDP as percent of average national poverty line

Country	5-10 years	11-13 years	14-16 years
Burkina Faso 98	4.6	11.7	13.9
Burundi 98	2.2	5.4	5.6
Cameroon 96	6.1	14.3	16.0
Côte d'Ivoire 98	7.2	16.6	18.2
Ethiopia 00	2.4	5.8	5.8
Gambia 98	3.6	9.9	10.6
Ghana 98	3.6	8.0	9.5
Guinea 94	4.2	12.4	15.5
Kenya 97	4.4	9.5	10.1
Madagascar 01	7.1	17.1	17.4
Malawi 97	3.0	6.6	6.8
Mozambique 96	2.7	6.6	7.6
Nigeria 96	5.8	14.9	15.6
Uganda 99	4.1	9.8	11.3
Zambia 98	3.9	9.2	8.9

Source: Authors' calculation.

TABLE 5-2
Transfer per child per day in 1993 PPP dollars with a fixed budget of 0.5% of GDP

Country	5-10 years	11-13 years	14-16 years	Average National poverty line
Burundi 98	0.03	0.06	0.07	1.19
Burkina Faso 98	0.06	0.16	0.18	1.32
Côte d'Ivoire 98	0.13	0.30	0.33	1.80
Cameroon 96	0.11	0.25	0.29	1.79
Ethiopia 00	0.04	0.09	0.09	1.55
Ghana 98	0.08	0.18	0.21	2.20
Guinea 94	0.09	0.27	0.34	2.20
Gambia 98	0.09	0.25	0.26	2.47
Kenya 97	0.08	0.18	0.19	1.89
Madagascar 01	0.08	0.19	0.19	1.09
Mozambique 96	0.05	0.11	0.13	1.68
Malawi 97	0.05	0.11	0.11	1.64
Nigeria 96	0.04	0.11	0.11	0.73
Uganda 99	0.07	0.16	0.19	1.65
Zambia 98	0.04	0.09	0.09	1.01

Source: Authors' calculation.

Table 5-2 presents the same information as Table 5-1 of a fixed transfer per child amounting to 0.5 percent of GDP but this time expressed in US dollars at PPP. While the first three columns give the transfer per child in 1993 PPP dollars per day, the last column shows the estimates of the average poverty line for the 15 study countries in 1993 PPP dollars.

The transfer of 0.5 percent of GDP in local currency during the survey period was adjusted to the 1993 price using inflation between the survey period and 1993. The adjusted transfer was then converted to 1993 US dollars using conversion ratios available for each of these countries. As the converted transfers were yearly figures, those were again adjusted to obtain the transfer of 0.5 percent of GDP per child per day at 1993 PPP US dollars. As presented in the table, the estimates are quite small and vary across countries. The amount of transfer varies from a low of just 3 cents for the 5 –10 years age-group in Burundi to a high of 33 cents for the 14-16 year age-group in Côte d'Ivoire.

Large payments do not necessarily imply that a CCT programme will have a great impact on poverty. To determine that impact, one needs to calculate whether the programme itself is large enough relative to the size of the poverty problem a country faces. In the same way, the impact of a programme depends upon the relationship between the number of beneficiaries and the number of poor in the country. Needless to say, another important factor concerns how well the programme is targeted.

TABLE 5-3
Cost of programmes as percentage of GDP when per child transfers are 20%, 30%, and 40% of average national poverty line

Country	20 percent	30 percent	40 percent
Burkina Faso 98	3.7	5.6	7.5
Burundi 98	8.2	12.3	16.4
Cameroon 96	3.0	4.5	6.0
Côte d'Ivoire 98	2.5	3.8	5.1
Ethiopia 00	7.6	11.4	15.2
Gambia 98	4.8	7.2	9.5
Ghana 98	5.1	7.6	10.1
Guinea 94	3.9	5.8	7.7
Kenya 97	4.3	6.5	8.7
Madagascar 01	2.6	3.9	5.2
Malawi 97	6.3	9.5	12.7
Mozambique 96	6.5	9.7	13.0
Nigeria 96	3.0	4.5	6.1
Uganda 99	4.3	6.5	8.7
Zambia 98	4.8	7.1	9.5

Source: Authors' calculation.

Table 5-3 presents transfers relative to GDP if each child receives 20, 30, and 40 percent of average national poverty line. As would be expected, the cost as share of GDP increases sharply when per child transfers rise from 20 to 30 and further to 40 percent of the poverty threshold. In terms of its costs as share of GDP, for the children as a whole it ranges from a low of 5.09 percent in Côte d'Ivoire to a high of 16.41 percent in Burundi if 40 percent of average national poverty lines is transferred to the children. While these transfers will obviously have a significant impact on poverty reduction, as payments to beneficiary families represent a significant supplement to their income, their costs may turn out to be too high for most of these African countries.

In sum, a programme transferring 0.5 percent of GDP appears to be small relative to the poverty line of each country. If alternatively one thinks of a transfer determined as a significant proportion of the poverty line – 20, 30 or 40 percent – the share of GDP required to finance such a programme might be too high.

6 A PROFILE OF THE CHILDREN IN 15 SUB-SAHARAN AFRICAN COUNTRIES

6.1 HOW MANY CHILDREN ARE IN THESE 15 AFRICAN COUNTRIES?

Consistent with the profile of young population in African countries, children in school age, i.e. between 5 and 16 years old, make up on average a little over a third (34.7 percent) of total population in the 15 countries selected (Table 6-1). The lowest proportion of children in this age range is found in Madagascar (31.6%) while the countries with the highest proportions are Burundi and Uganda (38.6% and 39.3%). Again, given the age structure of population in these countries, the younger the age-group considered, the larger its weight in the total population. This means that for the three selected age-groups of children, after standardising for the number of years in each group, there are on average 21% more children in the youngest age-group compared to the 11-13-year-old group and 29% more than in the group of 14-16 year-olds.

TABLE 6-1
Children age 5-16 as share of total population

Country	Population share of children (%)			
	5-10 years	11-13 years	14-16years	Total children
Burkina Faso 98	20.4	8.0	6.8	35.1
Burundi 98	21.6	8.7	8.4	38.6
Cameroon 96	20.0	8.5	7.6	36.1
Côte d'Ivoire 98	18.7	8.1	7.4	34.1
Ethiopia 00	19.5	8.0	8.1	35.7
Ghana 98	19.0	8.7	7.3	35.0
Guinea 94	21.5	7.2	5.8	34.5
Gambia 98	19.6	7.1	6.6	33.3
Kenya 97	19.2	8.8	8.3	36.3
Madagascar 01	17.4	7.2	7.0	31.6
Mozambique 96	19.7	8.2	7.2	35.1
Malawi 97	17.7	8.0	7.8	33.5
Nigeria 96	18.7	7.3	7.0	33.1
Uganda 99	22.0	9.3	8.0	39.3
Zambia 98	18.6	7.9	8.1	34.6
Total	19.3	8.0	7.5	34.7

Source: Authors' calculation.

6.2 SCHOOL ATTENDANCE IN AFRICA

The importance of education as a basic human capability is widely recognized. Reflecting this view, many governments in developing countries have attached increasing importance to improving schooling outcomes as part of their development strategies (Coady, 2002). As a result, there has been over time a substantial increase in educational enrolments. For instance, during 1970-1998 net primary enrolment rates increased in developing countries from 67

percent to 78 percent, whereas the corresponding figure for secondary school increased sharply from 20 percent to 47 percent (WDI 2004).

However, despite these improvements the developing world is falling behind the goal of achieving universal primary education. Moreover, average figures disguise some important variations in educational performance across regions. Educational performance in sub-Saharan Africa is dismal, where the primary net enrolment rate is just 60 percent, and particularly in low-income countries where the rate falls as low as 13 percent. The contrast with other regions is sharp; for example, in Latin America, South and Southeast Asia net primary enrolment rates are close to 100 percent.

Our own estimates of school attendance confirm the gloomy education picture just depicted. Almost 46 percent of children, equivalent to 29 million, in the age-group of 5-10 years fail to attend school. Again, averages can be misleading, since failure to attend school varies for the 15 countries from a low 9.1 percent in Madagascar to 68.9 percent in Mozambique. In total around 45 million children in the 5-6 year-old age-group do not attend school in the 15 countries studied.

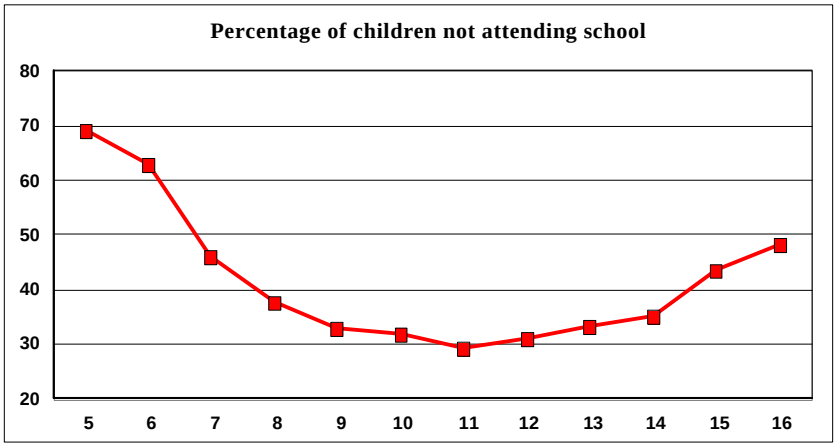
TABLE 6-2
Children not attending school by age-group (%)

Country	Percentage (%) of children		
	5-10 years	11-13 years	14-16 years
Burundi 98	62.67	42.40	58.77
Burkina Faso 98	60.72	69.14	78.35
Côte d'Ivoire 98	53.47	36.44	53.71
Cameroon 96	32.17	19.07	35.42
Ethiopia 00	74.80	53.35	56.38
Ghana 98	17.57	11.75	21.47
Guinea 94	73.77	64.13	66.67
Gambia 98	66.29	38.27	47.85
Kenya 97	19.97	7.11	14.81
Madagascar 01	9.04	12.39	31.27
Mozambique 96	68.91	40.28	54.35
Malawi 97	43.73	25.37	29.18
Nigeria 96	43.89	20.61	25.53
Uganda 99	22.57	7.64	19.79
Zambia 98	54.59	22.53	37.13
Total	45.97	27.89	36.44

Source: Authors' calculation.

To investigate in more detail the pattern of change in school attendance by age, we estimated school attendance for every year of children between 5 and 16 years old. The weighted average of the proportion of children not attending school in the 15 countries selected exhibits a U-shape curve, falling from age 5 until 11 years old and then rising steadily afterwards (Figure 6.1).[7]

FIGURE 6.1
Percentage of children between 5-16 years old not attending school



Source: Authors' calculation.

Taking a step further, we have looked into children who have never attended school. The results are presented in Table 6-3. On the whole, an average of 12.3 percent of children age 5 to 16 have never attended school. Again, there are significant inter-country variations, ranging from a low of 2.8 percent of total numbers of children in Malawi to the striking proportions of one or more than one in five children never attending school in Burundi, Burkina Faso and Ethiopia. The number of children that have never attended school varies from country to country depending, of course, on the proportion of their numbers and the population size of the country. In all 15 countries a rough estimate is that nearly 14 million children have never attended school, with about 8 million of them in the two highly populated countries: Ethiopia and Nigeria.

TABLE 6-3
Children who have never attended school (%)

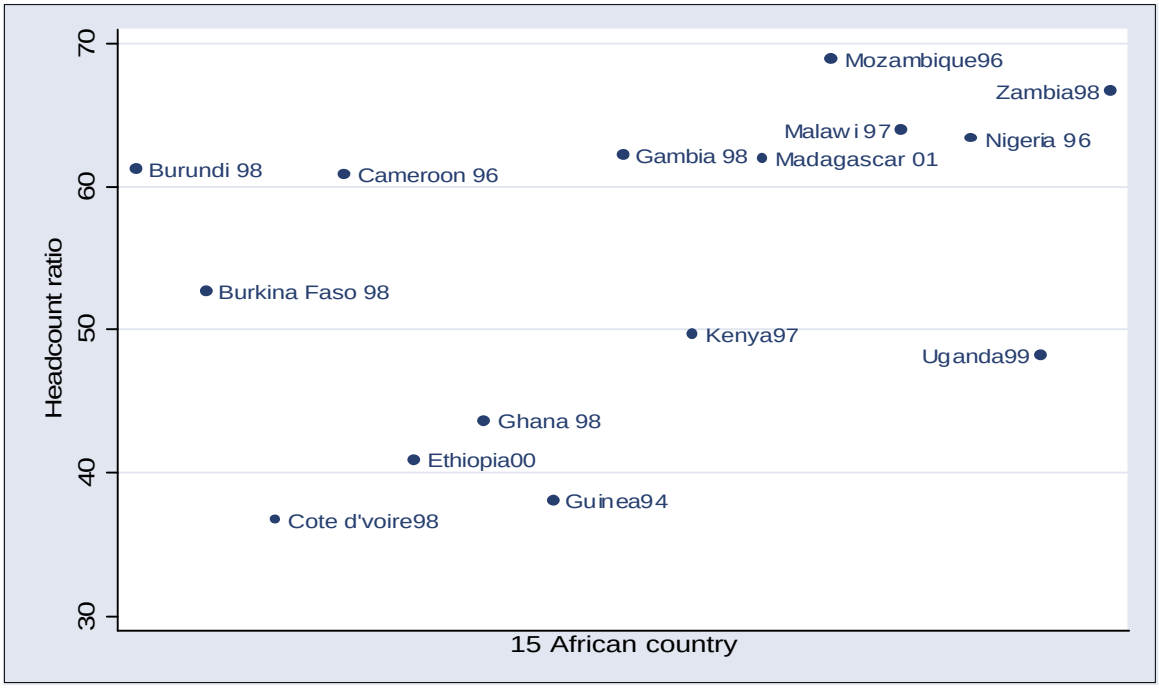
Country	Percentage of children (%)			
	5-10 years	11-13 years	14-16 years	Total Children
Burundi 98	13.17	3.11	2.90	19.19
Burkina Faso 98	12.60	5.12	4.53	22.25
Côte d'Ivoire 98	9.74	2.52	2.70	14.97
Cameroon 96	6.10	1.26	1.00	8.36
Ethiopia 00	14.77	4.17	4.15	23.09
Ghana 98	2.99	0.71	0.72	4.42
Gambia 98	4.82	1.89	2.21	8.92
Kenya 97	3.58	0.35	0.26	4.20
Madagascar 01	5.44	1.44	1.62	8.51
Mozambique 96	13.21	2.55	2.22	17.98
Malawi 97	2.14	0.34	0.30	2.78
Nigeria 96	8.03	1.33	1.28	10.64
Uganda 99	4.78	0.46	0.55	5.79
Zambia 98	9.68	0.95	0.74	11.38
Total	8.60	1.88	1.84	12.31

Source: Authors' calculation.

6.3 POVERTY AMONG CHILDREN

Poverty is high in the 15 African countries selected. In the country with the lowest incidence of poverty, Côte d'Ivore, 38 percent of the population struggle to survive with incomes below the poverty line. In the countries most affected, the incidence of poverty is twice as large, for example, in Mozambique and Zambia, where more than two thirds of the population live below their respective poverty lines. On average, more than half (54.6%) of the population live in poverty. Our estimates of different measures of poverty are presented in table 6.4, and are based on per capita expenditure derived from household surveys using national poverty lines. However, while Cameroon has more than twice the per capita income of a country such as Burkina Faso, it has a higher poverty incidence than Burkina Faso. This reflects the fact that income distribution in Cameroon is highly unequal. Although some countries are less poor than others, the majority of the population are poor in these African countries.

FIGURE 6.2
Percentage of poor in 15 African countries



Source: Authors' calculation.

Table 6-4 helps us to understand the nature of the poverty problem more deeply across countries. The results of headcount and poverty gap reveal that an average poor person in the study countries has a shortfall of expenditure of about 39 percent of the poverty lines (see last column of table 6-4). In the country where the shortfall is lowest, Ethiopia, the average poor person has an expenditure of less than 30 percent, but in six countries the shortfall is larger than 40 percent and in one country, it is as high as 52 percent. What is more, the large gaps between the estimates of the severity of poverty compared to the poverty gap and its incidence indicates that poor tend to be concentrated far below the poverty lines rather than group closer to the poverty lines. Indeed, if the three measures of poverty were similar to each other it would indicate that the income of the poor would be closer to the poverty line, if estimates differed significantly as we progress from the headcount index to the severity of poverty, that suggests that the poor would be concentrated in the range that is far below the

poverty line Thus, poverty measures depicted in table 6-4 suggest that poverty in these African countries is not only widespread but also deep. Further, estimates suggest that to have an impact on poverty, the size of a transfer programme will require resources between 30 and 50 percent in most of the 15 countries.

TABLE 6-4
Poverty Measures for 15 African Countries

Country	Headcount ratio	Poverty gap ratio	Severity of poverty	Expenditure shortfall
Burkina Faso 98	52.64	16.95	7.56	32.19
Burundi 98	61.23	25.90	14.56	42.30
Cameroon 96	60.90	23.37	11.70	38.37
Côte d'Ivoire 98	36.73	11.10	4.84	30.23
Ethiopia 00	40.90	10.15	3.62	24.82
Ghana 98	43.57	15.66	7.67	35.95
Guinea 94	38.07	11.79	4.86	30.96
Gambia 98	62.19	25.56	13.58	41.10
Kenya 97	49.70	17.69	8.18	35.59
Madagascar 01	61.97	26.90	14.58	43.40
Mozambique 96	68.90	29.45	15.79	42.74
Malawi 97	63.93	27.07	14.62	42.35
Nigeria 96	63.37	29.88	17.77	47.16
Uganda 99	48.18	16.66	7.87	34.58
Zambia 98	66.71	34.70	22.38	52.02
Total	54.43	21.91	11.79	38.72

Source: Authors' calculation.

We now go on to look into poverty among children. Table 6-5 shows that in all 15 countries, the incidence of poverty among children aged between 5 and 16 years old is generally higher than among the rest of the entire populations of these countries. On average, poverty is more than 5 percent higher than the national figure, and it is particularly higher for the 11-13 year-old age-group, where poverty is 7 percent higher. These figures ean that on average, 57-58 percent of children in these 15 countries are poor.

Like poverty among the overall population, poverty among the children is particularly high in countries such as Mozambique, Zambia, Nigeria, and Malawi. But relative to the national incidence of poverty, children are at more of a disadvantage in Côte d'Ivore, Ghana, Kenya and Nigeria, where poverty is more than 10 percent higher than the national estimate for at least one child age-group. This is an expected result since poor families tend to have more children. Estimates of the poverty gap and the severity of poverty indicate that poverty is a somewhat more acute problem among children than among the population as a whole. On average, poor children in the 15 countries have a shortfall of expenditure of 37.44 percent, 39.94 percent and 40.22 percent in the age-groups 5-10, 11-13 and 14-16 years, respectively as against the shortfall of 38.73 for the entire population of the poor (Table 6-6). Thus, poor children have slightly higher expenditure shortfall than the entire population of the poor. Similarly, estimates of the severity of poverty for children are slightly higher than those for the whole population. These figures suggest that the poorest families tend to have even more children.

TABLE 6-5
Percentage and number of poor children in Africa

Country	Percentage of poor				Number of poor (in millions)			
	5-10 years	11-13 years	14-16 years	National	5-10 years	11-13 years	14-16 years	National
Burundi 98	65.04	64.81	64.56	61.23	0.85	0.34	0.33	3.69
Burkina Faso 98	55.92	55.35	54.74	52.64	1.21	0.47	0.39	5.58
Côte d'Ivoire 98	40.79	36.76	36.02	36.73	1.28	0.50	0.45	6.18
Cameroon 96	63.67	65.44	60.61	60.90	1.60	0.70	0.58	7.66
Ethiopia 00	42.82	44.05	42.85	40.90	4.58	1.94	1.90	22.39
Ghana 98	48.12	45.90	44.10	43.57	1.67	0.73	0.59	7.95
Guinea 94	41.23	40.85	38.58	38.07	0.56	0.19	0.14	2.41
Gambia 98	66.18	67.49	65.61	62.19	0.22	0.08	0.07	1.06
Kenya 97	55.40	56.45	53.87	49.70	2.70	1.27	1.14	12.66
Madagascar 01	66.76	67.79	63.26	61.97	1.82	0.76	0.70	9.71
Mozambique 96	73.41	71.19	70.23	68.90	2.30	0.93	0.80	10.93
Malawi 97	66.70	66.46	65.24	63.93	1.16	0.52	0.50	6.26
Nigeria 96	67.77	70.00	71.55	63.37	12.75	5.15	5.06	63.72
Uganda 99	51.19	49.46	46.62	48.18	2.48	1.01	0.82	10.62
Zambia 98	68.56	68.94	67.13	66.71	1.27	0.55	0.55	6.66
Total	57.89	58.15	57.35	54.37	36.45	15.13	13.99	177.46

Source: Authors' calculation.

TABLE 6-6
Expenditure shortfall from poverty line among children (%)

Country	5-10 years	11-13 years	14-16 years	National
Burkina Faso 98	32.47	32.83	32.93	32.19
Burundi 98	43.35	43.32	44.73	42.30
Cameroon 96	38.38	38.40	38.49	38.37
Côte d'Ivoire 98	30.30	28.70	30.43	30.23
Ethiopia 00	25.24	25.13	25.10	24.82
Ghana 98	36.58	35.93	34.78	35.95
Guinea 94	31.57	31.65	30.85	30.96
Gambia 98	41.96	40.41	41.05	41.10
Kenya 97	35.76	37.32	35.96	35.59
Madagascar 01	44.83	45.46	44.71	43.40
Mozambique 96	43.91	44.33	44.72	42.74
Malawi 97	43.82	43.39	42.57	42.35
Nigeria 96	46.56	50.43	50.62	47.16
Uganda 99	35.34	35.43	35.62	34.58
Zambia 98	52.47	52.28	52.12	52.02
Total	37.44	39.94	40.22	38.73

Source: Authors' calculation.

Key points emerging from Tables 6-5 and 6-6 are threefold. Poverty is higher among children than across the entire population (an average of 57-58 percent of children in the 15 countries are below the poverty lines), meaning that there is little chance that any modest CCT programme could lead to a significant reduction in the percentage or number of poor children. The second point is that, as poverty among children in these African countries is deep rather than shallow, reducing child poverty is expected to be slow. Third, since the average poor child in these African countries has a shortfall ranging from 25 to 52 percent, the per capita transfer of programmes in these countries will have to be in the order of 25 to 50 percent in order to significantly contribute to poverty reduction.

TABLE 6-7
Poverty among children not attending school as ratio of national poverty

Country	Headcount ratio	Poverty gap ratio	Severity of poverty
Burkina Faso 98	117.56	122.63	126.28
Burundi 98	114.81	127.35	134.92
Cameroon 96	110.95	124.65	137.09
Côte d'Ivoire 98	133.32	140.81	144.29
Ethiopia 00	112.38	116.83	119.67
Ghana 98	144.03	175.30	194.88
Guinea 94	126.82	131.45	132.97
Gambia 98	114.31	119.42	124.33
Kenya 97	126.63	141.22	149.00
Madagascar 01	117.95	119.58	121.54
Mozambique 96	114.67	122.02	126.20
Malawi 97	110.62	113.14	113.74
Nigeria 96	110.81	108.99	106.41
Uganda 99	136.45	166.13	193.50
Zambia 98	116.46	126.42	132.15
Total	117.37	122.53	124.45

Source: Authors' calculation.

On average, about two-thirds of children (64%) not attending school are found to be living below the poverty threshold income. Table 6-7 presents poverty among children not attending school as a percentage of the national poverty and suggests that poverty among these children is indeed acute. The incidence of poverty among children not attending school is on average 17.4 percent higher than the national average in these 15 countries, the poverty gap is almost 22.5 percent higher, and the severity of poverty is 24.45 percent higher; these are much higher figures than those found for children in general.

This suggests that children are not attending school partly due to their lack of resources to afford schooling, directly or indirectly, and/or partly due to supply-side factors, such as unavailability of schools nearby offering at lest a minimum quality educadtion. Therefore, assuming that supply-side concerns are properly dealt with, improving school attendance in these 15 countries may require a good calibration of the amount of resources transferred and a well-crafted conditionality in order to effectively induce children from low-income households

to go to school. The size of the per capita cash transfer provided by short-long term poverty reduction programmes in these countries must be on average in the order of 40 percent of the national poverty line.

6.4 URBAN-RURAL DIFFERENCES

It is also of paramount importance to find out where the poor children reside. Is poverty mainly an urban or rural problem? This information is particularly useful for a CCT programme for education because school attendance rates are expected to be much lower among rural households. This might be contributed to by both demand- and supply-side constraints. The implication is that a significant increase in primary school attendance stemming from an urban CCT programme is thus unlikely to be expected in a country where poverty is an urban phenomenon. Yet, at the same time a rural programme is likely to have a limited effect on national poverty rates, no matter how well targeted, if most of poor households are located in cities and towns. In this context, our analysis is extended to find out whether poverty is more prevalent in urban or rural dwellings in the study countries. The results are shown in Table 6-8.

TABLE 6-8
Percentage of poor by urban and rural areas

Country	Percentage of poor (%)			Rural population share	Rural poverty share
	Rural	Urban	National		
Burkina Faso 98	61.05	24.32	52.6	83.3	92.8
Burundi 98	66.98	15.94	61.2	94.9	99.0
Cameroon 96	73.85	37.24	60.9	70.1	83.3
Côte d'Ivoire 98	52.94	21.77	36.7	54.9	75.5
Ethiopia 00	44.95	30.31	40.9	86.8	91.4
Ghana 98	59.28	24.03	43.6	63.0	81.5
Guinea 94	53.25	14.21	38.1	67.1	88.9
Gambia 98	83.35	41.33	62.2	55.4	73.0
Kenya 97	60.17	14.27	49.7	84.4	96.3
Madagascar 01	73.29	40.47	62.0	77.1	87.1
Mozambique 96	80.51	40.75	68.9	79.6	88.3
Malawi 97	72.44	10.83	63.9	89.8	98.3
Nigeria 96	69.71	68.06	63.4	59.3	61.6
Uganda 99	55.04	12.46	48.2	86.5	96.7
Zambia 98	79.73	48.91	66.7	62.8	74.3

Source: Authors' calculation.

Table 6-8 presents the share of national poverty found in the rural and urban sectors of each of the 15 countries. In each country, rural poverty is far greater than urban poverty. Thus, in these countries the poverty problem mainly lies in rural areas where most of population live. The estimates of rural population share suggest quite a low level of urbanization in these countries. What emerges from these findings on the location profile of poverty is that a CCT programme in the African countries needs to be established in rural areas. Experiences in Latin

American countries substantiate this argument. For instance, in Brazil the population is highly concentrated in urban areas, whilst in Mexico about half of the poor are still living in rural areas. This is a reason why the first CCT programmes (*Bolsa Escola*) were set up in urban areas, whereas *Progresa* in Mexico is a rural programme.

7 PERFECT TARGETING VS. UNIVERSAL TARGETING

According to Coady, Grosh, and Hoddinott (2002), more than a quarter of targeted programmes in developing countries had an overall regressive incidence. For instance, they found that the poorest 40 percent of income distribution was receiving less than 40 percent of poverty alleviation budgets. Such ineffective targeting of poor households suggests that the overall impact on poverty is much smaller than it would have been if well targeted. Moreover, administrative costs involved in implementing any targeted programmes are very high. Much of the budget is spent on simply getting the resources to poor families. Consequently, the cost per unit of income transferred can be substantially large. Transfer programmes appear to be administratively complex as they require resources to undertake targeting of transfers and to monitor the recipients' actions. In this context, one might argue for a scenario of universal transfers.

In this section, we compare the poverty reduction impact of alternative transfer programmes with the impact one would get from a similar transfer given to every person in each of the countries considered. For this purpose we use the Pro-Poor Policy (PPP) index proposed by Kakwani and Son (2005). The PPP index, briefly explained in Box 7.1, compares the percent poverty reduction that is obtained by a given policy – such as a transfer programme, a subsidy to public transportation or health clinics, with the percent poverty reduction that would be obtained if everybody's income received an increase equivalent to the one provided by the policy or transfer programme being analysed. If the PPP index is equal to 1 that means that the policy or programme in question performs just as well as a transfer of the equivalent mount of money would do in reducing poverty. If the PPP index is greater than 1 it means it is benefiting the poor more than a simple transfer to everyone. Thus, for example, finding a PPP index equal to 1.20 for a given programme means that the given programme reduces poverty by 20 percent more than an equivalent universal transfer. The bigger the index the more pro-poor the programme is. If the PPP index is smaller than 1 that means the non-poor are the main beneficiaries of the programme. If one finds, for example, that the given programme has instead a PPP index equal to 0.80, this means that the programme reduces poverty by 20 percent less than a universal equivalent transfer.

Box. 7.1.: Pro-Poor Policy Index (PPP) index

Suppose there is a welfare increase from access to a specific service, which leads to an increase in the recipients' income or consumption expenditure in a direct or indirect way. Accordingly, there will be a reduction in poverty incurred from the increase in income. Suppose x is the income of a person before transfer and $b(x)$ is the benefit received by the person with income x, the percentage change in poverty (because of this benefit) can be written as:

$$\frac{dq}{q} = \frac{1}{q}\int_0^z \frac{\partial P}{\partial x} b(x) f(x) dx$$

We define a service to be pro-poor if the poor receive greater absolute benefits than the non-poor. It means that the pro-poor public service should achieve greater poverty reduction compared to a counter-factual situation when everyone receives exactly the same benefit from the service.

Suppose that the average or mean benefit generated from the public service is denoted by $\bar{b}$. The percentage change in aggregate poverty when $\bar{b}$ amount is given to everyone is given by

$$\frac{dq}{q} = \frac{\bar{b}}{q}\int_0^z \frac{\partial P}{\partial x} f(x) dx$$

We define the pro-poor policy index as the ratio of actual proportional poverty reduction from the service to the proportional poverty reduction that would have been achieved if every individual in society had received exactly the same benefits (equal to the average benefit from the service) as given in (4). Thus, the pro-poor policy index is derived as

$$l = \frac{1}{\bar{b}hq}\int \frac{\partial P}{\partial x} b(x) f(x) dx$$

where

$$h = \frac{1}{q}\int_0^z \frac{\partial P}{\partial x} f(x) dx$$

is the absolute elasticity of poverty: if everyone receives one unit of currency, then the poverty will change by $100 \times h$ percent.

The access to a basic service will be called pro-poor (anti-poor) when l >1 (< 1). The larger the value of l, the greater will be the degree of pro-poorness of the service.

To calculate l, it is assumed that if a person utilizes a public service, then he/she receives some notional cash. If we assume that all individuals who utilize the public service receive exactly the same benefits (in the form of notional cash), then we can easily calculate the pro-poor policy index l, by defining $b(x) = 1$, if a person is utilizing a service and 0 otherwise.

TABLE 7-1
Pro-Poor Policy index for universal transfers to rural and urban areas

	Poverty gap ratio				Severity of poverty			
	Targeting				*Targeting*			
Country	All children	Rural children	Urban children	Perfect	All children	Rural children	Urban children	Perfect
Burkina Faso	1.07	1.18	0.43	1.81	1.08	1.21	0.38	2.53
Burundi	1.09	1.12	0.28	1.59	1.12	1.16	0.23	2.11
Côte d'Ivoire	1.10	1.51	0.60	2.51	1.09	1.63	0.45	3.63
Cameroon	1.09	1.28	0.60	1.54	1.08	1.32	0.5	2.05
Ethiopia	1.07	1.13	0.73	2.37	1.09	1.14	0.74	3.42
Ghana	1.09	1.39	0.54	2.24	1.1	1.47	0.42	3.03
Guinea	1.08	1.42	0.37	2.56	1.1	1.47	0.31	3.4
Gambia	1.08	1.37	0.65	1.56	1.08	1.56	0.39	2
Kenya	1.14	1.25	0.29	1.95	1.16	1.27	0.18	2.53
Madagascar	1.09	1.22	0.65	1.57	1.13	1.29	0.57	1.95
Mozambique	1.07	1.19	0.62	1.42	1.11	1.24	0.59	1.77
Malawi	1.07	1.17	0.18	1.52	1.09	1.21	0.09	1.93
Nigeria	1.14	1.14	1.13	1.54	1.16	1.12	1.21	1.91
Uganda	1.06	1.17	0.25	2.00	1.08	1.2	0.19	2.75
Zambia	1.05	1.23	0.76	1.45	1.06	1.34	0.57	1.8

Source: Authors' calculation.

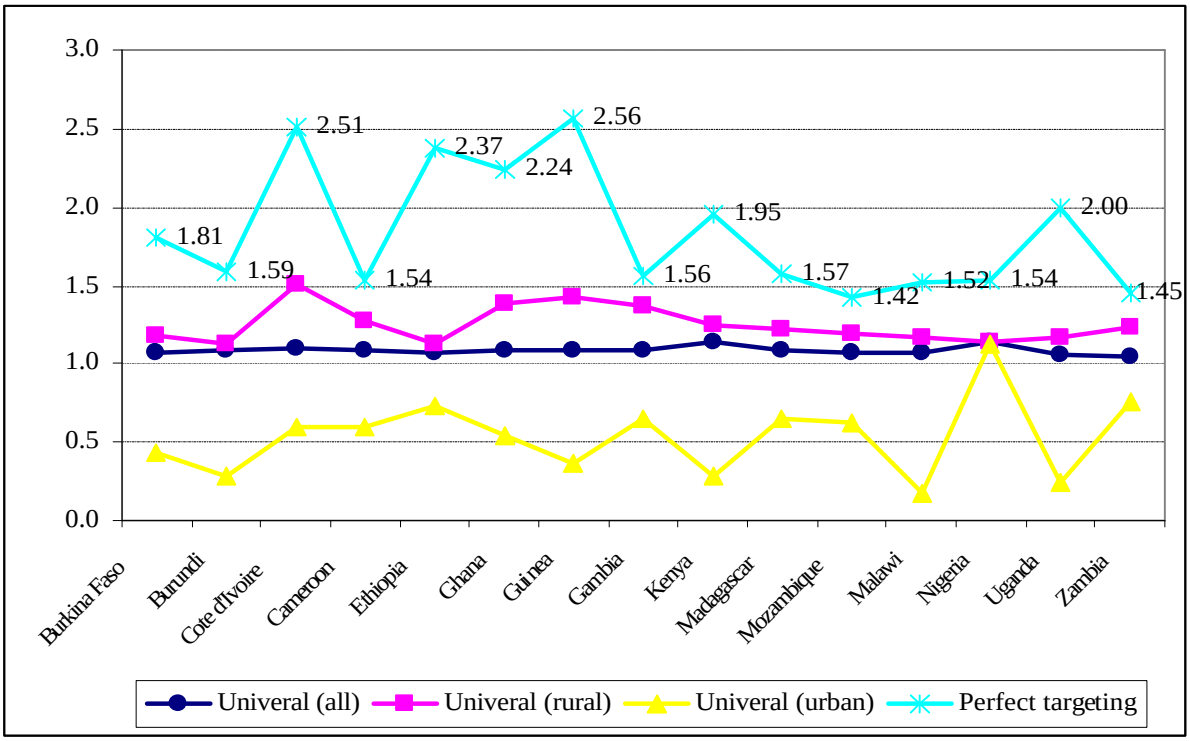
Table 7-1 presents estimates of the Pro-Poor Policy index for alternative transfer modalities calculated for the poverty gap and severity of poverty measures. First we examine the PPP index of a transfer programme providing every poor person in the country with an amount equal to the income shortfall from the poverty line. This is the ideal transfer programme. In theory it will achieve the maximum possible reduction in poverty; we call this, therefore, the perfect targeting scheme. The highest index recorded for the poverty gap measure by a country is 2.6, for Guinea, and the lowest is 1.4, for Mozambique. Compared to countries in other regions these are small values, relatively close to 1. The reason is that as poverty is an acute and widespread problem, the relative gain that might be obtained by targeting transfers compared to a universal transfer is not as big as it would be the case in a country where poverty is more localised.[8] Given the practical difficulties and costs associated with a perfectly targeted programme, we use this index only as a reference expressing the theoretical maximum that could be achieved. It is well known that targeting, and particularly perfect targeting, usually carries high administrative costs and faces great difficulties in obtaining the necessary accurate estimates of individuals' income or consumption.

The second modality of programme for which we calculate the PPP index is a fixed transfer to every child between 5 and 16 years old, irrespective of their poverty status. Estimates based on the poverty gap measure for the 15 countries range from 1.05 to 1.14, so they are all quite small. The implication is that targeting children is only slightly more effective than the same fixed amount being transferred universally. The third modality limits the fixed transfer to children to those living in rural areas. Results show that this is a more pro-poor policy in the sense that it allows for a larger reduction in poverty as measured by the poverty gap and the severity of poverty. The PPP index ranges from 1.12 (Burundi) to 1.51 (Côte d'Ivore). The third modality we investigate is limiting the fixed transfer this time to children to those living in urban areas. For all countries except for Nigeria, this targeting scheme is not

pro-poor. This means that policy makers will achieve a much better result implementing a universal transfer, and if resources are limited then policy makers should not target urban areas only. The PPP index for Nigeria is 1.13, that is rather small, and almost identical to the one obtained by targeting rural children; the reason being that in this country poverty measures for rural and urban are quite similar.

Figure 7.1 plots the PPP indices for the three modalities discussed above. The graph makes it apparent that for all countries, targeting all children should be classified as a pro-poor policy, but also that a policy targeting rural children renders enhanced pro-poor results. The advantage of targeting rural children is relatively greter in countries like Cameroon, Côte d'Ivore, Gambia, Ghana, Guinea and Zambia.

FIGURE 7-1
Pro-Poor Policy indices under universal transfers and perfect targeting



Source: Authors' calculation.

Another result emerging from Figure 7.1 is that targeting rural children is closer to perfect targeting in Cameroon, Gambia, Mozambique and Zambia, and farther from perfect targeting in Ethiopia, Guinea, Côte d'Ivore and Uganda. So, taking the case of Côte d'Ivore, if targeting rural children in this country gives a significantly better outcome than targeting all children as we were informed by Figure 7-1, both targeting schemes are far from perfect. This suggests that policy makers in this country should look closely at alternative targeting modalities. On the other hand, Figure 7-1 tells us that targeting rural children in Mozambique, for example, does not produce significantly better results compared to targeting all children, but it suggests that targeting rural children is a good option whose results are actually close to perfect targeting. Thus, policy makers in this country can perhaps concentrate efforts in policy design areas other than complex targeting schemes.

The main message coming from the analysis of PPP indices is that a fixed transfer to every child aged between 5-16 years old will be pro-poor, but the impact of the programme might be enhanced if the transfer is carried in the rural areas, a universal targeting of children may not be a bad policy option, particularly in rural areas. This universal programme may be more cost effective than targeting by income or by any other criteria that selects a small subgroup of children for such a programme may involve large administrative costs in identifying the poor ones.

8 IMPACTS OF CCT PROGRAMMES ON POVERTY

CCT programmes contribute positively to the reduction of poverty as poor households are able to build up assets through their investment in human capital. To the extent that conditional programmes are successful, the increase in, for example, school attendance has the all-important effect of improving the long-term growth of income of poor families. Additionally, the cash transfers implemented through a conditional programme also have an important effect on poverty in the short-term.

The most direct and immediate impact of cash transfers on school attendance is on the living conditions and level of vulnerability of the most deprived households. In most cases, the level of the transfer may not be sufficient in itself to pull families out of poverty. However, the benefit of the cash transfer immediately relieves economic hardships that poor families currently face. More importantly, poor families may not have to keep their children out of school so as to maintain even a minimum standard of living.

Other than the direct effects, there are also indirect impacts which cash transfers conditional on school attendance can have on poverty dynamics. Among the many indirect effects, one can mention the positive multiplier effects of the increased income and employment of the households receiving the cash transfer on other households in the community. There are no official estimates of this in the context of Latin America, but the cash injection will inevitably have multiplier effects on the local economy. In Mozambique, for instance, it has been shown that transfers to rural households generate the highest multipliers as people in rural areas demand more agricultural products, and there are fewer leakages in the expenditure (Arndt et al., 2000). Another relevant indirect effect (ILO 2001) is the one concerned with the impact of the cash transfer on household risk-management and coping strategies. Yet another indirect impact works through the improved coordination of social policy that allows for enhanced efficiency of policies.

All in all, CCT programmes expand economic opportunities and enhance economic security of poor households. As such, given its wider poverty-reducing effects, a CCT programme can be an important policy instrument in the designing of a country's poverty reduction strategy.

8.1 POVERTY SIMULATION RESULTS

Simulations presented here assume that transfers given to children are pooled within families and distributed to each member so that every member enjoys the same level of welfare. We further assume that all the transfers received by the families are spent on consumption goods.

So the benefits received by the families are added to the family's total consumption expenditure, which on dividing by household size, gives per capita family expenditure after the transfer. These poverty estimates are derived using the per capita family expenditure after the transfer, which are then compared with the poverty estimates based on the family's per capita expenditure before the transfer.

It is worth noting that our estimates presented in this section are estimates of the maximum direct effect on poverty of a CCT programme. Actual results might be less than the maximum for several reasons other than leakages and administrative costs. For instance, if children go to school and pull out of the labour force, the change in net family income will fall short of what families receive from CCT programmes.

Our objective here is to assess the impact of CCT on the national poverty rather than poverty among children. As such, all the simulations are related to capturing the impact of transfers to school-age children on poverty at national level.

(i) When 0.5 percent of GDP is transferred

We start by investigating the short-term effect on poverty reduction of a transfer of 0.5 percent of GDP to all children. Thus, we measure poverty after assuming that income per capita of all children age 5 to 16 years increased by a fixed amount equal to 0.5 percent of GDP dived by the total number of children in this age-group.

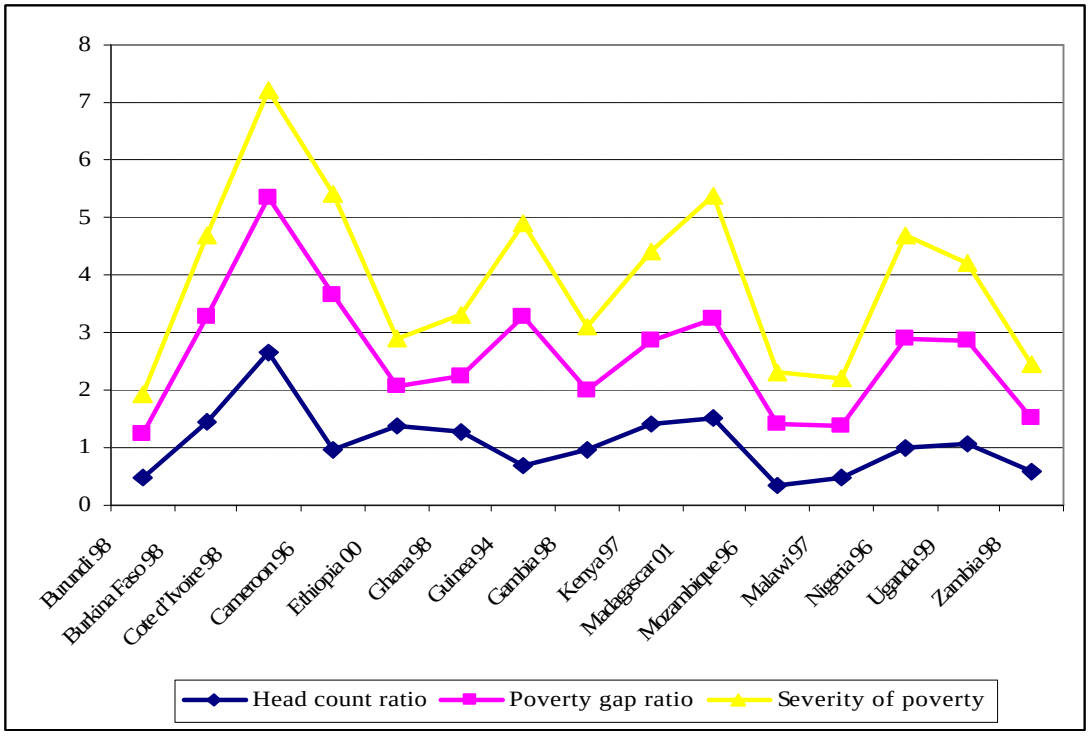
TABLE 8-1
Percentage change in poverty reduction when transferring 0.5 % GDP to all children

Country	All children aged 5-16 years		
	Head count ratio	*Poverty gap ratio*	*Severity of poverty*
Burundi 98	0.50	1.24	1.92
Burkina Faso 98	1.44	3.28	4.70
Côte d'Ivoire 98	2.66	5.34	7.20
Cameroon 96	0.97	3.65	5.43
Ethiopia 00	1.37	2.07	2.90
Ghana 98	1.26	2.25	3.31
Guinea 94	0.70	3.26	4.91
Gambia 98	0.96	2.00	3.11
Kenya 97	1.41	2.85	4.41
Madagascar 01	1.51	3.25	5.37
Mozambique 96	0.36	1.41	2.31
Malawi 97	0.47	1.38	2.20
Nigeria 96	0.99	2.88	4.69
Uganda 99	1.08	2.85	4.19
Zambia 98	0.60	1.52	2.45

Source: Authors' calculation.

Table 8-1 presents the percentage reduction in national poverty as a result of these cash transfers. Table B.1 in Appendix shows the poverty impact of the transfer for the three school-age-groups. Figure 8.1 shows that the impact of this transfer on the headcount ratio is very small. This is an expected result given that poverty is deeply rooted in most of the 15 countries selected. Indeed, 0.5 of GDP transfer would yield a small per capita transfer that by itself is very unlikely to lift children out of poverty. One can also note from the graph that the impact increases rapidly as we move to the poverty gap ratio and severity of poverty index. To be sure, this is a result that would be obtained for any cash transfer to the poor that one can design. However, what is important to highlight here is that the same fact of poverty being deep means that a fixed transfer received by mostly very poor people would have a larger impact on reducing the poverty gap and inequality among the poor, even if the transfer is not enough to lift them out of poverty. As an example, if 0.5 percent of GDP is targeted to all children aged between 5-16 years, the poverty incidence in Mozambique falls from 68.9 percent to 68.6 percent, a decline of only 0.36 percent, but the severity of poverty falls from 15.79 percent to 15.43 percent, a decline of 2.31. Again, since the severity of poverty index gives greater weight to the poor who are living far below the poverty line, we observe a larger reduction in that index. Thus, the impact of a CCT programme should not be judged merely based on the number of people that can be pulled out of poverty through the programme. As a matter of fact, a CCT programme provides greater income relief to those who are still unable to escape from poverty because the extra value of money is much greater to them. The headcount ratio is completely insensitive to any improvement in the standard of living of those who could not be pulled out of poverty by such CCT programmes.

FIGURE 8.1
Impact on poverty reduction when transferring 0.5% of GDP to all children

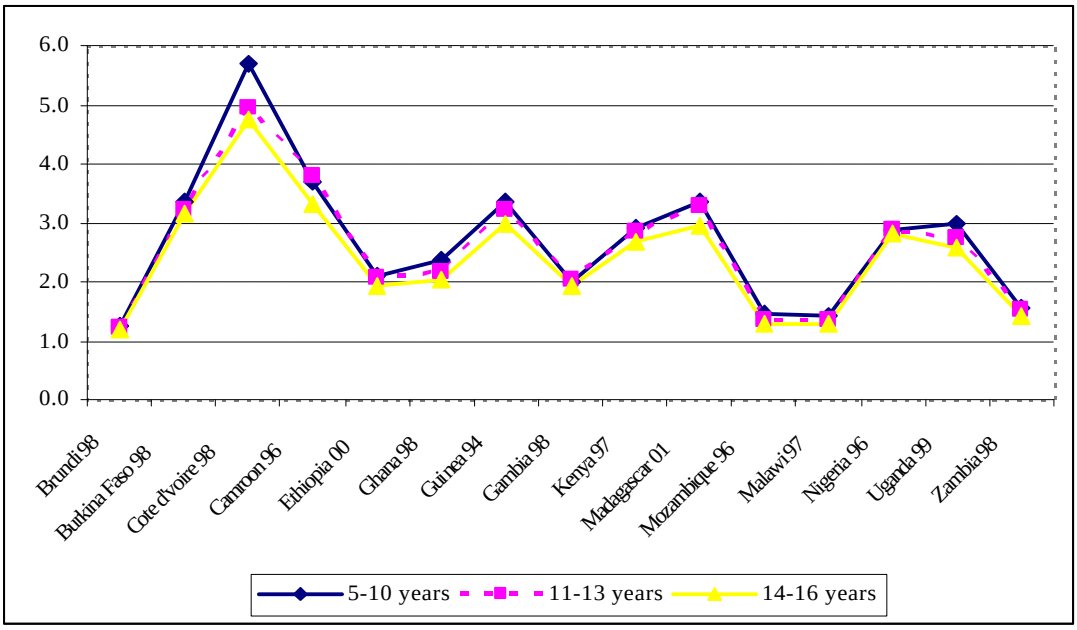


Source: Authors' calculation.

Thus, the estimates of Table 8-1 suggest that 0.5 percent of GDP is too small to have a significant impact on national poverty (particularly when measured by the headcount ratio). However, it should be stressed that these figures only capture the short-term effect of the transfer on poverty. With positive economic growth in long-run, the size of the 0.5 percent of GDP will also rise. Moreover, administrative costs of getting the transfer to the families are also likely to diminish over time. As a consequence, net benefits of the transfer received by the families will increase in the long-term. This suggests that the long-term effect of the 0.5% GDP-transfer on national poverty will be much higher if the transfer programme is implemented in the long run. If the economic growth rate is small or negative then the long-term impact of any CCT programmes may even be lower than the short-term impact.

It is also worth noticing that to see the maximum poverty reduction across countries there is no consistent indicator pointing to a particular age-group that stands out to be targeted. As Figure 8.2 shows, the impact on the poverty gap measure of 0.5 percent of GDP transfers have little difference across the three age-groups. The country where differences are highest is Côte d'Ivore, where targeting children aged 5-10 years would yield a better result. Impacts on poverty reduction for the three different age-groups do, nevertheless, vary depending on the type of poverty measure used. The estimates presented in Table B.1 reveal that with fixed budget of 0.5 percent of GDP, the best option for targeting a particular age-group differs from one country to another. For instance, to reduce national poverty, targeting the 14-16 year-old age-group seems to be a better option for Ethiopia, but targeting the 5-10 and 11-13 year-old age-groups is likely to deliver a better result for Cameroon and Zambia, respectively.

FIGURE 8.2
Impact on poverty gap reduction when transferring 0.5% GDP



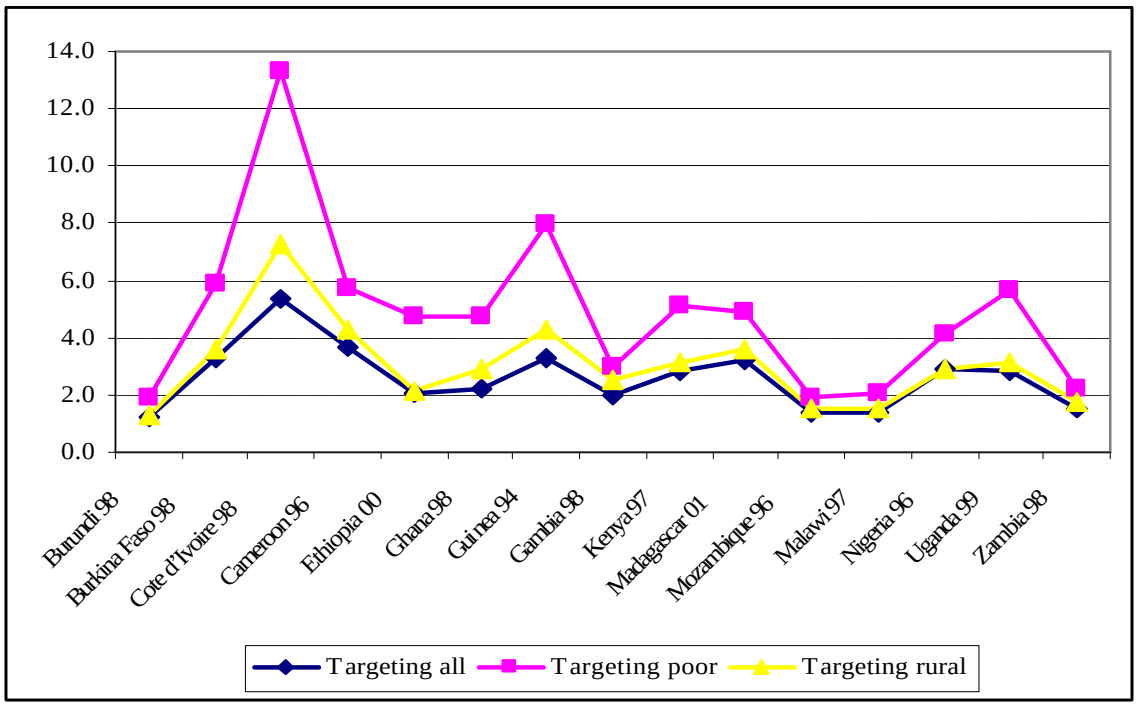
Source: Authors' calculation.

We now look at alternative scenarios where the transfer of 0.5 percent of GDP is targeted only at particular sub-groups. We have chosen the targeting of two subgroups. The first is children living in poor households. The second is children living in rural areas (as discussed, poverty here is more acute compared to urban areas). As reference we also estimate the

poverty reduction that would be obtained from transfer given to all children – urban and rural. Figure 8.3 summarises results (see also Tables B.2 and B.3 in Appendix for detailed results). As expected, targeting the children from poor households leads to much greater poverty reduction at national level as the per capita benefits received by the poor recipient's families are likely to be higher under targeted programmes than universal ones. In the case of Côte d'Ivoire, its impact on national poverty of targeting the poor children is almost twice as great as the poverty impact of targeting all children. Nevertheless, the total benefits of the transfer under the targeted programmes will be partly offset by administrative costs of identifying the poor.

Another message Figure 8.3 sends us is that the poverty impact is generally greater if the transfer is given only to the rural children rather than to all children. This suggests that if targeting poor children is likely to bear too much budgetary burden in terms of its administrative costs of identifying the targeted subjects, then targeting only rural children is not a bad option to achieve a better poverty reduction outcome than the universal programme.

FIGURE 8.3
Impact on poverty gap under various simulation scenarios



Source: Authors' calculation.

Let us go recall our earlier finding that suggests that the average pattern of outcomes of children not attending school exhibits a U-shape curve, falling until 11 years old and then rising steadily after that age. Based on this finding, we assess the impact of poverty reduction if 0.5 percent of GDP is transferred in a progressive manner to children aged between 5 and 16. More specifically, we have increased the transfer by 5 percent as a child gets one year older. A rationale for this progressive transfer lies in the fact that children tend to experience higher drop-out rates as education increases and in the view that opportunity costs of attending school increase with education. We have two major results to report. First, as shown in Table 8-2, estimates of the progressive transfer for the three modalities (to all children, all poor children, and rural children) suggest such a transfer is particularly effective in reducing poverty

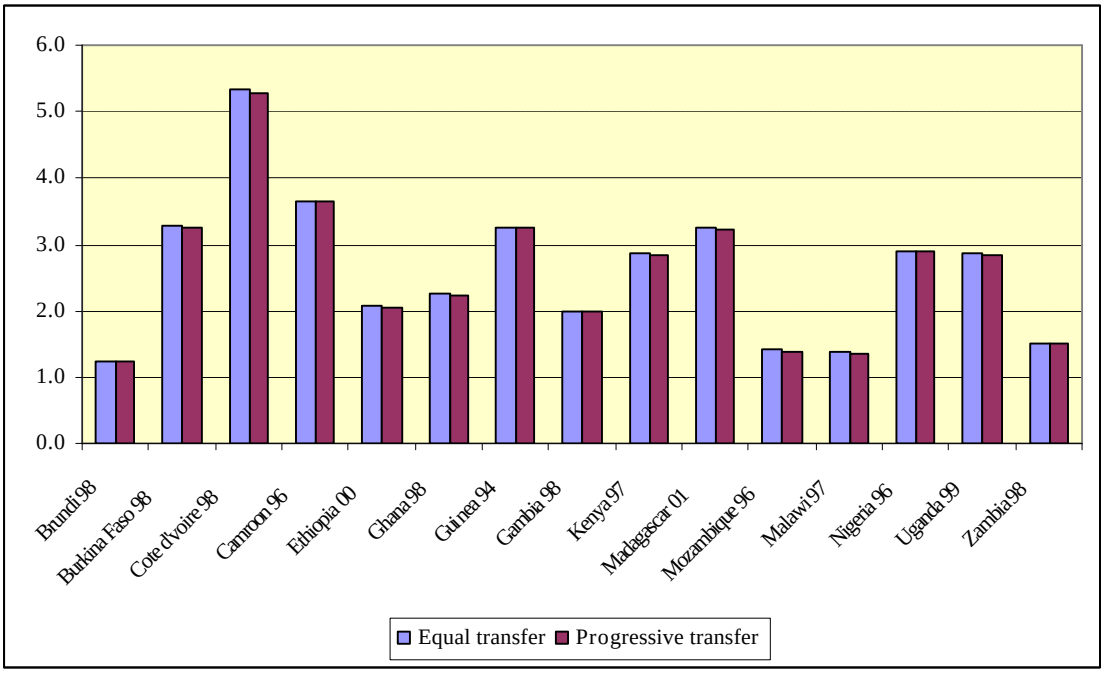
if the modality adopted is the targeting of poor children. The second result indicates that there is little difference in poverty reduction impact between progressive transfer and an equal invariant transfer across age-groups, as shown in Figure 8-4, which plots estimates of poverty reduction for the targeting modality of a transfer to all children.

TABLE 8-2
Percentage change in poverty reduction with progressive targeting of 0.5 % GDP

Country	Headcount ratio		
	All children	*Poor children*	*Rural children*
Burundi 98	0.50	0.66	0.49
Burkina Faso 98	1.41	2.38	1.47
Côte d'Ivoire 98	2.59	8.58	3.05
Cameroon 96	1.08	1.67	0.95
Ethiopia 00	1.48	2.63	1.41
Ghana 98	1.26	2.57	1.21
Guinea 94	0.70	2.77	1.05
Gambia 98	0.85	1.41	0.45
Kenya 97	1.38	2.29	1.40
Madagascar 01	1.55	1.95	1.36
Mozambique 96	0.39	0.45	0.28
Malawi 97	0.47	0.51	0.47
Nigeria 96	0.91	1.34	1.11
Uganda 99	1.07	2.16	1.20
Zambia 98	0.60	0.85	0.48

Source: Authors' calculation.

FIGURE 8.4
Impact on poverty gap reduction: equal and progressive transfers



Source: Authors' calculation.

(ii) When 20%, 30%, or 40% of average poverty line is transferred

As shown in the previous subsection, a transfer of 0.5 percent of GDP appears to be rather too small to have a significant impact on poverty reduction in the 15 African countries studied here. For this reason, in this subsection we raise the size of transfers relative to the average national poverty thresholds to assess how much difference the increased size of transfers makes compared to the transfer of 0.5 percent of GDP. In this subsection, alternative simulation scenarios we use differ depending on the size of transfers, which change proportionally with the average national poverty line: 20 percent, 30 percent, and 40 percent of the poverty line. It should be noted that, since under these scenarios the transfers as share of the average national poverty lines are fixed over time, the rate of economic growth will not affect the size of the programme. Hence, the short- and long-term impacts will be quite similar.

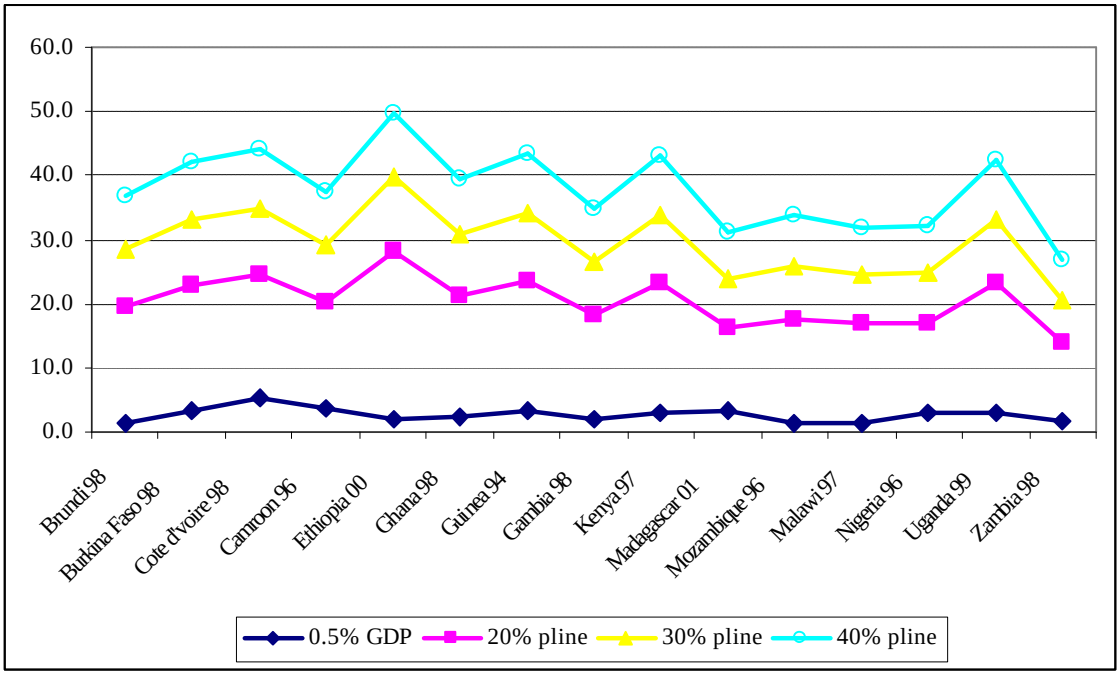
The simulation results are summarized in Tables 8-3 to 8-5 for all children and separately, for three age-groups in Tables B.5 – B.7 in Appendix. Of the results displayed in the three tables, the first is that the transfer proportional to the average national poverty line has far greater impact on national poverty reduction than the transfer of 0.5 percent of GDP. This is also illustrated in Figure 8.5. In the case of Ethiopia, where per capita GDP is the lowest of all, the headcount index falls by 17.43 percent if the transfer of 20 percent of its average national poverty threshold is targeted to all the children under study. The poverty impact in Ethiopia was negligible under the scenario of 0.5% GDP.

TABLE 8-3
Percentage change in poverty reduction when targeting 20% of average poverty line

Country	All children aged 5-16 years		
	Head count ratio	*Poverty gap ratio*	*Severity of poverty*
Burundi 98	7.35	19.56	27.79
Burkina Faso 98	12.09	23.02	30.78
Côte d'Ivoire 98	15.69	24.67	31.51
Cameroon 96	12.23	20.30	28.64
Ethiopia 00	17.43	28.24	36.32
Ghana 98	10.45	21.37	29.19
Guinea 94	11.79	23.55	32.91
Gambia 98	7.47	18.16	26.71
Kenya 97	10.06	23.33	32.99
Madagascar 01	4.81	16.25	25.18
Mozambique 96	5.47	17.64	26.72
Malawi 97	6.34	16.77	24.88
Nigeria 96	6.20	16.87	25.71
Uganda 99	11.35	23.17	31.65
Zambia 98	5.56	14.01	21.31

Source: Authors' calculation.

FIGURE 8.5
Impact of poverty gap reduction when transferring to all children



Source: Authors' calculation.

Secondly, compared to the headcount ratio, the poverty impact becomes greater for the poverty gap and severity of poverty indices if 20 percent of the poverty line is transferred to the children. Again in Ethiopia, the poverty gap and severity of poverty indices fall by 28.24 and 36.32 percent respectively, which is indeed far greater than the impact we noted under the headcount ratio. As noted earlier, these results stem from the fact that simulated transfers do reach people well below the poverty line for whom a fixed transfer has relatively greater effect on the reduction of income shortfall and on inequality among the poor.

Finally, although the transfer programmes based on 20 percent, 30 percent, and 40 percent of the average national poverty line do have much greater impacts on poverty reduction at national level than the transfer programmes based on 0.5 % of GDP, they are very expensive and may not be affordable for most countries in Africa. For Ethiopia, as the poorest country included in the study, a programme based on the 40 percent of its average national poverty line will require the minimum expenditure of almost 8.31 percent of GDP (see Figure 8.6). A question then remains as to whether a poor country like Ethiopia is able to afford this fiscal effort. Even in a country like Côte d'Ivoire, that is the most affluent of the 15 countries, has to forego about 2.8 percent of its GDP to reduced national poverty to the maximum level. This is not a small cost to bear for any country in Africa and it may be part of reason why governments tend to set a fairly low benefit level. As a result, however, there will be an insignificant reduction in the impact of the programme on poverty.

TABLE 8-4
Percentage change in poverty when targeting 30% of average poverty line

Country	All children aged 5-16 years		
	Head count ratio	*Poverty gap ratio*	*Severity of poverty*
Burundi 98	14.09	28.47	38.92
Burkina Faso 98	18.58	33.07	42.73
Côte d'Ivoire 98	22.95	34.89	43.05
Cameroon 96	15.54	29.23	39.92
Ethiopia 00	24.72	39.88	49.10
Ghana 98	16.04	30.89	40.52
Guinea 94	17.42	34.02	45.46
Gambia 98	11.10	26.64	37.74
Kenya 97	15.89	33.74	45.36
Madagascar 01	8.23	23.94	35.54
Mozambique 96	8.63	25.94	37.60
Malawi 97	10.32	24.56	34.98
Nigeria 96	10.62	24.73	36.27
Uganda 99	18.16	33.27	43.75
Zambia 98	8.12	20.60	30.39

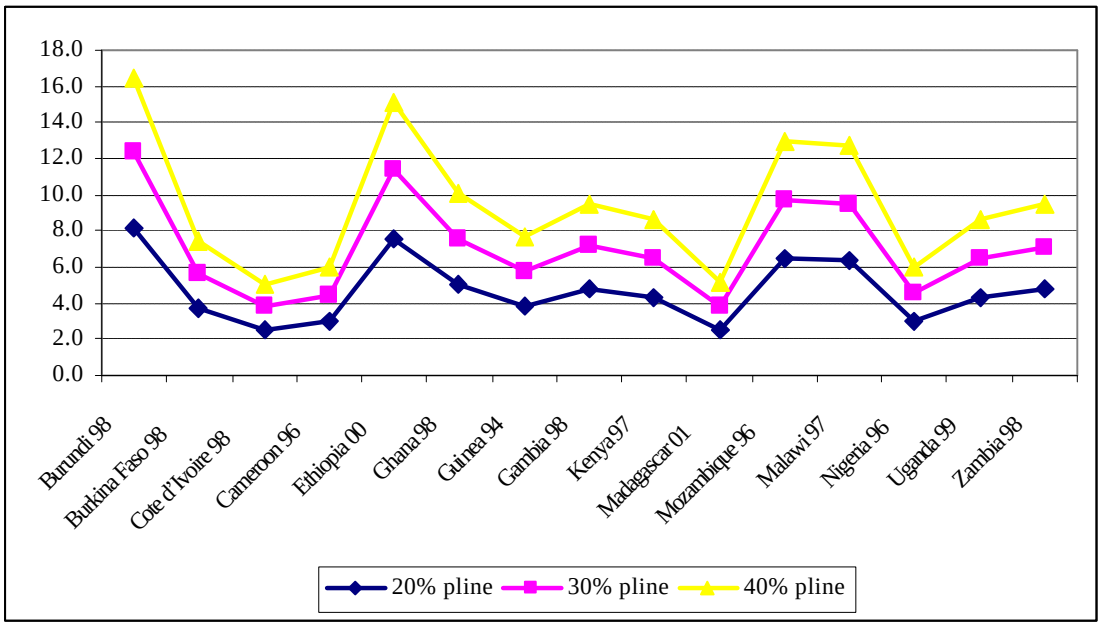
Source: Authors' calculation.

TABLE 8-5
Percentage change in poverty when targeting 40% of average poverty line

Country	All children aged 5-16 years		
	Head count ratio	*Poverty gap ratio*	*Severity of poverty*
Burundi 98	18.00	36.65	48.40
Burkina Faso 98	25.18	42.14	52.69
Côte d'Ivoire 98	29.74	43.98	52.22
Cameroon 96	21.31	37.50	49.40
Ethiopia 00	33.92	49.85	58.94
Ghana 98	23.05	39.44	49.93
Guinea 94	22.94	43.57	55.71
Gambia 98	14.27	34.76	47.33
Kenya 97	22.68	43.12	55.31
Madagascar 01	11.85	31.25	44.51
Mozambique 96	12.25	33.82	46.95
Malawi 97	14.42	31.85	43.66
Nigeria 96	13.89	32.00	45.42
Uganda 99	24.75	42.33	53.71
Zambia 98	11.20	26.91	38.47

Source: Authors' calculation.

FIGURE 8.6
Costs of programmes as % of GDP



Source: Authors' calculation.

9 IMPACTS OF CCT PROGRAMMES ON SCHOOL ATTENDANCE

9.1 DETERMINANTS OF SCHOOL ATTENDANCE: THE HOUSEHOLD DECISION PROCESS

Education can be seen by families as both an investment and a consumption good. In this section, we will model the decision to send children to school (attendance) based on a unitary model of the household decision process so that preferences of mother and father are identical, or in case this assumption does not hold, that the head of the household maximizes a single utility function, which can be his/her own utility function.[9] Following Glick and Sahn (1998) we assume that parents live for two periods, one in which they work and the other one in which they do not work. In this second period they live on remittances of their children. We also assume that parents value education of their children through two channels. First, as an investment, since the household future consumption level (C_{it+1}) will depend on the children's future earnings (Y_{it+1}), which in turn is a function of the children's educational achievement (S_i). Even if one considers the parents to be altruistic and to care about children's wealth regardless of remittance prospects, it will also enter the utility function as an investment good, because education enhance child's prospects in the labour market and, therefore, future earnings. Second, education can be valued as a consumption good in itself, since parents may enjoy having educated children, regardless of the economic returns of education. Therefore, parental preference in a household with *n* children may be represented by a utility function such as:

$$U = U(C_t, C_{t+1}, S_{c1}, ..., S_{cn}) \quad (1)$$

where C_t and C_{t+1} are household consumption in the first and second periods and S_c is the educational level of the children in the household.

In order to maximise its utility, the household takes into account its income constraint. This constraint includes earned and unearned income of all members of the household, including children. We also consider as productive time the contribution of children to family welfare when they do domestic chores such as taking care of younger siblings. It is clear that in order to increase the consumption (demand) of education, families will have to reduce their consumption of other goods and the reduction in the contribution of children to the family welfare will also provoke a fall in their total income. Even if there is no direct cost of education due to its free public service nature in some countries, in most countries parents will incur in the cost of transportation, books and uniforms. For this reason, the low demand for education may be triggered by credit constraints of the family which cannot afford to pay direct costs of schooling and/or who cannot attain a minimum standard of living without the children's contribution to the welfare. The income constraint can be described as:

$$I = V + L_p w_p + P_c C_t + \sum_{i=1}^{n} (P_s S_{ci} + w_c T_{Si}) \quad (2)$$

where V is unearned income, L_p and w_p are, respectively, total hours of parental leisure and parental wages, P_c is the price of consumption goods, P_s are direct costs per child of education, and T_{si} is the total hours dedicated to school and w_c is the children wage rate.[10] The first term inside the brackets captures the direct cost of education (transport, books, uniform and fees) and the second term captures the opportunity cost of sending children to school.

In such a context the maximization of the utility function (1) subject to the full income constraint (2) yields a reduced form equation for the demand for education (and other goods) such as:

$$S_{ci} = S_{ci}(w_p, P_c, Z_p, Z_{ci}, H) \tag{3}$$

where Z_p is a vector of characteristics of the head of the household, such as education, gender and age and Z_{ci} is a vector of characteristics of the children such as age and gender, and H a vector of household characteristics, mainly its composition.

For some of the arguments in the demand function (3), it is possible to predict the direction of their impact. Parent's education, for instance, is likely to increase education by making it easier to learn for children who are similar in other respects to their neighbours' children, and therefore, to raise their children's returns relative to those of less educated parents. Moreover, more educated parents are more likely to value more educated children than their less educated counterparts. There may be differences in attendance (demand for education) between boys and girls because of parents' perception that boys would receive higher returns to schooling than girls or because of gender discrimination within the household. Moreover, cultural features of the community may make parents to invest more in boys, who are more likely to help their parents when older, than in girls who marry and join the family of their spouse. The lower attendance rates for girls compared to boys in Africa as well as their lower enrolment rates have been blamed on these traditions. These aspects are captured in Equation 3 by the gender of the children and also by the gender of the head of household, as the latter may have different preferences concerning boys and girls' education, according to their own gender.

As for the household age composition and structure, the effects vary according to the exogenous changes observed. For instance, an increase in the number of very young children may increase the demand for older girl's childcare activity. Note that in this particular example, we are assuming that girls are more affected by this type of change than boys. By the same token, more children of the same age-group may reduce the cost of opportunity of sending them to school, as they can work in shifts in childcare activities or domestic chores.

Finally, our main variable of interest in this study is whether household per capita expenditure will have a positive impact on the demand for children's education. This may be due to the fact that families have such low incomes that they are unable to meet their minimum basic needs. These families may want to invest in the children's education, but are not able to pool their own (few) resources to do so, or to borrow sufficient money for such a long term investment. Another way to look at this question is to assume that education is a normal good, and so an increase in the income of the family would lead to a higher level of children's education consumption. If this were the case, any cash transfer to the families would make them more likely to send their children to school regardless of any conditions

Based upon this model and constrained by data availability, we postulate a probit model[11] to analyze how those variables affect the probability of attendance at school for children in the countries analysed. We will present the marginal effects and discuss some of the results separately for boys and girls in order to have understand how those variables influence school attendance. We are particularly interested in the effect of increase in household per capita expenditure (income), because it will give us an idea of the impact of cash transfers in the absence of the school attendance conditionality. However, the simulations in the next subsection will be based on a counterfactual exercise so that we can approach reality as accurately as possible and assess changes in the whole distribution of probabilities and not only at the level of means.[12]

Our empirical approach defines a reduced form equation for children's school attendance as a function of the gender of the children, whether the household is located in an urban or rural area, literacy of the head of the household,[13] age and age squared of the head of the household, the distribution of other children by age-groups (0-5, 6-16 and 17-25), household size, whether the child is an offspring of the head or not and whether he/she is a grandchild of the head, and finally, the log of per capita expenditure. The household size is included in order to capture economies of scale that affect household's standard of living. The marginal coefficient of the log of per capita expenditure will allow us to measure the impact of the cash transfer (converted into per capita terms) on school attendance, assuming that there is no conditionality. Note that our model is not a structural model. It is based on the school attendance determinants and is basically a reduced form model, so it overlooks several behavioural interactions that are likely to affect attendance. It treats the family structure and per capita family expenditure as exogenous, and the latter as being basically determined by adults' and children's working decisions. In their ex-ante evaluation of *Bolsa Escola*, Bourguignon et al. (2002) used a multinomial logit model to incorporate children's labour market behaviour. We could not follow this path because we did not have comparable information for most countries on whether the children work and study at the same time and on wage rates for those who work. This leads us to restrict our model to the decision of going to school or not (a binary discrete choice) and then, skipping the effect of cash transfer on children's labour market outcomes. Therefore we could not incorporate conditionality in our model.

Bourguignon et al (2002), however, did this exercise and concluded that the impact on attendance is sizeable only when conditions are imposed. Our simulations will measure the impact of the cash transfer on school attendance without conditions. Thus, our results provide only the lower bounds of the impact of the cash transfers.

TABLE 9-1
Variables used in the Probit for School Attendance

Variables	*Availability*
Gender (girls=1, boys=0)	All countries
Urban (urban=1, rural=0)	All countries
Head illiterate	Missing for some countries: The Gambia, Zambia and for Côte d'Ivoire it is missing for 2% of the sample
Head never attended school	Used as proxy for literacy for The Gambia, Zambia and Côte d'Ivoire
Age of Head and age squared (in years)	All countries
Sex of Head (women=1, men=0)	All countries
Share of other children (0-5)	All countries
share of other children (6-16)	All countries
share of other people (17-25)	All countries
Household size	All countries
Not offspring of Head	All countries except Nigeria
Grandchild	All countries except Burundi, Côte d'Ivoire, Ethiopia, Gambia. Uganda and Nigeria
Log of (annual) per capita expenditure	All countries

We estimated the probit models for all children aged 5 to 16 years and for 3 age-groups: 5-10, 11-13 and 14-16 years and separately for boys and girls. We also made calculations using the interactions of the log of per capita expenditure with dummy variables, *viz*, whether or not the household is poor and whether or not the household was in the rural area.[14]

Although the model was estimated separately for different age-groups, we will mainly report the results of the model for children aged 5-16 years. The estimates of the models for individual age-groups are presented in appendix B.

Table 9-2 shows the marginal effects on school attendance of the models for children aged 5-16 years old for the 15 countries. Below we analyse the main results.

As for gender differences in attendance at school, the models show that girls are much less likely to attend school than boys: 13 out of 15 countries show a negative marginal effect, in some cases, the effect is as large as 16% (Guinea), as shown in Figure 1. This means that even after controlling for the household structure, girls are still discriminated against in relation to school attendance. Countries with non-significant differences between boys and girls are Kenya, Madagascar and Cameroon.[15] This may suggest that a CCT programme in most African countries should look carefully at the situation of girls within the household. One alternative is to give them higher transfer in order to stimulate the families to send them to school. In Mexico, there has been some experience with gender differences in the transfer due to the higher drop-out rate of girls in secondary education. In general, children in urban areas have a higher attendance than children in rural areas, which was something expected given the probably pro-urban distribution of schools. But there are a few exceptions: Cameroon, The Gambia, Kenya, and Uganda[16] show no statistical difference between rural and urban. It seems that starting a CCT programme in rural areas would be a better policy both in terms of achieving a greater reduction in poverty (as observed earlier) and greater impact on school attendance.

TABLE 9-2

Marginal Effects of School Attendance Probit Model (5-16 years old)

	Burundi	Burkina Faso	Cameroon	Côte d'Ivoire (1)	Ethiopia	The Gambia	Ghana
Gender (female=1)	-0.081	-0.095	-0.045	-0.128	-0.082	-0.086	-0.046
	[4.16]**	[13.38]**	[1.91]	[10.37]**	[8.47]**	[5.36]**	[5.12]**
Urban	0.232	0.345	-0.023	0.114	0.439	-0.001	0.028
	[9.89]**	[25.88]**	[0.57]	[6.78]**	[33.67]**	[0.03]	[2.21]*
Head illiterate	-0.114	-0.195	-0.378		-0.1		-0.169
	[4.69]**	[13.45]**	[8.83]**		[7.51]**		[12.30]**
Head never attended school				-0.275		-0.122	
				[16.12]**		[4.41]**	
Age of Head	0.017	0.002	-0.002	0.002	0.001	0.007	-0.006
	[3.04]**	[0.77]	[0.22]	[0.54]	[0.42]	[1.77]	[2.29]*
Age_squared	-0.015	-0.001	0.009	0.001	0	-0.006	0.006
	[2.72]**	[0.57]	[1.02]	[0.13]	[0.17]	[1.50]	[2.30]*
Sex of Head	0.117	0.079	0.161	0.111	0.081	0.076	0.03
	[3.54]**	[3.91]**	[4.38]**	[4.56]**	[5.26]**	[2.70]**	[2.24]*
Share of children (0-5)	-0.059	0.05	-0.113	-0.055	-0.371	-0.087	-0.039
	[0.40]	[1.09]	[0.67]	[0.75]	[6.47]**	[0.81]	[0.68]
Share of children (6-16)	0.099	0.126	0.159	0.332	-0.148	0.169	0.098
	[0.95]	[3.01]**	[1.36]	[5.48]**	[3.06]**	[1.97]*	[2.28]*
Share of people (17-25)	0.218	0.03	0.008	0.105	-0.107	0.101	0.082
	[1.87]	[0.70]	[0.06]	[1.54]	[2.01]*	[1.09]	[1.59]
Household size	0.016	0.001	0.011	0.003	0.025	-0.004	-0.006
	[1.91]	[0.75]	[2.42]*	[1.23]	[6.60]**	[1.33]	[1.93]
Not offspring of Head	-0.01	-0.066	-0.053	-0.116	-0.118	-0.019	-0.11
	[0.24]	[1.93]	[1.22]	[6.61]**	[7.88]**	[0.96]	[6.23]**
Grandchild		-0.014	0.047				0.016
		[1.37]	[0.84]				[0.86]
log per capita expenditure	0.128	0.098	0.068	0.129	0.076	0.072	0.056
	[9.07]**	[11.87]**	[2.46]*	[10.43]**	[6.89]**	[4.43]**	[5.47]**
N	11474	19339	3481	8291	26867	4771	8960

(cont…)

Note: Robust z statistics in brackets.

* significant at 5%;

**significant at 1%.

Table 9-2 (cont.)	Guinea	Kenia	Madagascar	Mozambique	Malawi	Nigeria	Uganda	Zambia
Gender (female=1)	-0.156	0.003	-0.02	0.002	-0.098	-0.035	-0.015	-0.025
	[12.86]**	[0.41]	[1.38]	[0.17]	[8.28]**	[2.53]*	[2.19]*	[2.84]**
Urban	0.309	-0.034	0.04	0.05	0.106	0.152	-0.008	0.11
	[14.43]**	[1.78]	[2.36]*	[2.04]*	[6.90]**	[6.32]**	[0.55]	[10.46]**
Head illiterate	0.042	-0.147	-0.088	-0.119	-0.164	-0.344	-0.087	
	[1.19]	[12.92]**	[4.33]**	[8.01]**	[10.57]**	[16.87]**	[8.52]**	
Head never attended school								-0.145
								[6.78]**
Age of Head	0.004	0.012	0.005	0.007	0.02	0	-0.002	0.013
	[0.91]	[4.91]**	[1.10]	[2.09]*	[5.45]**	[0.19]	[1.85]	[4.53]**
Age squared	-0.004	-0.009	-0.006	-0.005	-0.017	0.006	0.004	-0.008
	[0.96]	[3.59]**	[1.33]	[1.67]	[4.41]**	[1.98]*	[3.08]**	[2.79]**
Sex of Head	-0.001	0.044	-0.045	0.035	0.08	0.239	0.003	0.088
	[0.05]	[4.68]**	[1.62]	[1.98]*	[4.30]**	[9.16]**	[0.30]	[6.51]**
share of children (0-5)	-0.15	0.026	0.191	-0.219	-0.045	-0.306	0.075	-0.124
	[1.74]	[0.58]	[2.23]*	[3.08]**	[0.69]	[3.87]**	[1.81]	[2.20]*
share of children (6-16)	0.015	0.148	0.316	-0.022	0.097	0.251	0.079	-0.001
	[0.21]	[3.50]**	[4.71]**	[0.37]	[1.78]	[4.15]**	[2.25]*	[0.02]
share of people (17-25)	0.078	0.1	0.103	-0.006	-0.047	0.063	-0.017	-0.055
	[0.97]	[2.48]*	[1.30]	[0.09]	[0.78]	[0.78]	[0.37]	[1.16]
Household size	0.008	-0.007	-0.012	0.013	0.01	-0.007	0.001	0.016
	[3.08]**	[2.76]**	[2.22]*	[2.26]*	[3.18]**	[1.48]	[0.70]	[6.38]**
Not offspring of Head	-0.087	-0.757	-0.15	-0.084	-0.018		-0.035	0.012
	[4.90]**	[11.36]**	[3.50]**	[3.69]**	[0.96]		[3.44]**	[0.81]
Grandchild	-0.084	-0.034	0.078	-0.037	-0.035			-0.134
	[2.72]**	[2.63]**	[2.44]*	[1.48]	[1.40]			[7.07]**
log per capita expenditure	0.146	0.049	0.063	0.021	0.109	-0.009	0.097	0.102
	[9.25]**	[4.93]**	[4.61]**	[2.06]*	[11.50]**	[0.71]	[11.35]**	[16.61]**
N	9659	18623	5486	9540	14548	13975	22327	31568

Note: Robust z statistics in brackets.

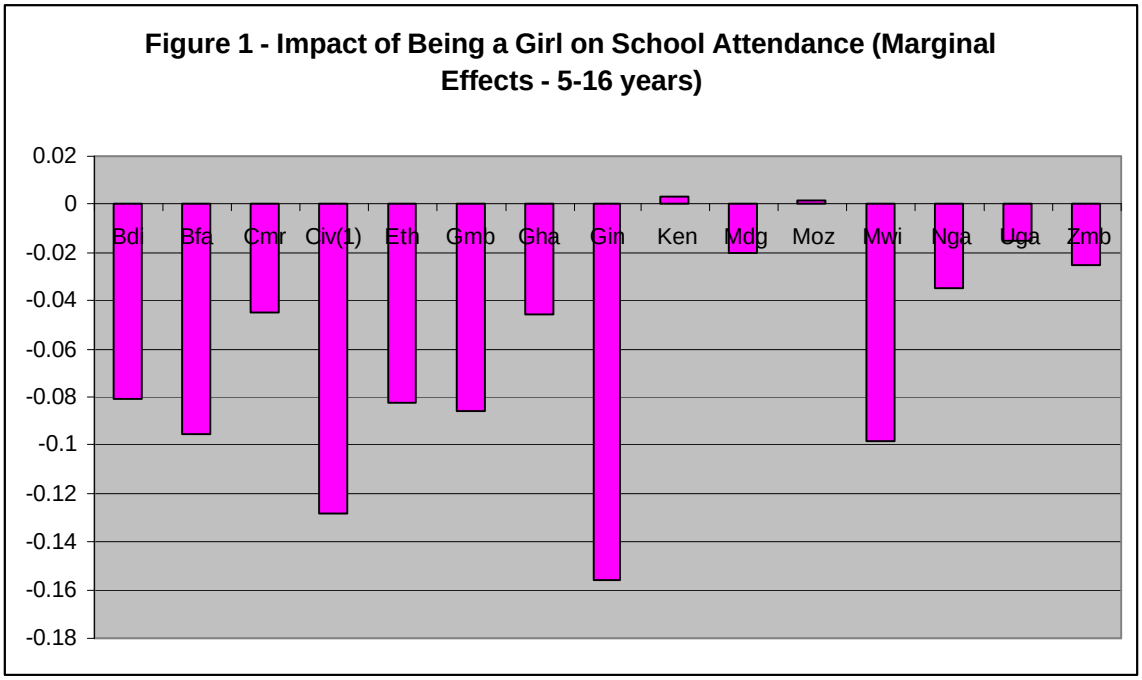
* significant at 5%;

**significant at 1%.

(1) Côte d'Ivoire model displayed is the one with 'ever attended school' as proxy for literary.

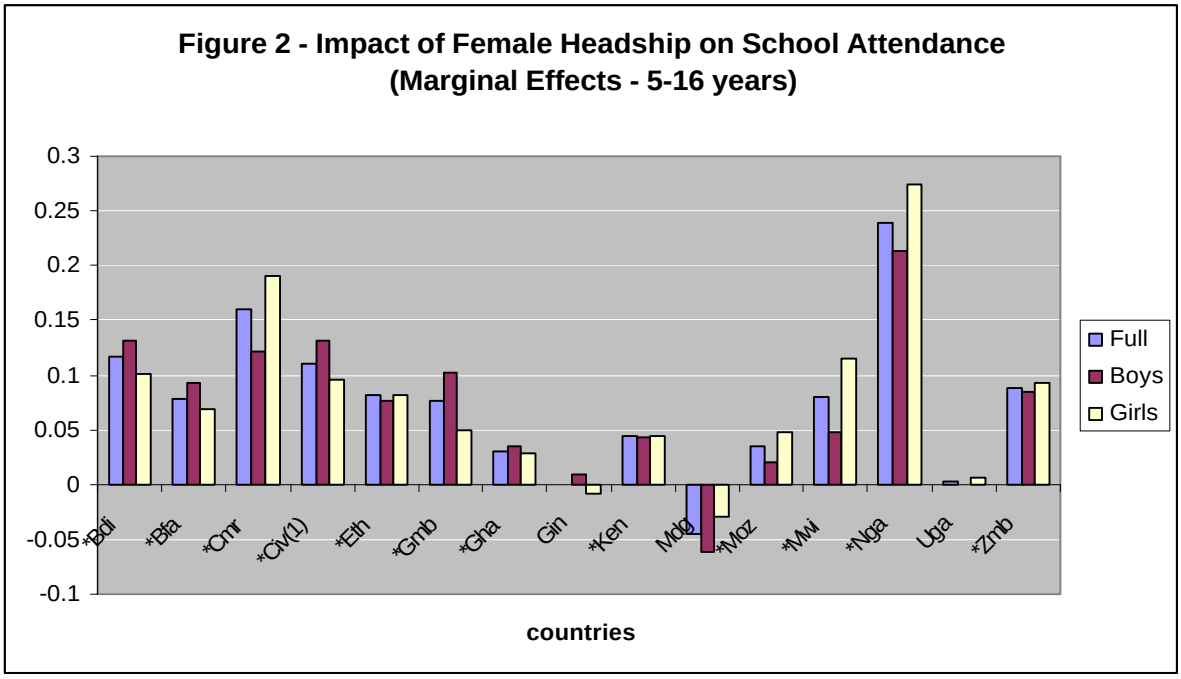
Source: Authors' calculation.

Figure 1 - Impact of Being a Girl on School Attendance (Marginal Effects - 5-16 years)



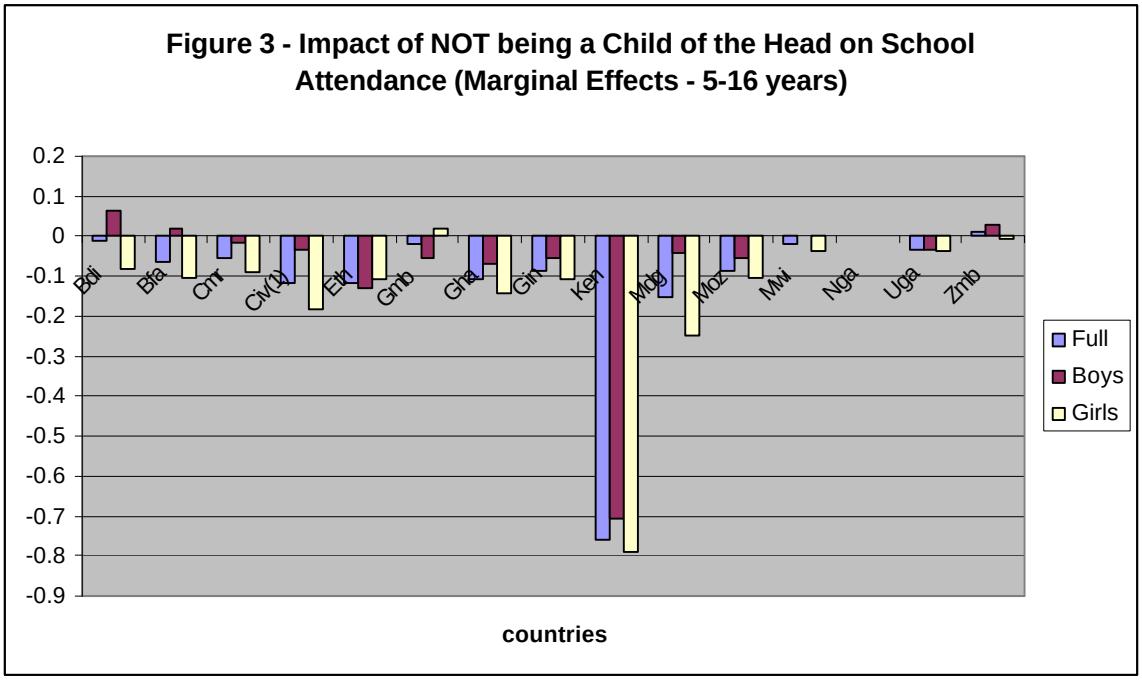
Source: Authors' calculation.

As for the characteristics of the head of the household, the patterns vary widely. We introduce a quadratic term in age to capture possibly convexity or concavity of the relationship. However, whereas for some countries the probability of sending children to school first increases and then decreases with age of the household head (concave relationship), e.g., Burundi, Kenya, Malawi, and Zambia, for others the relationship is convex, i.e., probability of attendance increases with the age of the head, e.g., Nigeria and Ghana. But for most countries, such a relationship simply does not hold true. Therefore, once controlled for other competing variables, it seems that age of the head is not a major determinant of children's school attendance in Africa. Unlike age, gender of the head of the household seems to be a major determinant of school attendance. For most countries, female headship increases significantly the probability of school attendance and this occurs for both boys and girls[17] as shown in Figure 2. The only three exceptions are Guinea, Madagascar and Uganda where the gender of the head of the household does not matter in terms of school attendance.



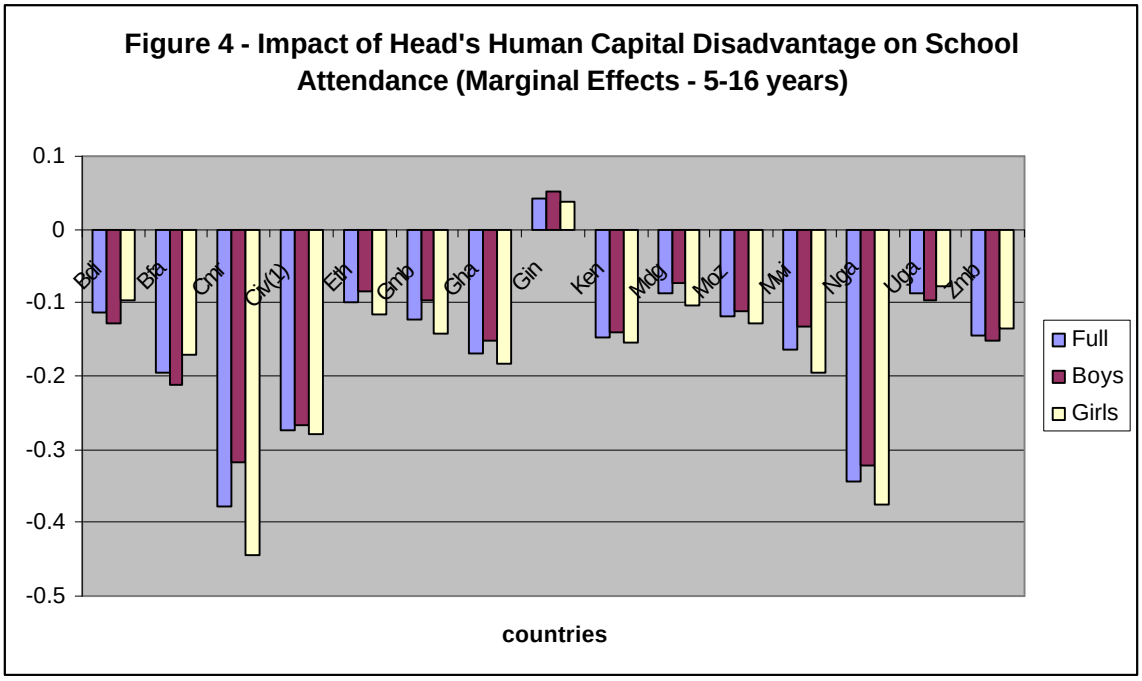
Source: Authors' calculation.

Another important point is the relationship between children and the head of household. In Africa, this is particularly important due to the high incidence of foster families and high rates of orphanage, particularly in countries hit by HIV-AIDS epidemic. To capture some sort of discrimination against children who are not offspring of the head in terms of school attendance we included dummy variables for the case when the child is not offspring of the head and for the case when he/she is a grandchild. The results show that children who are not offspring of the head are, in fact, less likely to attend school in most countries,[18] particularly in Kenya, as can be seen in Figure 3. This effect is more evident for girls than for boys, though. For countries in which the data allow us to identify whether the child is a grandchild of the head, we obtained a similar picture, but statistically the results are less strong. Nevertheless, for most countries grandchildren have lower attendance rates, particularly if the child is a girl.



Source: Authors' calculation.

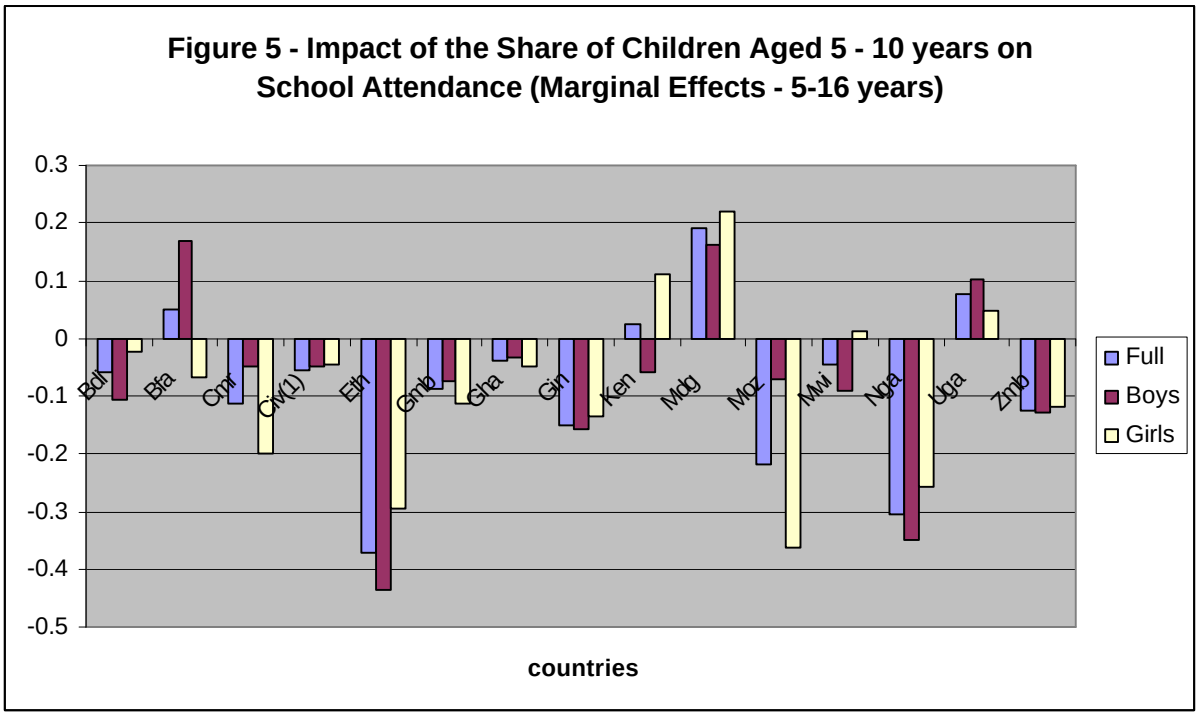
The human capital disadvantage of the head of the household has a significant impact on the probability of child attendance at school. Both measures used in this report: literacy and 'never attended school' (used for Côte d'Ivoire, The Gambia and Zambia) show significant negative impact on school attendance. As shown in Figure 4 this effect seems to affect girls slightly more than boys and it is particularly strong in Cameroon, Côte d'Ivoire and Nigeria. This result suggests that a literacy programme for adults in the household linked to a child school attendance CCT programme could have a far-reaching impact on children's attendance.



Source: Authors' calculation.

As for the impact of the share of other children by age-group, the results are not very strong, but it is possible to capture some patterns over countries. For instance, the share of other children under the age of 5 has in general a negative impact on school attendance, as seen in Figure 5, but it is statistically significant only for Ethiopia, Mozambique, Nigeria and Zambia.[19] This result suggests that childcare services or infant education can be another component of CCT programmes that could boost the effects of a cash transfer and make it easier for the families to comply with the school attendance requirement. The share of children on school age has, in general, a positive impact on school attendance[20] which is significant for Burkina Faso, Côte d'Ivoire, The Gambia, Ghana, Kenya, Madagascar, Nigeria and Uganda. Those results, when statistically significant, are particular strong for girls, which suggests that more siblings (or other children) with the same age may help to share domestic activities so that all children can afford to go to school. The share of younger people in the household (14 to 16 years) does not seem to have an impact on children's school attendance since for most countries the estimates were not significant.[21] Economies of scale, as measured by the size of the household only play a statistically significant positive role in Cameroon, Ethiopia, Guinea, Mozambique, Malawi and Zambia and a statistically significant negative role in Kenya and Madagascar.[22]

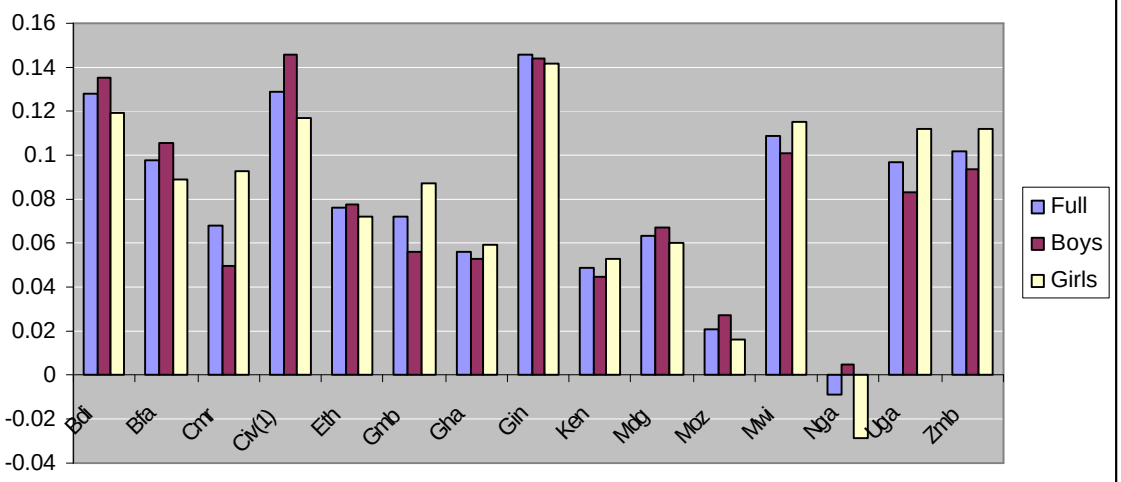
Figure 5 - Impact of the Share of Children Aged 5 - 10 years on School Attendance (Marginal Effects - 5-16 years)



Source: Authors' calculation.

Finally, the variable of most interest in this report, the log of per capita expenditure has a positive and statistically significant impact in almost all countries. The only surprising exception is Nigeria, where attendance at school does not bear any relationship with per capita expenditure.[23] Two other exceptions are the results for boys in Cameroon and girls in Mozambique. The marginal effects – at the mean level of all covariates – are particularly high in Burundi, Côte d'Ivoire, Guinea, Malawi, Zambia and Uganda, as can be seen in Figure 6.

Figure 6 - Impact of the log of the per capita Expenditure on School Attendance (Marginal Effects - 5-16 years)



Source: Authors' calculation.

Separate results by age-groups can be found in Appendix C. There are no major differences among those groups in relation to the results presented for the full sample of children of school age (5-16 years old). However, it is worth mentioning that for the 11-13 group the statistical significance of the positive marginal effect of per capita expenditure on attendance is lost for countries like The Gambia, Kenya, Madagascar and Mozambique. This may be due to the smaller sample size on which the estimates for this age-group are based. The same also happens for Ethiopia and Mozambique when we look at the effects for the 14-16 age-group.

The results shown above are consistent with findings from studies on the determinants of school attendance, enrolment rates and, primary schooling completion based on African country data. Lloyd and Blanc (1996) showed that the educational level of the head of the household is a major factor determining children's school attendance and grade attainment in six sub-Saharan countries (Kenya, Tanzania, Cameroon, Niger, Malawi, Namibia and Zambia). They also found a significant impact of female headship on education indicators. Deolalikar (1997) showed that the impact of mother's education on children's enrolment rate is significant, particularly for girls in Kenya. Shapiro and Tambashe (2000) found that improved economic well-being leads to greater investment in education for both boys and girls in Kinshasa (Congo), but does not necessarily close the gap between them. Additionally, they found that family structure and the child's relationship to the head of household also influence the decision to invest in children's education. In the latter case, children residing in households where his/her parent is not the head of the household tend to have lower educational attainment. Glick and Sahn (2000) found in Guinea a negative impact of the presence of children of pre-school age on girls' grade attainment, current enrolment and on the decision to leave school. They also suggested that the impact of per capita (adult) income on education outcomes only matters for girls.

It is clear from the results above, and from the findings of other research, that country-specific characteristics will lead to slightly different results regarding the importance of family structure, of the human capital of the head of the household, of per capita income of the household and, of course, the structure of supply of educational services as determinants of school attendance. Assuming that education has been one of the main focuses of governments trying to reach the MDGs, the results above suggest that there is much to be done. The results suggest that the current supply of educational services (both in qualitative and quantitative terms) has not been able to break the advantage of children in better "equipped" households in having access to it, part of the problem may be due to the lack of demand for educational services, in which case family structure and credit constraint play a fundamental role. In this case, cash transfer conditional on children's attendance at school play a fundamental role in achieving MDGs related to education. In the next section we will investigate the effect of the cash transfer (without conditionality) on school attendance using different scenarios.

9.2 SIMULATIONS OF THE IMPACT OF THE TRANSFERS WITHOUT CONDITIONALITY

The simulations on this subsection are based on the probit estimates of the model presented in subsection 9.1. There, we presented the marginal effect of the model: $f(X\,b)b$, now we shall discuss changes in the predicted probabilities of attendance: $P(Attendance=1)=\Phi(X\,b)$

where Φ is the standard normal distribution function, *X* are a set of explanatory variables derived from reduced form demand for education [equation (3)] and also include some preference shifters: gender of the children, urban household, literacy of the head, age and gender of the head, family structure and log of (annual) per capita expenditure. Given the estimated coefficients, $\widehat{b}$, we can estimate the predicted average of P(Attendance=1), which will be equal to the actual average attendance. Therefore, we can estimate the impact of a change in per capita expenditure triggered by (any) cash transfer programme on school attendance as:

$$\widehat{P}(A=1|\,X)-\widehat{P}(A=1|\,\tilde{X})=\Phi(X\,\widehat{b})-\Phi(\tilde{X}\,\widehat{b}) \qquad (4)$$

where the only difference between X and $\tilde{X}$ is the added the per capita value of the cash transfer by household. Therefore, the difference (4) gives us an idea of the impact of the cash transfer on attendance at school, keeping everything else in the households unchanged.

We simulate several scenarios of cash transfer by the programme. First we have the scenarios based on where the budget is given as a percentage of GDP. We estimate the impact of 0.5% of the GDP budget spent on all children aged 5 to 16 (with a uniform transfer and with a transfer value that increases 5% with the child's age), and separately, the same amount spent only on 5-10 year-olds, only on 11-13 year-olds and only on 14-16 year-olds. All those simulations are carried out under three different targeting scenarios: universal, targeting only poor children (children living in household below the poverty line) and targeting children only in rural areas. In addition, we estimate the impact of having 1.5% of the GDP spent on all children aged 5-16 years. Given the very modest results both in terms of poverty reduction as seen in Section 8 and on attendance as we are going to see below, we also experiment with

transfers set according to different percentages of the average poverty line for each country. We simulate transfers with the value of 20%, 30% and 40% of the poverty line in a universal context. Better results are achieved with a transfer based on 40% of the poverty line, but they are still very modest. These results indicate that the income effect that can be caused by a cash transfer programme in sub-Saharan countries is not sufficient to lead to a huge impact on attendance rates. Therefore the imposition of conditions seems to be a very important mechanism to raise attendance among children.

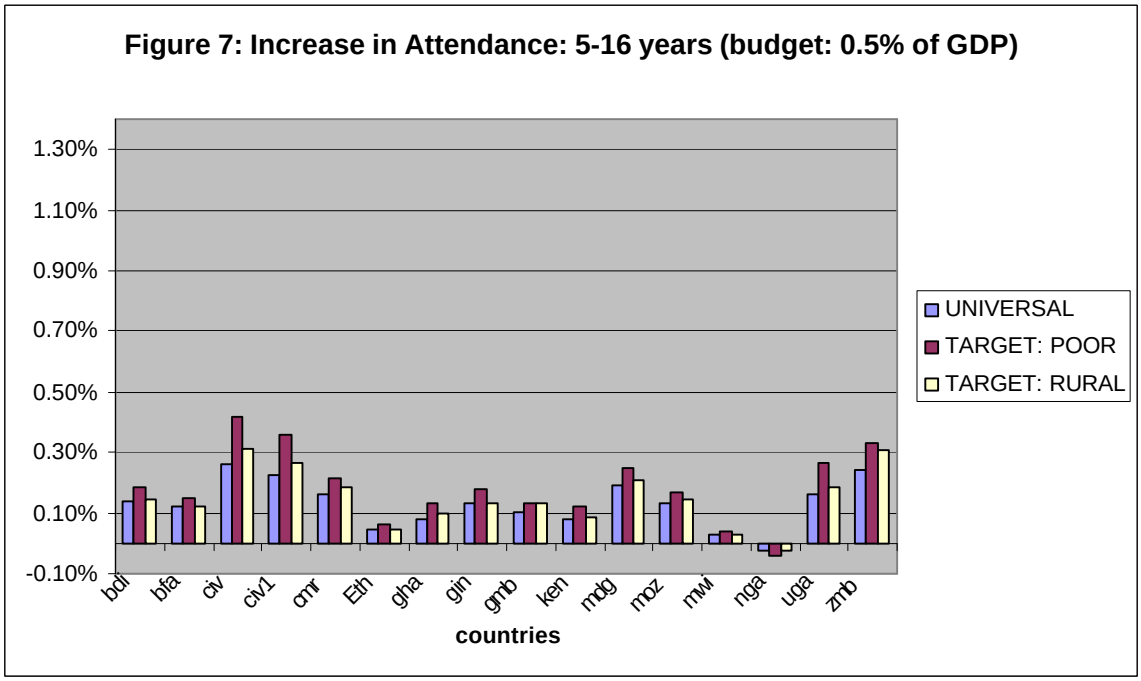
Table 9-3 shows the results of three alternative designs for the population aged from 5 to 16 years. The simulations with the transfer budget of 0.5% of the GDP for each country do not lead to major hikes in attendance rates. Actually the impact in the case of universal access to the transfer varies – taking into consideration only the positive impact – from 0.03% for Malawi to 0.26% for Côte d'Ivoire.[24]

TABLE 9-3:
Increase in school attendance for children aged 5 - 16 years in 3 scenarios (cash transfer based on 0.5% of GDP)

Country	Universal	Target: poor	Target: rural
Burundi	0.14%	0.18%	0.14%
Burkina Faso	0.12%	0.15%	0.12%
Côte d'Ivoire	0.26%	0.42%	0.31%
Côte d'Ivoire1	0.22%	0.36%	0.27%
Cameroon	0.16%	0.21%	0.18%
Ethiopia	0.04%	0.06%	0.05%
Ghana	0.08%	0.13%	0.10%
Guinea	0.13%	0.18%	0.13%
Gambia	0.10%	0.13%	0.13%
Kenya	0.08%	0.12%	0.09%
Madagascar	0.19%	0.25%	0.21%
Mozambique	0.14%	0.17%	0.14%
Malawi	0.03%	0.04%	0.03%
Nigeria	-0.03%	-0.04%	-0.03%
Uganda	0.16%	0.26%	0.19%
Zambia	0.25%	0.33%	0.31%

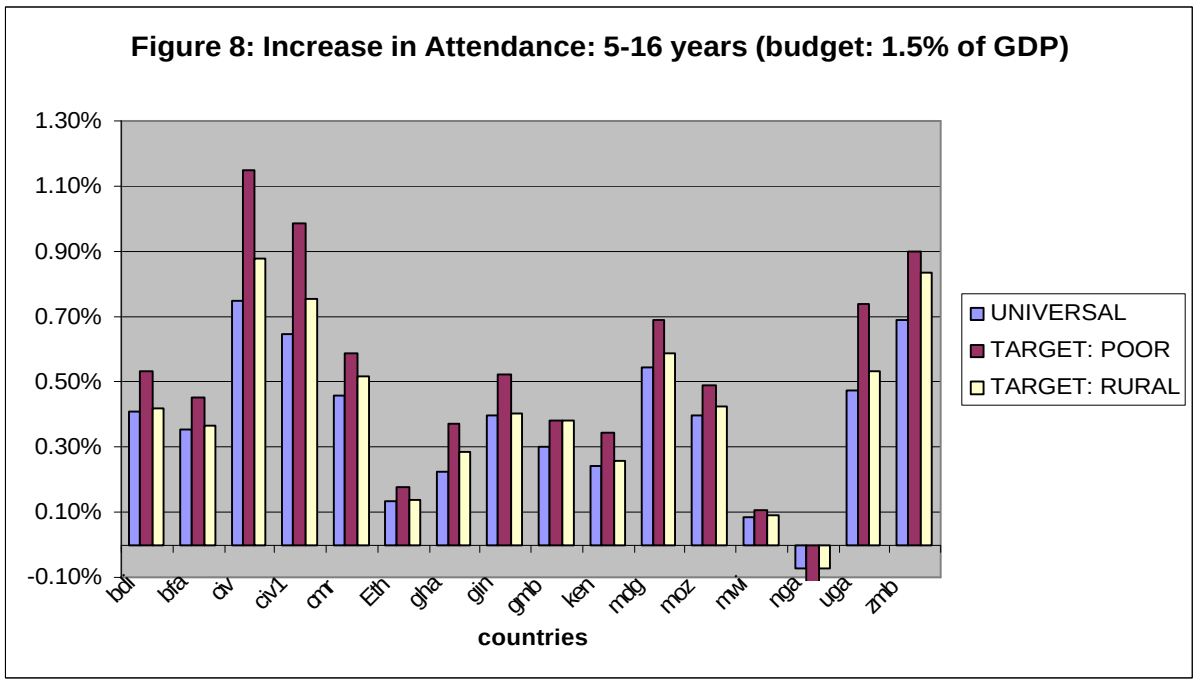
Note: Côte d' Ivoire1 corresponds to the estimation using the variable "ever attended to school" for Côte d'Ivoire.
Source: Authors' calculation.

It is worth noting that there is hardly any difference between the estimates with the same value of the transfer and the estimates where the value of the transfer increases by 5% with age.[25] As for targeting, the results in Table 9-3 and in Figure 7 show that even if the transfer is given only to the poor, the gain in terms of attendance is not very high, varying from 0.04% for Malawi to 0.42% for Côte d'Ivoire. Focusing only on the rural area is not as good as targeting only the poor, since the gain is not as high in comparison to when we focus only on the poor.



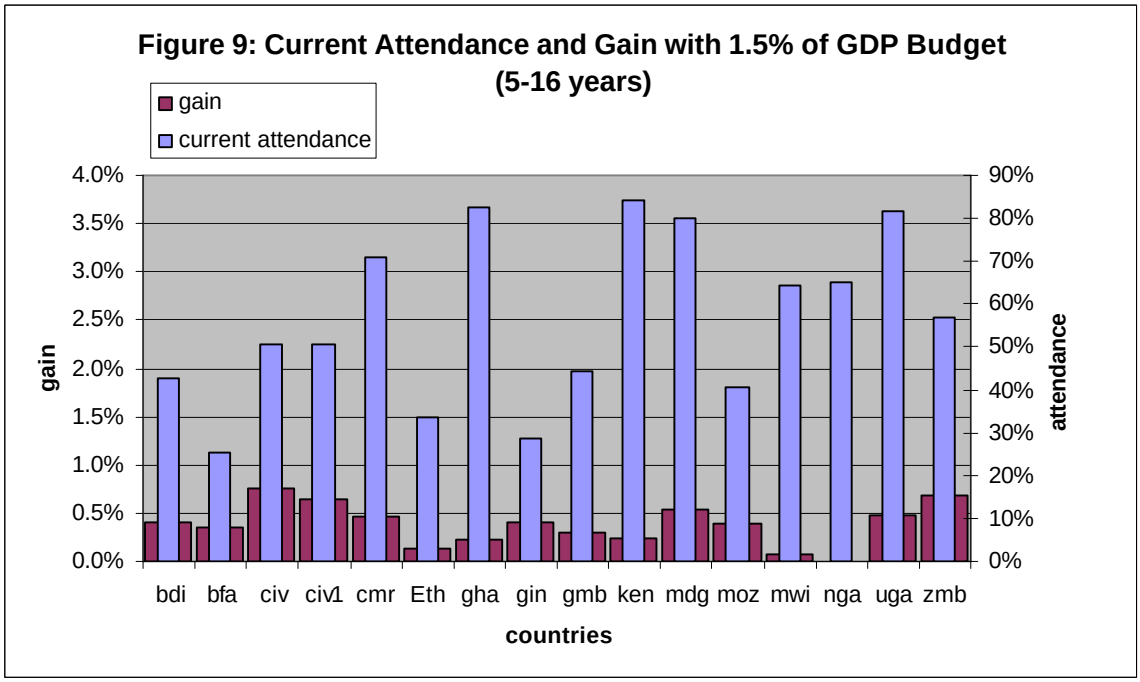
Source: Authors' calculation.

These figures triple when we increase the budget of the transfer to 1.5% of the GDP, but the results shown in Figure 8 are still very modest, raging from 0.08% (0.11%) for Malawi to 0.75 (1.15%) for Côte d'Ivoire when the transfer is universal (targeted on the poor).



Source: Authors' calculation.

Another interesting result is the lack of correlation between the level of school attendance and the impact of the transfers. Ethiopia, for example, has a very low average attendance and the simulation shows that it is the country with the lowest impact. Uganda and Madagascar have relatively high rates of attendance in the sample and are among the countries with relatively sizable impact on the simulations. For instance, the impact of the transfers in these two countries is larger than the impact of transfers in Burundi and Burkina Faso, which have very low average attendance.



Source: Authors' calculation.

Figures 10 to 12 show the simulation separately for each age-group, but holding the budget constant (0.5% of the GDP). The results show very modest increases for attendance in each specific age-group. The age-group that presents the highest response to a cash transfer programme for most countries is the 14 –16 year-old group .[26] This result is intuitive in the sense that as children become adolescents the opportunity cost of sending them to school is much higher. Therefore, families with very few resources can barely afford to send them to school. Moreover, as they get older and increase their school attainment, it becomes harder to find adequate provision of schooling. In this regard, the supply of schools with higher grades may play an important role.

Figure 10 - Increase in Attendance by age group: Universal Cash Transfer

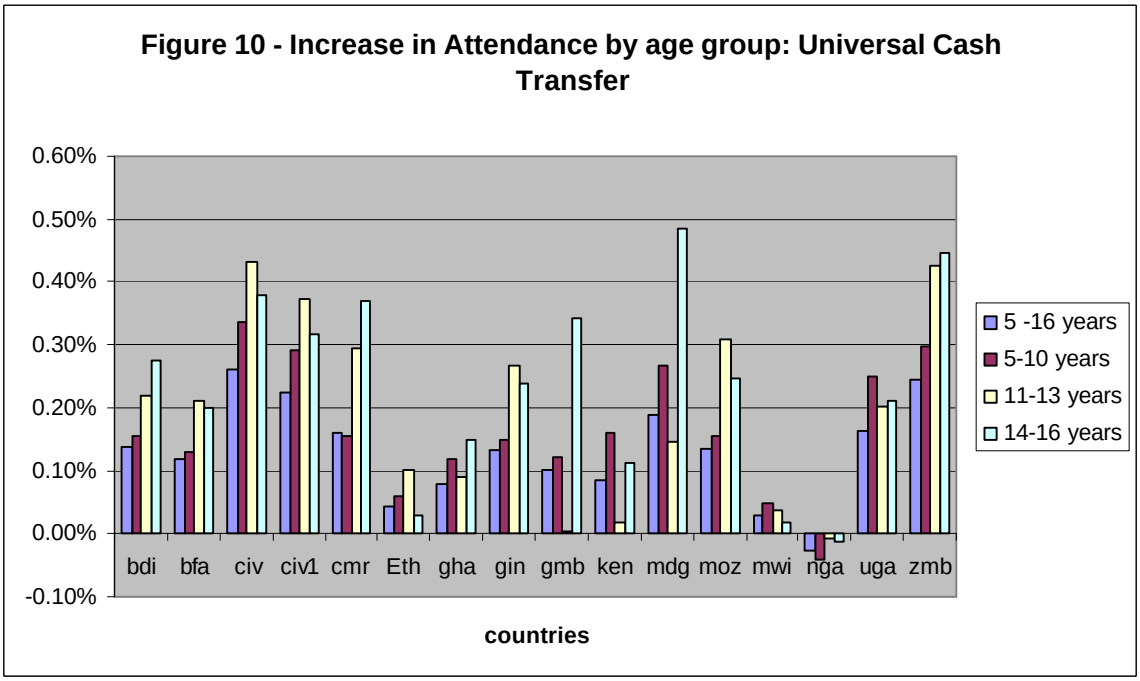
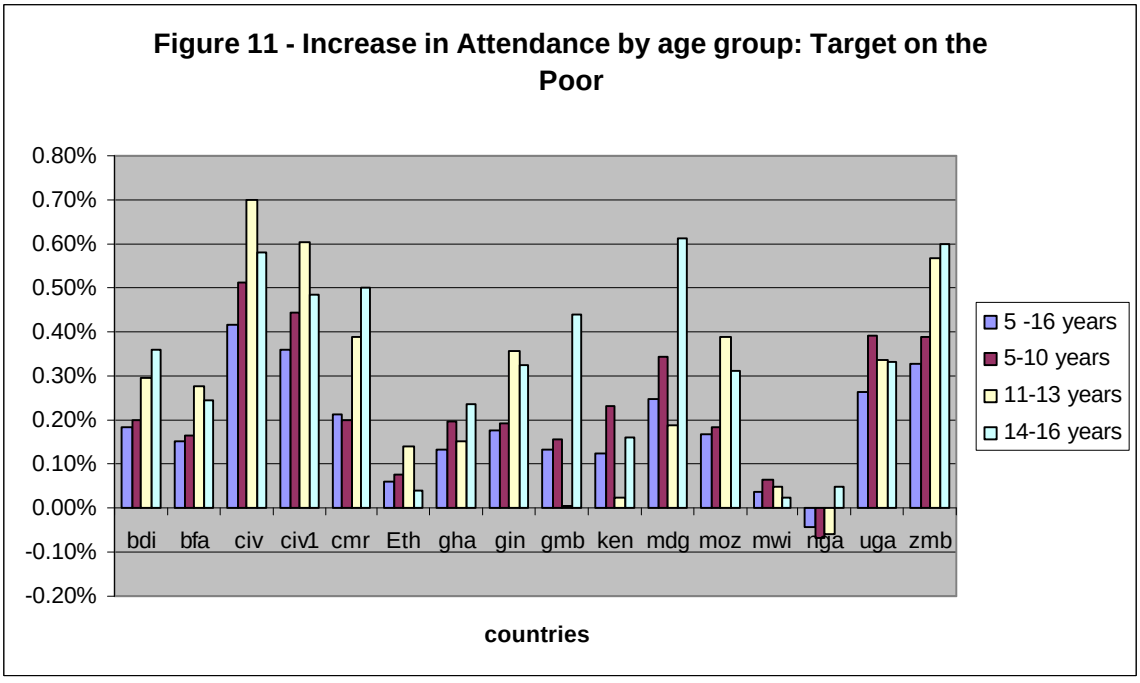
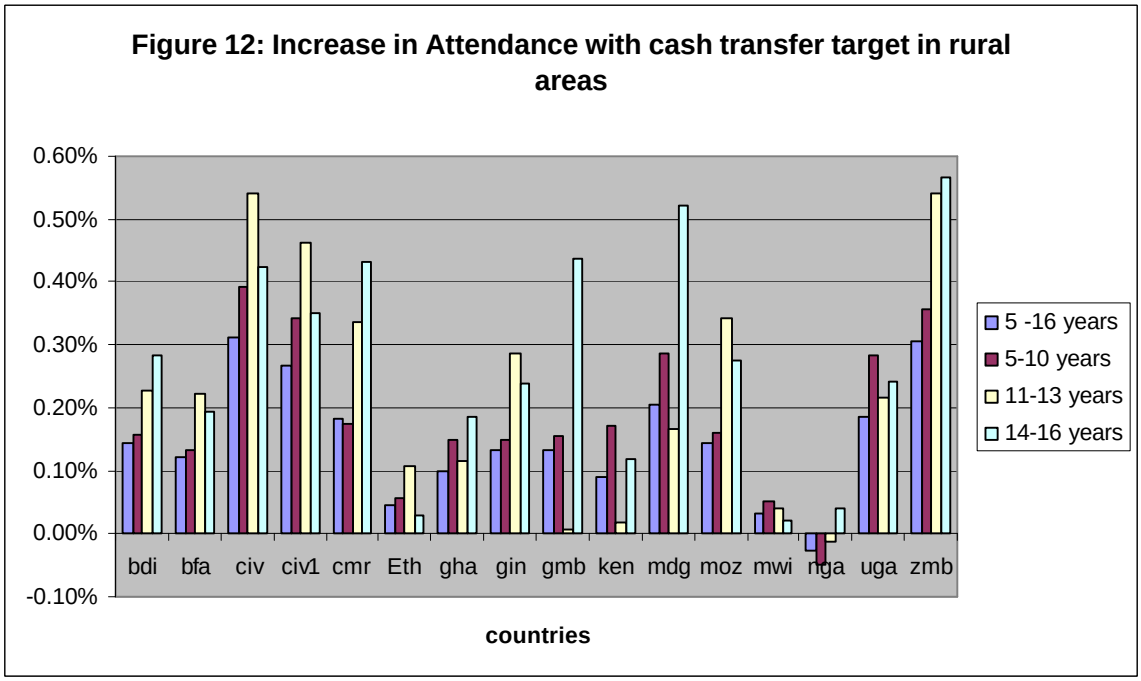


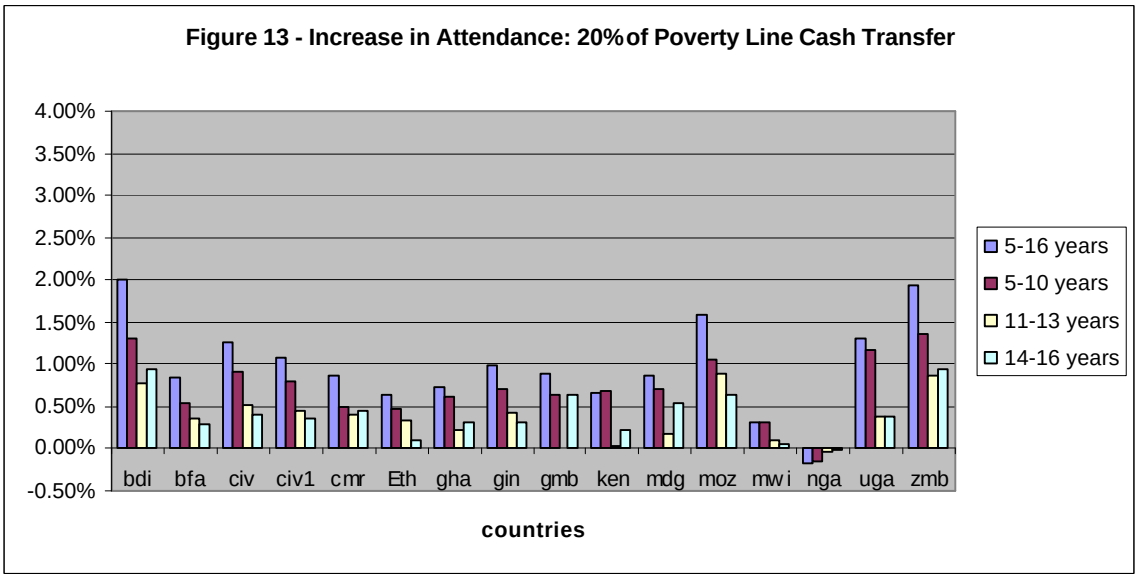
Figure 11 - Increase in Attendance by age group: Target on the Poor



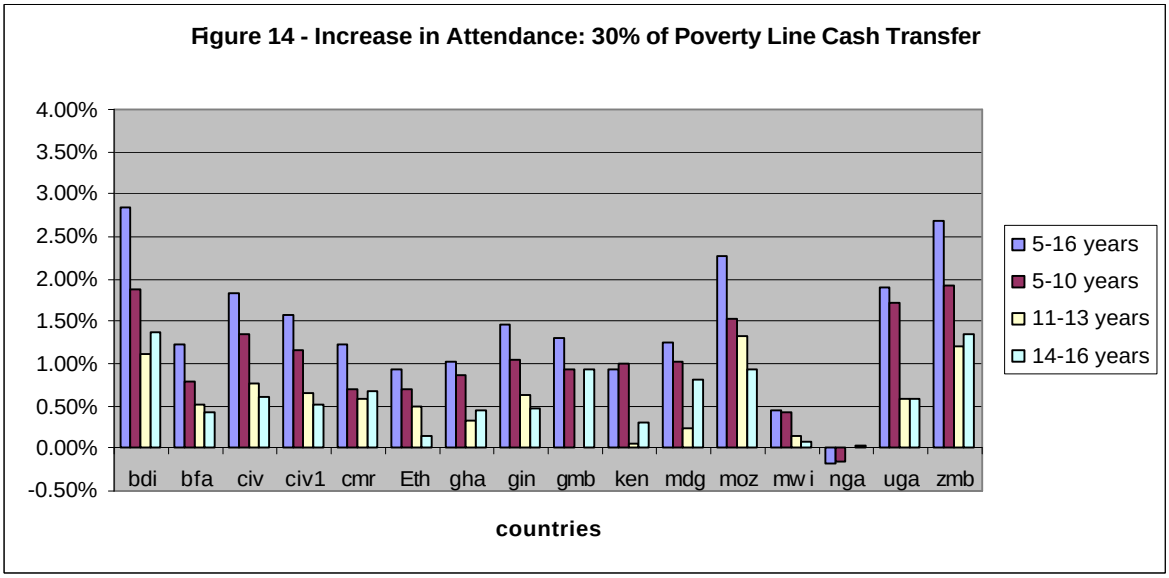


Source: Authors' calculation.

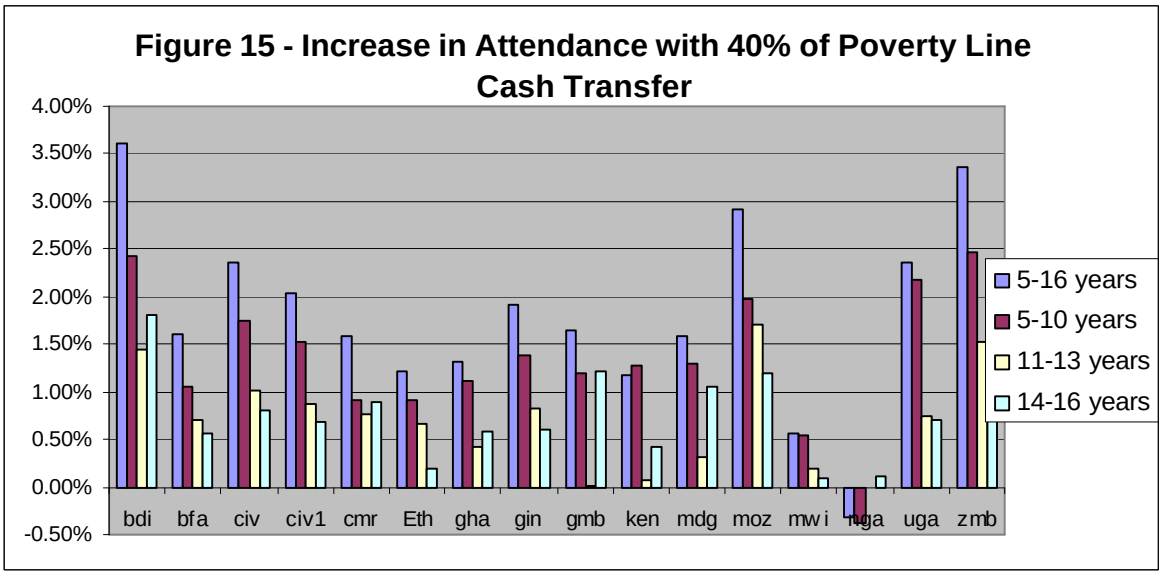
Given the small impact of transfer based on a budget of 0.5% of GDP we simulated the impact of transferring 20%, 30% and 30% of the average poverty line for each country in the same way as we did in the poverty assessment. Of course, the higher the value of the transfer is, the higher the impact on attendance and also the larger the budget necessary to finance this programme. Figures 13 to 15 show the results for all children in school age and for the three age-groups separately. The impact ranges from 0.32% (0.57%) for Malawi to 2% (3.62%) for Burundi when we use the value of 20% (40%) of the poverty line to calculate the value of the transfer.



Source: Authors' calculation.

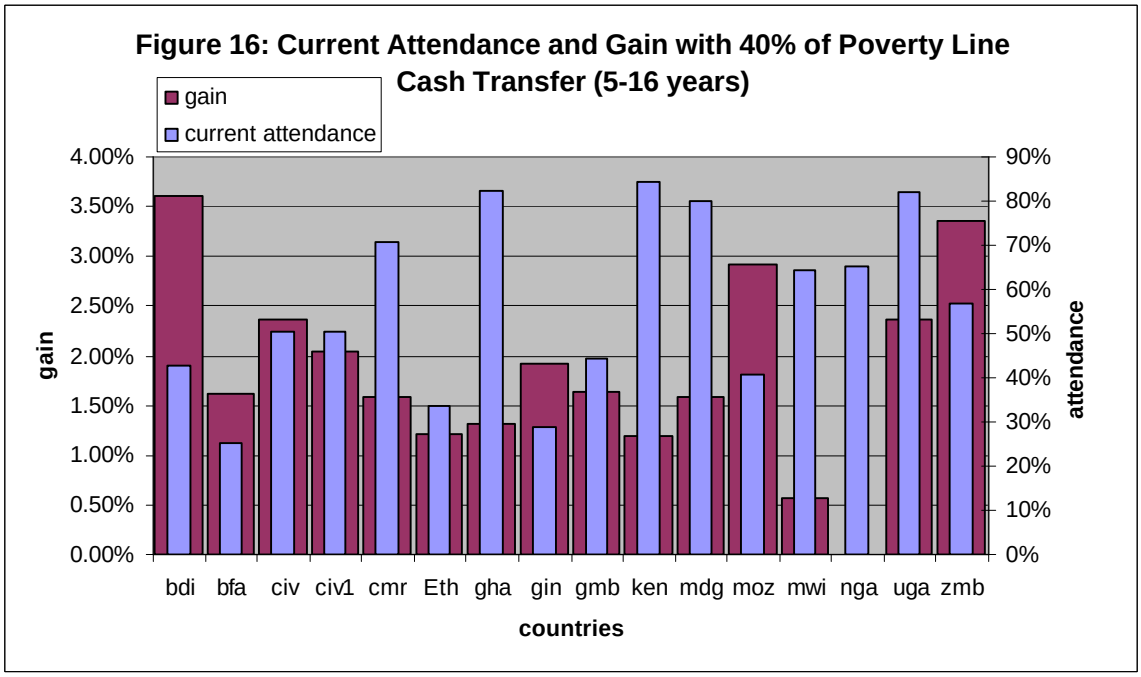


Source: Authors' calculation.



Source: Authors' calculation.

However, again there is no relationship between the current attendance rate and the impact of cash transfers on school attendance, as can be seen in Figure 16, which means that the response of school attendance to changes in per capita expenditure of the family does not depend on the level of current attendance. Countries' idiosyncratic characteristics, and probably the pattern of supply of schools and education goods, play a major role here. Unlike the case of a fixed budget of 0.5% of GDP, when we look at the different age-groups the best results are achieved for 5-10 year-olds regardless of the value of the transfer in terms of the average poverty line. This is so because in this case, the value of the transfer does not depend on the size of the population of the group.



Source: Authors' calculation.

APPENDIX

A – POVERTY LINES

The study used the national poverty lines, which were obtained from various poverty assessment reports, which are listed below. These poverty lines are very crude and do not take account of different needs of household members by age and sex. They also do not take account of economies of scale, which operate in large households. We modified these poverty lines using the following common methodology.

1. In many countries, the poverty lines were not available for the survey years. We used the consumer price index to adjust these lines so that they correspond to the survey years.
2. The national poverty lines obtained from poverty assessment reports were single poverty lines and thus made no allowance for different needs of household members, which do vary with age and sex. We made the decision that different needs of individuals can adequately be approximated by the calorie requirements, which are estimated for individuals of different age and sex. We obtained the calorie requirements that are widely used in Africa. These requirements are given in Table A1.The household surveys in each country had information on the age and sex of each household member. We allocated the calorie requirements as given in Table A1 to each household member. Adding up the calorie requirements of each member and dividing by household size, we obtained the per calorie requirement of each household. We could then calculate the per capita calorie requirement of the whole population by the weighted average of the per capita calorie requirements, with weights proportional to population of individuals represented by the sample households. These average calorie requirements, presented in table A2, vary across countries because of differences in countries' population composition.
3. Average poverty lines in the survey years as obtained in (1) were allocated to each household in proportion to their per capita calorie requirements so that the average poverty line for the country as a whole is the same. The average poverty lines are presented in Col 2 of Table A2.
4. Finally we made an adjustment for economies of scale. The larger households
5. will have lower per capita poverty line than the smaller households. The economies of scale parameter was assumed to be equal to 0.7, which means that larger households will incur about 30 percent less expenditure than the smaller households but still will enjoy the same utility level. Thus, the per capita poverty line for the ith household will be given by

   $$(pline)_i = k(apline)n_i^{0.7} / n_i$$

   where k is the constant of proportionality and (alpine) is the average poverty line.. The parameter k is determined so that the mean of $(pline)_i$ .across all households is equal to the average poverty line (alpine). This ensures that the adjustment for economies of scale does not change the mean of the poverty line.

TABLE A.1
Calorie requirements by age and sex

	Age	Requirement
Children	0 to 1	800
	1 to 3	1300
	4 to 6	1800
	7 to 10	2000
Male	11 to 14	2500
	15 to 18	3000
	19 to 50	2900
	51+	2300
Female	11 to 50	2200
	51+	1900

	Calorie requirement	Poverty line
Burundi	2150	63760
Burkina Faso	2140	47736
Burkina Faso	2152	53639
Côte d'Ivoire	2266	166758
Cameroon	2164	139186
Ethiopia	2164	862
Ghana	2192	680270
Guinea	2140	291386
Gambia	2191	2607
Kenya	2147	10521
Kenya	2198	13277
Madagascar	2171	674128
Madagascar	2178	766139
Mozambique	2165	1859424
Malawi	2188	3829
Nigeria	2253	11285
Uganda	2139	223118
Zambia	2193	428305

SOURCES OF POVERTY LINES

1. "Burkina Faso: Poverty Reduction Strategy Paper", Ministry of Economics and Finance, Burkina Faso, 25 May 2000
2. "Burundi Poverty Note: Prospects for Social Protection in a Crisis Economy", World Bank Document, February 1999
3. "Cameroon: Poverty Reduction Strategy Paper", Republic of Cameroon, April 2003
4. "Côte D'Ivoire: Interim Poverty Reduction Strategy Paper", Republic of Côte D'Ivoire, January 2002
5. "Ethiopia: Sustainable Development and Poverty Reduction Program", Federal Democratic Republic of Ethiopia and Ministry of Finance and Economic Development, July 2002
6. "1998 Household Survey Poverty Report", Government of the Gambia, June 2000
7. "Poverty Trends in Ghana in the 1990s", Ghana Statistical Service, October 2000
8. "Guinea: A Socioeconomic Assessment of Well-Being and Poverty", Document of the World Bank, March 31, 1997
9. "Kenya: Interim Poverty Reduction Strategy Paper 2000-2003", Government of Kenya, June 2000
10. "Madagascar: Interim Poverty Reduction Strategy Paper", Republic of Madagascar, November 2000
11. "Malawi Poverty Reduction Strategy Paper", Government of Malawi, April 2002
12. "Poverty Reduction Strategy Paper", Islamic Republic of Mauritania, December 2000
13. "Action Plan for the Reduction of Absolute Poverty (2001-2005) PARPA", Republic of Mozambique, April 2001
14. "Poverty Profile for Nigeria: 1985-1996", Government of Nigeria, December 1998
15. "Uganda: Poverty Status Report", Ministry of Finance, Planning and Economic Development; March 2001
16. "Zambia Poverty Reduction Strategy Paper 2002-2004", Ministry of Finance and National Planning, Lusaka, March 2002

B – POVERTY SIMULATION RESULTS

TABLE B.1
Percentage change in poverty when targeting 0.5 % GDP to all children

Country	*Head count ratio*				*Poverty gap ratio*				*Severity of poverty*			
	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children
Burundi 98	-0.37	-0.50	-0.41	-0.50	-1.27	-1.22	-1.19	-1.24	-1.94	-1.87	-1.87	-1.92
Burkina Faso 98	-1.39	-1.53	-1.35	-1.44	-3.35	-3.21	-3.14	-3.28	-4.75	-4.59	-4.48	-4.70
Côte d'Ivoire 98	-2.65	-2.96	-2.02	-2.66	-5.68	-4.94	-4.73	-5.34	-7.71	-6.36	-6.38	-7.20
Cameroon 96	-1.72	-1.64	-1.32	-0.97	-3.69	-3.78	-3.33	-3.65	-5.46	-5.59	-4.97	-5.43
Ethiopia 00	-1.20	-1.30	-1.44	-1.37	-2.11	-2.07	-1.94	-2.07	-2.94	-2.87	-2.72	-2.90
Ghana 98	-1.11	-0.90	-0.93	-1.26	-2.36	-2.16	-2.03	-2.25	-3.51	-3.14	-2.86	-3.31
Guinea 94	-1.18	-1.20	-1.00	-0.70	-3.34	-3.22	-2.99	-3.26	-5.03	-4.80	-4.37	-4.91
Gambia 98	-1.13	-1.29	-0.96	-0.96	-2.00	-2.02	-1.94	-2.00	-3.16	-3.03	-2.97	-3.11
Kenya 97	-1.56	-1.01	-1.10	-1.41	-2.90	-2.86	-2.68	-2.85	-4.44	-4.53	-4.08	-4.41
Madagascar 01	-1.66	-1.20	-1.28	-1.51	-3.34	-3.30	-2.94	-3.25	-5.48	-5.40	-4.78	-5.37
Mozambique 96	-0.29	-0.45	-0.51	-0.36	-1.46	-1.36	-1.30	-1.41	-2.38	-2.23	-2.15	-2.31
Malawi 97	-0.31	-0.37	-0.56	-0.47	-1.42	-1.35	-1.30	-1.38	-2.28	-2.14	-2.02	-2.20
Nigeria 96	-0.96	-0.73	-0.84	-0.99	-2.89	-2.89	-2.81	-2.88	-4.52	-4.87	-4.76	-4.69
Uganda 99	-1.07	-1.24	-1.01	-1.08	-2.97	-2.76	-2.56	-2.85	-4.36	-4.03	-3.75	-4.19
Zambia 98	-0.41	-0.71	-0.60	-0.60	-1.56	-1.52	-1.44	-1.52	-2.51	-2.41	-2.30	-2.45

TABLE B.2
Percentage change in poverty when targeting 0.5 % GDP to only poor children

Country	*Head count ratio*				*Poverty gap ratio*				*Severity of poverty*			
	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children
Burundi 98	-0.63	-0.71	-0.48	-0.62	-1.95	-1.88	-1.84	-1.91	-2.97	-2.86	-2.88	-2.94
Burkina Faso 98	-2.73	-2.94	-2.13	-2.36	-5.94	-5.72	-5.67	-5.87	-8.34	-8.09	-7.95	-8.32
Côte d'Ivoire 98	-7.04	-8.56	-7.89	-8.31	-13.45	-12.44	-12.27	-13.30	-17.72	-15.64	-15.95	-17.51
Cameroon 96	-2.81	-2.58	-2.27	-1.66	-5.76	-5.72	-5.44	-5.73	-8.43	-8.36	-7.99	-8.44
Ethiopia 00	-2.80	-2.52	-2.79	-2.58	-4.86	-4.63	-4.45	-4.76	-6.72	-6.32	-6.13	-6.60
Ghana 98	-2.85	-2.09	-2.58	-2.58	-4.85	-4.65	-4.52	-4.77	-7.15	-6.63	-6.25	-6.96
Guinea 94	-3.22	-3.14	-2.49	-2.70	-7.99	-7.74	-7.57	-7.95	-11.82	-11.16	-10.61	-11.71
Gambia 98	-1.50	-1.42	-1.28	-1.41	-3.01	-2.97	-2.94	-3.00	-4.75	-4.45	-4.47	-4.66
Kenya 97	-2.17	-1.73	-2.19	-2.17	-5.20	-5.03	-4.92	-5.12	-7.86	-7.84	-7.36	-7.86
Madagascar 01	-2.41	-1.97	-1.49	-1.92	-4.96	-4.83	-4.62	-4.89	-8.10	-7.81	-7.38	-8.02
Mozambique 96	-0.37	-0.66	-0.66	-0.47	-1.99	-1.91	-1.85	-1.95	-3.22	-3.12	-3.04	-3.18
Malawi 97	-0.53	-0.47	-0.78	-0.51	-2.13	-2.03	-1.98	-2.08	-3.40	-3.19	-3.07	-3.30
Nigeria 96	-1.36	-1.34	-1.15	-1.36	-4.25	-4.11	-3.91	-4.16	-6.59	-6.85	-6.56	-6.74
Uganda 99	-2.41	-2.46	-2.54	-2.28	-5.76	-5.50	-5.38	-5.67	-8.34	-7.90	-7.75	-8.26
Zambia 98	-0.67	-0.92	-0.82	-0.82	-2.27	-2.19	-2.14	-2.23	-3.63	-3.47	-3.39	-3.57

TABLE B.3
Percentage change in poverty when targeting of 0.5 % GDP to rural areas

Country	***Head count ratio***				***Poverty gap ratio***				***Severity of poverty***			
	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children
Burundi 98	-0.36	-0.49	-0.40	-0.49	-1.30	-1.26	-1.23	-1.28	-2.00	-1.93	-1.95	-1.98
Burkina Faso 98	-1.43	-1.71	-1.43	-1.51	-3.65	-3.55	-3.57	-3.62	-5.20	-5.12	-5.15	-5.22
Côte d'Ivoire 98	-3.01	-3.87	-3.35	-3.22	-7.46	-6.85	-6.71	-7.29	-10.71	-9.38	-9.60	-10.44
Cameroon 96	-1.43	-1.63	-1.33	-0.95	-4.27	-4.44	-4.08	-4.29	-6.48	-6.64	-6.12	-6.53
Ethiopia 00	-1.21	-1.23	-1.47	-1.42	-2.19	-2.17	-2.05	-2.16	-3.05	-2.99	-2.87	-3.02
Ghana 98	-1.41	-0.85	-1.24	-1.33	-2.94	-2.79	-2.67	-2.87	-4.57	-4.22	-3.95	-4.41
Guinea 94	-1.38	-1.21	-1.17	-1.22	-4.25	-4.34	-4.16	-4.28	-6.49	-6.53	-6.12	-6.52
Gambia 98	-0.48	-0.35	-0.69	-0.50	-2.54	-2.51	-2.53	-2.54	-4.43	-4.27	-4.51	-4.43
Kenya 97	-1.58	-1.21	-1.28	-1.50	-3.16	-3.08	-2.94	-3.10	-4.87	-4.91	-4.52	-4.84
Madagascar 01	-1.86	-1.27	-1.05	-1.49	-3.64	-3.65	-3.36	-3.60	-6.12	-6.05	-5.54	-6.07
Mozambique 96	-0.29	-0.42	-0.39	-0.30	-1.59	-1.54	-1.49	-1.56	-2.60	-2.56	-2.50	-2.58
Malawi 97	-0.38	-0.39	-0.58	-0.47	-1.54	-1.48	-1.44	-1.51	-2.49	-2.36	-2.26	-2.42
Nigeria 96	-1.14	-1.08	-1.11	-1.09	-2.90	-2.89	-2.76	-2.88	-4.39	-4.54	-4.38	-4.49
Uganda 99	-1.22	-1.32	-1.01	-1.12	-3.28	-3.03	-2.85	-3.14	-4.83	-4.45	-4.21	-4.66
Zambia 98	-0.46	-0.55	-0.39	-0.51	-1.82	-1.76	-1.68	-1.77	-3.17	-3.02	-2.93	-3.10

TABLE B.4
Percentage change in poverty with progressive targeting of 0.5 % GDP

Country	***All children***			***Poor children***			***Rural children***		
	Headcount ratio	Poverty gap ratio	Severity of poverty	Headcount ratio	Poverty gap ratio	Severity of poverty	Headcount ratio	Poverty gap ratio	Severity of poverty
Burundi 98	-0.50	-1.24	-1.91	-0.66	-1.90	-2.94	-0.49	-1.28	-1.98
Burkina Faso 98	-1.41	-3.27	-4.69	-2.38	-5.86	-8.31	-1.47	-3.62	-5.23
Côte d'Ivoire 98	-2.59	-5.28	-7.11	-8.58	-13.24	-17.41	-3.05	-7.25	-10.37
Cameroon 96	-1.08	-3.64	-5.43	-1.67	-5.72	-8.44	-0.95	-4.30	-6.53
Ethiopia 00	-1.48	-2.06	-2.89	-2.63	-4.73	-6.57	-1.41	-2.16	-3.02
Ghana 98	-1.26	-2.24	-3.28	-2.57	-4.76	-6.92	-1.21	-2.85	-4.39
Guinea 94	-0.70	-3.25	-4.89	-2.77	-7.94	-11.69	-1.05	-4.27	-6.52
Gambia 98	-0.85	-1.99	-3.10	-1.41	-2.99	-4.64	-0.45	-2.53	-4.43
Kenya 97	-1.38	-2.84	-4.40	-2.29	-5.11	-7.84	-1.40	-3.09	-4.83
Madagascar 01	-1.55	-3.23	-5.34	-1.95	-4.87	-8.00	-1.36	-3.58	-6.04
Mozambique 96	-0.39	-1.40	-2.30	-0.45	-1.94	-3.18	-0.28	-1.56	-2.58
Malawi 97	-0.47	-1.37	-2.19	-0.51	-2.07	-3.28	-0.47	-1.50	-2.41
Nigeria 96	-0.91	-2.88	-4.71	-1.34	-4.14	-6.74	-1.11	-2.88	-4.50
Uganda 99	-1.07	-2.83	-4.17	-2.16	-5.65	-8.24	-1.20	-3.12	-4.63
Zambia 98	-0.60	-1.52	-2.44	-0.85	-2.22	-3.56	-0.48	-1.77	-3.09

TABLE B.5

Percentage change in poverty when targeting 20% of average poverty line

Country	*Head count ratio*				*Poverty gap ratio*				*Severity of poverty*			
	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children
Burundi 98	-4.14	-1.00	-1.12	-7.35	-11.25	-4.48	-4.19	-19.56	-16.46	-6.66	-6.42	-27.79
Burkina Faso 98	-6.76	-2.79	-1.82	-12.09	-13.97	-5.41	-4.50	-23.02	-19.04	-7.65	-6.37	-30.78
Côte d'Ivoire 98	-8.79	-3.86	-2.31	-15.69	-15.12	-5.92	-5.18	-24.67	-19.81	-7.59	-6.96	-31.51
Cameroon 96	-6.52	-2.43	-1.49	-12.23	-11.80	-5.27	-4.15	-20.30	-16.86	-7.72	-6.15	-28.64
Ethiopia 00	-9.58	-3.54	-3.79	-17.43	-16.42	-6.90	-6.47	-28.24	-21.65	-9.27	-8.80	-36.32
Ghana 98	-5.75	-2.52	-2.48	-10.45	-12.49	-5.34	-4.20	-21.37	-17.79	-7.58	-5.82	-29.19
Guinea 94	-6.56	-1.77	-1.34	-11.79	-15.36	-5.16	-3.84	-23.55	-22.14	-7.57	-5.57	-32.91
Gambia 98	-4.58	-2.32	-1.45	-7.47	-11.03	-4.03	-3.64	-18.16	-16.69	-6.00	-5.52	-26.71
Kenya 97	-5.45	-2.27	-2.35	-10.06	-12.86	-5.97	-5.24	-23.33	-18.67	-9.24	-7.82	-32.99
Madagascar 01	-3.43	-1.45	-1.34	-4.81	-9.25	-3.85	-3.37	-16.25	-14.73	-6.28	-5.45	-25.18
Mozambique 96	-3.13	-1.16	-1.15	-5.47	-10.39	-4.08	-3.41	-17.64	-16.05	-6.54	-5.52	-26.72
Malawi 97	-3.53	-1.40	-1.42	-6.34	-9.31	-4.05	-3.74	-16.77	-14.23	-6.27	-5.71	-24.88
Nigeria 96	-4.29	-1.22	-1.10	-6.20	-9.68	-3.86	-3.61	-16.87	-14.56	-6.44	-6.06	-25.71
Uganda 99	-6.50	-2.51	-2.05	-11.35	-13.97	-5.58	-4.47	-23.17	-19.50	-8.00	-6.48	-31.65
Zambia 98	-2.80	-1.32	-1.19	-5.56	-7.81	-3.28	-3.20	-14.01	-12.11	-5.15	-5.02	-21.31

TABLE B.6

Percentage change in poverty when targeting 30% of average poverty line

Country	*Head count ratio*				*Poverty gap ratio*				*Severity of poverty*			
	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children
Burundi 98	-6.66	-2.22	-1.53	-14.09	-16.57	-6.66	-6.24	-28.47	-23.62	-9.75	-9.40	-38.92
Burkina Faso 98	-11.08	-4.09	-2.65	-18.58	-20.34	-8.00	-6.69	-33.07	-27.13	-11.17	-9.31	-42.73
Côte d'Ivoire 98	-14.45	-5.89	-4.19	-22.95	-21.77	-8.63	-7.62	-34.89	-27.92	-10.99	-10.11	-43.05
Cameroon 96	-10.96	-3.28	-2.72	-15.54	-17.04	-7.78	-6.17	-29.23	-24.14	-11.25	-9.01	-39.92
Ethiopia 00	-14.77	-5.16	-5.62	-24.72	-23.59	-10.16	-9.47	-39.88	-30.28	-13.31	-12.64	-49.10
Ghana 98	-8.69	-3.82	-3.25	-16.04	-18.28	-7.88	-6.20	-30.89	-25.34	-11.01	-8.48	-40.52
Guinea 94	-10.29	-3.14	-1.71	-17.42	-22.43	-7.64	-5.70	-34.02	-31.40	-11.03	-8.13	-45.46
Gambia 98	-7.14	-2.89	-3.05	-11.10	-16.28	-5.95	-5.38	-26.64	-24.08	-8.82	-8.12	-37.74
Kenya 97	-8.82	-3.41	-3.38	-15.89	-18.82	-8.85	-7.76	-33.74	-26.50	-13.44	-11.36	-45.36
Madagascar 01	-4.83	-2.08	-1.51	-8.23	-13.71	-5.72	-5.02	-23.94	-21.20	-9.18	-7.99	-35.54
Mozambique 96	-4.88	-1.78	-1.56	-8.63	-15.36	-6.07	-5.08	-25.94	-23.03	-9.56	-8.08	-37.60
Malawi 97	-5.30	-2.27	-2.23	-10.32	-13.73	-6.02	-5.55	-24.56	-20.43	-9.15	-8.33	-34.98
Nigeria 96	-5.93	-1.64	-1.59	-10.62	-14.22	-5.74	-5.37	-24.73	-20.90	-9.45	-8.89	-36.27
Uganda 99	-9.61	-3.90	-3.37	-18.16	-20.43	-8.24	-6.60	-33.27	-27.69	-11.63	-9.43	-43.75
Zambia 98	-4.54	-1.95	-1.76	-8.12	-11.56	-4.87	-4.75	-20.60	-17.56	-7.57	-7.38	-30.39

TABLE B.7

Percentage change in poverty when targeting 40% of average poverty line

Country	*Head count ratio*				*Poverty gap ratio*				*Severity of poverty*			
	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children	5-10 years	11-13 years	14-16 years	All children
Burundi 98	-9.16	-3.65	-2.71	-18.00	-21.65	-8.79	-8.26	-36.65	-30.12	-12.67	-12.21	-48.40
Burkina Faso 98	-14.44	-5.17	-4.27	-25.18	-26.33	-10.52	-8.81	-42.14	-34.38	-14.49	-12.10	-52.69
Côte d'Ivoire 98	-18.50	-8.47	-6.11	-29.74	-27.90	-11.20	-9.93	-43.98	-35.00	-14.14	-13.05	-52.22
Cameroon 96	-12.57	-3.78	-3.17	-21.31	-22.05	-10.27	-8.14	-37.50	-30.73	-14.59	-11.72	-49.40
Ethiopia 00	-19.80	-7.55	-7.42	-33.92	-30.05	-13.25	-12.29	-49.85	-37.65	-16.99	-16.13	-58.94
Ghana 98	-11.86	-5.50	-3.94	-23.05	-23.78	-10.30	-8.17	-39.44	-32.08	-14.22	-10.96	-49.93
Guinea 94	-13.65	-4.14	-2.49	-22.94	-29.19	-10.05	-7.53	-43.57	-39.54	-14.28	-10.56	-55.71
Gambia 98	-9.17	-3.69	-3.48	-14.27	-21.37	-7.85	-7.07	-34.76	-30.86	-11.52	-10.62	-47.33
Kenya 97	-11.50	-4.54	-4.50	-22.68	-24.48	-11.67	-10.21	-43.12	-33.41	-17.37	-14.66	-55.31
Madagascar 01	-6.65	-2.61	-2.34	-11.85	-18.02	-7.56	-6.63	-31.25	-27.10	-11.94	-10.41	-44.51
Mozambique 96	-6.99	-2.31	-1.91	-12.25	-20.17	-8.04	-6.73	-33.82	-29.35	-12.43	-10.50	-46.95
Malawi 97	-7.14	-3.13	-2.98	-14.42	-18.01	-7.94	-7.32	-31.85	-26.06	-11.87	-10.80	-43.66
Nigeria 96	-8.22	-2.29	-2.13	-13.89	-18.61	-7.60	-7.12	-32.00	-26.66	-12.31	-11.59	-45.42
Uganda 99	-14.08	-5.55	-4.81	-24.75	-26.49	-10.81	-8.64	-42.33	-34.91	-15.03	-12.21	-53.71
Zambia 98	-5.74	-2.71	-2.56	-11.20	-15.22	-6.45	-6.29	-26.91	-22.62	-9.90	-9.65	-38.47

C – MARGINAL EFFECTS OF THE PROBIT MODEL

TABLE C.1

Probit model for School Attendance: 5 - 16 years

Table C1 - Probit model for School Attendance: 5 - 16 years

	Burundi			Burkina Faso			Cameroon			Côte d'Ivoire (1)			Ethiopia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.081			-0.095			-0.045			-0.128			-0.082		
	[4.16]**			[13.38]**			[1.91]			[10.37]**			[8.47]**		
Urban	0.232	0.178	0.287	0.345	0.364	0.319	-0.023	-0.026	-0.024	0.114	0.119	0.109	0.439	0.409	0.462
	[9.89]**	[5.63]**	[10.20]**	[25.88]**	[20.28]**	[20.38]**	[0.57]	[0.54]	[0.50]	[6.78]**	[5.63]**	[5.00]**	[33.67]**	[23.01]**	[27.63]**
head illiterate	-0.114	-0.129	-0.096	-0.195	-0.212	-0.172	-0.378	-0.317	-0.445				-0.1	-0.086	-0.115
	[4.69]**	[4.39]**	[3.09]**	[13.45]**	[11.18]**	[10.20]**	[8.83]**	[6.37]**	[8.56]**				[7.51]**	[4.76]**	[6.48]**
head never attended										-0.275	-0.266	-0.28			
										[16.12]**	[12.47]**	[12.57]**			
head age	0.017	0.023	0.011	0.002	0.002	0.002	-0.002	-0.002	-0.003	0.002	0.005	0.002	0.001	0.002	0
	[3.04]**	[2.63]**	[1.60]	[0.77]	[0.62]	[0.71]	[0.22]	[0.20]	[0.29]	[0.54]	[1.07]	[0.35]	[0.42]	[0.62]	[0.05]
head age^2	-0.015	-0.02	-0.009	-0.001	-0.001	-0.002	0.009	0.008	0.011	0.001	-0.002	0.001	0	-0.001	0.002
	[2.72]**	[2.20]*	[1.50]	[0.57]	[0.26]	[0.79]	[1.02]	[0.82]	[0.95]	[0.13]	[0.50]	[0.17]	[0.17]	[0.29]	[0.54]
head sex	0.117	0.131	0.101	0.079	0.092	0.069	0.161	0.122	0.191	0.111	0.132	0.096	0.081	0.077	0.081
	[3.54]**	[3.21]**	[2.39]*	[3.91]**	[2.92]**	[3.16]**	[4.38]**	[2.65]**	[3.99]**	[4.56]**	[4.26]**	[3.01]**	[5.26]**	[3.70]**	[3.91]**
share children 0-5	-0.059	-0.107	-0.022	0.05	0.168	-0.068	-0.113	-0.048	-0.2	-0.055	-0.048	-0.046	-0.371	-0.436	-0.295
	[0.40]	[0.58]	[0.12]	[1.09]	[2.65]**	[1.20]	[0.67]	[0.25]	[0.85]	[0.75]	[0.51]	[0.46]	[6.47]**	[5.56]**	[3.78]**
share children 6-16	0.099	0.076	0.113	0.126	0.172	0.073	0.159	0.242	0.089	0.332	0.226	0.431	-0.148	-0.193	-0.088
	[0.95]	[0.54]	[0.81]	[3.01]**	[2.98]**	[1.51]	[1.36]	[1.81]	[0.54]	[5.48]**	[3.02]**	[5.11]**	[3.06]**	[2.89]**	[1.36]
share people 17-25	0.218	0.235	0.187	0.03	0.062	-0.006	0.008	0.248	-0.277	0.105	0.084	0.122	-0.107	-0.136	-0.059
	[1.87]	[1.52]	[1.19]	[0.70]	[1.05]	[0.13]	[0.06]	[1.61]	[1.50]	[1.54]	[0.94]	[1.32]	[2.01]*	[1.86]	[0.84]
household size	0.016	0.02	0.013	0.001	0	0.001	0.011	0.009	0.013	0.003	0.003	0.002	0.025	0.036	0.013
	[1.91]	[1.94]	[1.25]	[0.75]	[0.15]	[0.92]	[2.42]*	[1.80]	[2.24]*	[1.23]	[1.12]	[0.78]	[6.60]**	[6.84]**	[2.64]**
not offspring of the head	-0.01	0.064	-0.081	-0.066	0.018	-0.103	-0.053	-0.014	-0.091	-0.116	-0.033	-0.182	-0.118	-0.128	-0.109
	[0.24]	[1.04]	[2.05]*	[1.93]	[0.26]	[2.96]**	[1.22]	[0.27]	[1.59]	[6.61]**	[1.40]	[7.88]**	[7.88]**	[6.08]**	[5.56]**
grandchild				-0.014	0.033	-0.059	0.047	0.105	0.007						
				[1.37]	[2.30]*	[4.69]**	[0.84]	[1.47]	[0.10]						
log per capita expenditure	0.128	0.135	0.119	0.098	0.106	0.089	0.068	0.05	0.093	0.129	0.146	0.117	0.076	0.078	0.072
	[9.07]**	[7.50]**	[7.08]**	[11.87]**	[8.76]**	[10.23]**	[2.46]*	[1.63]	[2.58]**	[10.43]**	[9.26]**	[7.32]**	[6.89]**	[5.22]**	[4.86]**
N	11474	5644	5830	19339	10015	9324	3481	1793	1688	8291	4281	4010	26867	13387	13480

Robust *z* statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.1 (CONT.)

Probit Model for School Attendance: 5-16 years

	The Gambia			Ghana			Guinea			Kenia			Madagascar		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.086			-0.046			-0.156			0.003			-0.02		
	[5.36]**			[5.12]**			[12.86]**			[0.41]			[1.38]		
urban	-0.001	0.018	-0.018	0.028	0.044	0.012	0.309	0.349	0.253	-0.034	-0.024	-0.042	0.04	0.058	0.025
	[0.03]	[0.50]	[0.55]	[2.21]*	[2.81]**	[0.73]	[14.43]**	[12.49]**	[11.52]**	[1.78]	[0.88]	[1.77]	[2.36]*	[2.92]**	[1.00]
head illiterate				-0.169	-0.152	-0.184	0.042	0.051	0.037	-0.147	-0.14	-0.154	-0.088	-0.073	-0.103
				[12.30]**	[9.09]**	[10.24]**	[1.19]	[1.16]	[1.12]	[12.92]**	[9.69]**	[10.78]**	[4.33]**	[2.57]*	[4.07]**
head never attended	-0.122	-0.098	-0.143												
	[4.41]**	[2.83]**	[3.96]**												
head age	0.007	0.007	0.008	-0.006	-0.005	-0.007	0.004	0.008	0	0.012	0.014	0.01	0.005	0.003	0.008
	[1.77]	[1.42]	[1.42]	[2.29]*	[1.69]	[1.69]	[0.91]	[1.19]	[0.06]	[4.91]**	[4.52]**	[3.17]**	[1.10]	[0.51]	[1.42]
head age^2	-0.006	-0.006	-0.006	0.006	0.005	0.006	-0.004	-0.007	-0.001	-0.009	-0.012	-0.006	-0.006	-0.005	-0.009
	[1.50]	[1.23]	[1.24]	[2.30]*	[1.82]	[1.59]	[0.96]	[1.14]	[0.22]	[3.59]**	[3.74]**	[1.97]*	[1.33]	[0.74]	[1.46]
head sex	0.076	0.102	0.05	0.03	0.035	0.028	-0.001	0.01	-0.009	0.044	0.043	0.044	-0.045	-0.061	-0.03
	[2.70]**	[2.64]**	[1.34]	[2.24]*	[2.06]*	[1.47]	[0.05]	[0.23]	[0.38]	[4.68]**	[3.42]**	[3.67]**	[1.62]	[1.59]	[0.96]
share children 0-5	-0.087	-0.074	-0.112	-0.039	-0.034	-0.05	-0.15	-0.156	-0.136	0.026	-0.058	0.11	0.191	0.161	0.221
	[0.81]	[0.53]	[0.86]	[0.68]	[0.50]	[0.65]	[1.74]	[1.25]	[1.50]	[0.58]	[0.96]	[1.97]*	[2.23]*	[1.35]	[2.04]*
share children 6-16	0.169	0.009	0.34	0.098	0.033	0.159	0.015	-0.058	0.08	0.148	0.093	0.205	0.316	0.305	0.319
	[1.97]*	[0.08]	[3.09]**	[2.28]*	[0.60]	[2.65]**	[0.21]	[0.53]	[1.10]	[3.50]**	[1.69]	[4.09]**	[4.71]**	[3.36]**	[3.56]**
share people 17-25	0.101	-0.083	0.275	0.082	0.116	0.036	0.078	0.039	0.107	0.1	0.079	0.124	0.103	0.06	0.118
	[1.09]	[0.69]	[2.32]*	[1.59]	[1.83]	[0.47]	[0.97]	[0.32]	[1.32]	[2.48]*	[1.44]	[2.43]*	[1.30]	[0.56]	[1.15]
household size	-0.004	-0.003	-0.004	-0.006	-0.005	-0.007	0.008	0.008	0.008	-0.007	-0.004	-0.011	-0.012	-0.007	-0.016
	[1.33]	[0.94]	[1.48]	[1.93]	[1.39]	[1.75]	[3.08]**	[2.10]*	[3.51]**	[2.76]**	[1.29]	[3.59]**	[2.22]*	[0.95]	[2.53]*
not offspring of the head	-0.019	-0.056	0.021	-0.11	-0.068	-0.141	-0.087	-0.055	-0.107	-0.757	-0.706	-0.792	-0.15	-0.041	-0.25
	[0.96]	[2.19]*	[0.82]	[6.23]**	[2.95]**	[5.73]**	[4.90]**	[1.84]	[6.32]**	[11.36]**	[8.02]**	[8.90]**	[3.50]**	[0.78]	[4.29]**
grandchild				0.016	0.026	0.002	-0.084	-0.148	-0.024	-0.034	-0.022	-0.047	0.078	0.079	0.078
				[0.86]	[1.23]	[0.07]	[2.72]**	[3.44]**	[0.69]	[2.63]**	[1.20]	[2.77]**	[2.44]*	[1.83]	[1.90]
log per capita expenditure	0.072	0.056	0.087	0.056	0.053	0.059	0.146	0.144	0.142	0.049	0.045	0.053	0.063	0.067	0.06
	[4.43]**	[2.63]**	[4.34]**	[5.47]**	[4.42]**	[4.23]**	[9.25]**	[6.34]**	[9.25]**	[4.93]**	[2.94]**	[5.51]**	[4.61]**	[4.01]**	[3.35]**
N	4771	2444	2327	8960	4524	4436	9659	4978	4681	18623	9470	9153	5486	2696	2790

Robust z statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.1 (CONT.)

Probit Model for School Attendance: 5-16 years

	Mozambique			Malawi			Nigeria			Uganda			Zambia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	0.002			-0.098			-0.035			-0.015			-0.025		
	[0.17]			[8.28]**			[2.53]*			[2.19]*			[2.84]**		
urban	0.05	0.082	0.02	0.106	0.09	0.12	0.152	0.128	0.18	-0.008	0.019	-0.037	0.11	0.097	0.124
	[2.04]*	[2.60]**	[0.62]	[6.90]**	[4.54]**	[5.79]**	[6.32]**	[4.65]**	[5.93]**	[0.55]	[0.98]	[1.97]*	[10.46]**	[7.19]**	[8.78]**
head illiterate	-0.119	-0.112	-0.127	-0.164	-0.132	-0.196	-0.344	-0.323	-0.376	-0.087	-0.096	-0.077			
	[8.01]**	[5.86]**	[6.70]**	[10.57]**	[6.69]**	[9.14]**	[16.87]**	[13.83]**	[14.78]**	[8.52]**	[7.16]**	[6.22]**			
head never attended													-0.145	-0.153	-0.135
													[6.78]**	[6.30]**	[4.04]**
head age	0.007	0.012	0.003	0.02	0.018	0.022	0	-0.002	0.002	-0.002	-0.002	-0.002	0.013	0.013	0.013
	[2.09]*	[2.78]**	[0.71]	[5.45]**	[3.76]**	[4.59]**	[0.19]	[0.67]	[0.43]	[1.85]	[1.35]	[1.44]	[4.53]**	[3.30]**	[3.68]**
head age^2	-0.005	-0.009	-0.002	-0.017	-0.015	-0.018	0.006	0.007	0.004	0.004	0.004	0.004	-0.008	-0.008	-0.008
	[1.67]	[2.24]*	[0.59]	[4.41]**	[3.03]**	[3.82]**	[1.98]*	[1.97]*	[1.05]	[3.08]**	[2.38]*	[2.28]*	[2.79]**	[2.02]*	[2.33]*
head sex	0.035	0.021	0.048	0.08	0.048	0.115	0.239	0.214	0.274	0.003	0	0.006	0.088	0.084	0.093
	[1.98]*	[0.95]	[2.17]*	[4.30]**	[2.00]*	[4.59]**	[9.16]**	[6.03]**	[8.79]**	[0.30]	[0.01]	[0.48]	[6.51]**	[4.51]**	[5.37]**
share children 0-5	-0.219	-0.07	-0.362	-0.045	-0.092	0.011	-0.306	-0.349	-0.258	0.075	0.102	0.047	-0.124	-0.129	-0.118
	[3.08]**	[0.80]	[3.97]**	[0.69]	[1.10]	[0.12]	[3.87]**	[3.74]**	[2.51]*	[1.81]	[1.79]	[0.95]	[2.20]*	[1.81]	[1.47]
share children 6-16	-0.022	0.11	-0.148	0.097	0.122	0.069	0.251	0.22	0.272	0.079	0.057	0.097	-0.001	-0.048	0.047
	[0.37]	[1.41]	[1.90]	[1.78]	[1.68]	[0.95]	[4.15]**	[2.88]**	[3.39]**	[2.25]*	[1.30]	[2.12]*	[0.02]	[0.78]	[0.71]
share people 17-25	-0.006	-0.013	0.007	-0.047	-0.069	-0.027	0.063	-0.019	0.159	-0.017	0.007	-0.043	-0.055	-0.081	-0.03
	[0.09]	[0.15]	[0.08]	[0.78]	[0.86]	[0.32]	[0.78]	[0.18]	[1.52]	[0.37]	[0.12]	[0.77]	[1.16]	[1.31]	[0.46]
household size	0.013	0.004	0.021	0.01	0.01	0.009	-0.007	-0.007	-0.006	0.001	-0.001	0.004	0.016	0.018	0.014
	[2.26]*	[0.69]	[2.90]**	[3.18]**	[2.57]*	[2.28]*	[1.48]	[1.68]	[0.92]	[0.70]	[0.56]	[2.08]*	[6.38]**	[5.81]**	[4.21]**
not offspring of the head	-0.084	-0.054	-0.105	-0.018	0	-0.038				-0.035	-0.032	-0.036	0.012	0.03	-0.007
	[3.69]**	[1.74]	[3.83]**	[0.96]	[0.01]	[1.50]				[3.44]**	[2.23]*	[2.79]**	[0.81]	[1.34]	[0.36]
grandchild	-0.037	-0.079	0.004	-0.035	-0.089	0.021							-0.134	-0.139	-0.128
	[1.48]	[2.33]*	[0.11]	[1.40]	[2.73]**	[0.66]							[7.07]**	[5.38]**	[5.28]**
log per capita expenditure	0.021	0.027	0.016	0.109	0.101	0.115	-0.009	0.005	-0.029	0.097	0.083	0.112	0.102	0.094	0.112
	[2.06]*	[2.04]*	[1.23]	[11.50]**	[8.03]**	[8.88]**	[0.71]	[0.33]	[1.76]	[11.35]**	[7.92]**	[10.01]**	[16.61]**	[12.04]**	[13.33]**
N	9540	4764	4776	14548	7392	7156	13975	7640	6335	22327	11355	10972	31568	15893	15675

Robust *z* statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.2

Probit model for School Attendance: 5 - 10 years

	Burundi			Burkina Faso			Camaroon			Côte d'Ivoire (1)			Ethiopia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.067			-0.088			-0.017			-0.062			-0.025		
	[2.89]**			[9.40]**			[0.53]			[3.74]**			[2.27]*		
urban	0.25	0.219	0.284	0.366	0.391	0.333	-0.006	-0.012	-0.011	0.125	0.126	0.125	0.415	0.41	0.417
	[9.89]**	[6.11]**	[8.74]**	[22.75]**	[17.27]**	[16.66]**	[0.12]	[0.18]	[0.20]	[6.22]**	[4.80]**	[4.44]**	[25.14]**	[18.47]**	[19.26]**
head illiterate	-0.074	-0.071	-0.075	-0.187	-0.19	-0.178	-0.428	-0.351	-0.507				-0.092	-0.086	-0.099
	[3.47]**	[2.21]*	[2.39]*	[10.82]**	[8.07]**	[8.43]**	[7.84]**	[5.14]**	[8.09]**				[5.89]**	[4.13]**	[4.75]**
head never attended										-0.285	-0.27	-0.299			
										[14.02]**	[10.10]**	[10.67]**			
head age	0.025	0.026	0.025	0.001	0.002	0.001	0.001	0	0.002	0.004	0.005	0.003	0.002	0.001	0.003
	[3.63]**	[2.67]**	[3.13]**	[0.52]	[0.48]	[0.34]	[0.11]	[0.00]	[0.14]	[0.82]	[0.76]	[0.48]	[0.64]	[0.20]	[0.77]
head age^2	-0.023	-0.024	-0.022	-0.001	-0.001	-0.001	0.006	0.007	0.006	-0.002	-0.003	0	-0.001	0	-0.002
	[3.22]**	[2.42]*	[2.79]**	[0.26]	[0.16]	[0.28]	[0.57]	[0.49]	[0.41]	[0.31]	[0.43]	[0.04]	[0.36]	[0.02]	[0.54]
head sex	0.133	0.125	0.145	0.059	0.078	0.046	0.209	0.137	0.251	0.122	0.082	0.162	0.078	0.072	0.081
	[4.00]**	[2.37]*	[3.10]**	[2.34]*	[1.92]	[1.46]	[3.97]**	[2.04]*	[3.70]**	[4.08]**	[2.06]*	[3.92]**	[4.22]**	[2.90]**	[3.22]**
share children 0-5	-0.01	-0.023	0.006	0.03	0.094	-0.035	-0.202	-0.069	-0.326	-0.009	0.023	-0.045	-0.276	-0.272	-0.274
	[0.06]	[0.11]	[0.03]	[0.53]	[1.14]	[0.49]	[0.91]	[0.26]	[1.08]	[0.10]	[0.20]	[0.35]	[3.97]**	[2.86]**	[2.83]**
share children 6-16	-0.156	-0.072	-0.263	0.034	0.031	0.033	-0.161	-0.099	-0.176	0.188	0.214	0.153	-0.25	-0.247	-0.243
	[1.19]	[0.39]	[1.56]	[0.67]	[0.41]	[0.52]	[0.91]	[0.45]	[0.75]	[2.42]*	[2.19]*	[1.37]	[3.85]**	[2.85]**	[2.75]**
share people 17-25	0.035	0.127	-0.084	-0.029	-0.064	-0.001	-0.229	0.107	-0.551	-0.029	0.075	-0.137	-0.15	-0.195	-0.087
	[0.27]	[0.70]	[0.45]	[0.54]	[0.83]	[0.01]	[1.19]	[0.45]	[2.14]*	[0.33]	[0.66]	[1.13]	[2.23]*	[2.10]*	[0.99]
household size	0.012	0.014	0.014	0.001	0.002	0.001	0.018	0.015	0.018	0.005	0.001	0.009	0.02	0.027	0.012
	[1.45]	[1.04]	[1.45]	[1.24]	[1.17]	[0.51]	[2.74]**	[2.11]*	[2.26]*	[1.75]	[0.30]	[2.34]*	[4.20]**	[4.31]**	[1.92]
not offspring of the head	-0.017	0.087	-0.131	-0.029	-0.031	-0.032	-0.01	0.101	-0.079	-0.069	-0.041	-0.092	-0.051	-0.055	-0.049
	[0.30]	[1.16]	[2.45]*	[0.57]	[0.36]	[0.55]	[0.17]	[1.58]	[0.98]	[3.10]**	[1.39]	[2.96]**	[2.71]**	[2.07]*	[1.90]
grandchild				0	0.04	-0.038	0.07	0.208	-0.005						
				[0.01]	[2.19]*	[2.35]*	[0.99]	[2.11]*	[0.05]						
log per capita expenditure	0.122	0.115	0.127	0.092	0.104	0.078	0.058	0.058	0.065	0.136	0.136	0.137	0.083	0.094	0.07
	[8.37]**	[5.56]**	[6.87]**	[9.40]**	[7.31]**	[7.11]**	[1.59]	[1.38]	[1.40]	[9.01]**	[6.93]**	[6.61]**	[6.48]**	[5.36]**	[3.95]**
N	6362	3174	3188	10159	5182	4977	1891	978	913	4594	2362	2232	13919	6991	6928

Robust *z* statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.2 (CONT.)

Probit model for School Attendance: 5 - 10 years

	The Gambia			Ghana			Guinea			Kenia			Madagascar		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.046			-0.029			-0.105			0.007			-0.019		
	[2.38]*			[2.50]*			[7.25]**			[0.68]			[1.13]		
urban	-0.051	-0.02	-0.077	0.034	0.044	0.023	0.256	0.298	0.208	-0.006	-0.009	-0.002	0.007	0.017	-0.002
	[1.98]*	[0.53]	[2.23]*	[1.96]*	[2.08]*	[0.97]	[11.68]**	[9.77]**	[8.95]**	[0.23]	[0.25]	[0.06]	[0.36]	[0.83]	[0.07]
head illiterate				-0.181	-0.173	-0.184	0.022	0.012	0.035	-0.182	-0.172	-0.194	-0.025	-0.004	-0.045
				[10.16]**	[8.00]**	[7.75]**	[0.55]	[0.21]	[1.09]	[11.77]**	[8.44]**	[9.41]**	[1.14]	[0.13]	[1.48]
head never attended	-0.069	-0.018	-0.116												
	[2.32]*	[0.43]	[2.91]**												
head age	0.006	0.006	0.007	-0.006	-0.005	-0.007	0.006	0.012	-0.001	0.014	0.018	0.009	0.005	0.004	0.007
	[1.44]	[1.04]	[1.27]	[1.70]	[1.17]	[1.26]	[1.35]	[1.80]	[0.09]	[4.22]**	[4.15]**	[1.85]	[1.15]	[0.70]	[1.01]
head age^2	-0.006	-0.006	-0.007	0.006	0.005	0.006	-0.005	-0.01	0	-0.011	-0.015	-0.006	-0.005	-0.004	-0.006
	[1.45]	[1.12]	[1.25]	[1.59]	[1.27]	[1.01]	[1.20]	[1.60]	[0.08]	[3.36]**	[3.64]**	[1.11]	[1.11]	[0.76]	[0.86]
head sex	0.072	0.079	0.068	0.047	0.026	0.07	0.023	0.042	0.004	0.073	0.074	0.072	0.02	0.03	-0.002
	[2.42]*	[1.83]	[1.61]	[2.56]*	[1.09]	[2.82]**	[0.82]	[1.00]	[0.13]	[5.20]**	[3.84]**	[3.93]**	[0.73]	[0.86]	[0.05]
share children 0-5	-0.073	0.066	-0.204	-0.139	-0.037	-0.254	-0.105	-0.14	-0.086	0.037	-0.059	0.129	-0.031	-0.055	-0.017
	[0.65]	[0.42]	[1.35]	[1.82]	[0.38]	[2.44]*	[1.14]	[1.02]	[0.74]	[0.57]	[0.69]	[1.50]	[0.31]	[0.44]	[0.12]
share children 6-16	0.129	0.122	0.152	-0.021	0.034	-0.084	-0.003	-0.101	0.09	0.053	-0.003	0.103	-0.051	-0.044	-0.065
	[1.42]	[0.94]	[1.20]	[0.34]	[0.40]	[0.99]	[0.04]	[0.79]	[0.95]	[0.89]	[0.04]	[1.25]	[0.56]	[0.36]	[0.52]
share people 17-25	0.028	-0.038	0.086	0.027	0.17	-0.119	-0.072	-0.137	-0.01	-0.035	-0.061	-0.011	-0.115	-0.175	-0.092
	[0.28]	[0.27]	[0.64]	[0.37]	[1.75]	[1.20]	[0.84]	[1.08]	[0.10]	[0.58]	[0.77]	[0.13]	[1.30]	[1.49]	[0.74]
household size	-0.001	-0.001	-0.001	-0.003	-0.008	0.003	0.007	0.006	0.007	-0.007	-0.006	-0.009	0.008	0.017	-0.002
	[0.68]	[0.48]	[0.53]	[0.80]	[1.74]	[0.47]	[2.61]**	[1.78]	[2.61]**	[1.91]	[1.19]	[1.96]	[1.21]	[2.08]*	[0.22]
not offspring of the head	-0.002	-0.042	0.034	-0.07	-0.054	-0.074	-0.061	-0.047	-0.069	-0.536	-0.287	-0.655	0	0.025	-0.01
	[0.10]	[1.33]	[1.13]	[2.51]*	[1.36]	[2.16]*	[2.72]**	[1.24]	[3.07]**	[4.00]**	[1.27]	[3.76]**	[0.01]	[0.51]	[0.16]
grandchild				0.009	0.014	0.003	-0.07	-0.131	-0.01	-0.017	-0.019	-0.018	-0.024	-0.036	0.007
				[0.37]	[0.47]	[0.09]	[2.14]*	[2.80]**	[0.24]	[0.91]	[0.71]	[0.68]	[0.65]	[0.70]	[0.13]
log per capita expenditure	0.072	0.073	0.072	0.063	0.067	0.058	0.141	0.129	0.149	0.076	0.074	0.077	0.066	0.075	0.057
	[4.45]**	[3.17]**	[3.28]**	[4.97]**	[4.38]**	[3.11]**	[8.46]**	[5.17]**	[8.03]**	[6.22]**	[3.99]**	[5.53]**	[4.48]**	[4.24]**	[2.73]**
N	2823	1428	1395	4850	2469	2381	5740	2883	2857	9864	5007	4857	2759	1358	1401

Robust z statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.2 (CONT.)

Probit model for School Attendance: 5 - 10 years

	Mozambique			Malawi			Nigeria			Uganda			Zambia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	0.022			-0.048			-0.03			-0.005			0.026		
	[1.41]			[3.24]**			[1.58]			[0.54]			[2.29]*		
urban	0.119	0.129	0.109	0.09	0.086	0.094	0.188	0.156	0.232	0.029	0.048	0.01	0.142	0.136	0.147
	[3.83]**	[3.07]**	[2.56]*	[5.37]**	[3.62]**	[4.00]**	[6.43]**	[4.50]**	[6.06]**	[1.26]	[1.76]	[0.34]	[11.49]**	[8.14]**	[8.60]**
head illiterate	-0.11	-0.087	-0.131	-0.123	-0.08	-0.162	-0.388	-0.373	-0.41	-0.09	-0.107	-0.073			
	[6.09]**	[3.47]**	[5.30]**	[6.90]**	[3.41]**	[6.18]**	[16.35]**	[13.48]**	[13.15]**	[6.86]**	[6.17]**	[4.21]**			
head never attended													-0.133	-0.142	-0.123
													[5.52]**	[4.91]**	[3.07]**
head age	0.009	0.009	0.009	0.016	0.01	0.022	-0.006	-0.007	-0.004	-0.002	-0.003	-0.001	0.008	0.008	0.008
	[2.14]*	[1.68]	[1.54]	[4.00]**	[1.74]	[4.14]**	[1.68]	[1.60]	[0.89]	[1.33]	[1.36]	[0.58]	[2.53]*	[1.73]	[1.84]
head age^2	-0.008	-0.008	-0.009	-0.014	-0.008	-0.019	0.012	0.014	0.009	0.004	0.005	0.003	-0.003	-0.002	-0.004
	[1.99]*	[1.39]	[1.60]	[3.31]**	[1.38]	[3.57]**	[3.05]**	[2.81]**	[1.72]	[2.40]*	[2.09]*	[1.45]	[0.93]	[0.52]	[0.85]
head sex	0.033	0.034	0.032	0.088	0.053	0.123	0.232	0.213	0.262	0.044	0.037	0.052	0.085	0.075	0.096
	[1.54]	[1.14]	[1.07]	[3.93]**	[1.70]	[3.97]**	[5.68]**	[3.94]**	[5.27]**	[3.03]**	[1.91]	[2.84]**	[5.15]**	[3.33]**	[4.19]**
share children 0-5	0.005	0.164	-0.15	0.004	-0.105	0.104	-0.057	-0.017	-0.118	0.12	0.113	0.117	-0.083	-0.045	-0.12
	[0.06]	[1.38]	[1.25]	[0.06]	[1.00]	[0.95]	[0.54]	[0.13]	[0.80]	[2.00]*	[1.37]	[1.55]	[1.29]	[0.51]	[1.39]
share children 6-16	0.078	0.266	-0.1	0.087	0.147	0.024	0.343	0.393	0.286	-0.03	-0.066	-0.005	-0.098	-0.099	-0.096
	[0.96]	[2.31]*	[0.91]	[1.30]	[1.57]	[0.26]	[3.69]**	[3.43]**	[2.24]*	[0.59]	[0.95]	[0.07]	[1.66]	[1.23]	[1.22]
share people 17-25	-0.094	-0.157	-0.034	-0.082	-0.172	0.006	-0.125	-0.151	-0.078	-0.117	-0.122	-0.12	-0.158	-0.166	-0.147
	[1.15]	[1.37]	[0.31]	[1.15]	[1.72]	[0.06]	[1.09]	[1.05]	[0.50]	[2.09]*	[1.57]	[1.69]	[2.78]**	[2.14]*	[1.88]
household size	0.009	0.006	0.014	0.007	0.01	0.005	-0.018	-0.018	-0.017	0.003	0.002	0.005	0.015	0.015	0.016
	[1.53]	[0.80]	[1.55]	[2.10]*	[2.21]*	[0.94]	[2.70]**	[2.78]**	[1.94]	[1.53]	[0.81]	[1.75]	[5.19]**	[4.01]**	[3.87]**
not offspring of the head	-0.022	0.049	-0.065	0.013	0.023	0.001				-0.014	-0.018	-0.006	0.021	0.034	0.007
	[0.63]	[0.95]	[1.55]	[0.50]	[0.59]	[0.03]				[0.97]	[0.89]	[0.35]	[1.01]	[1.09]	[0.28]
grandchild	0.014	-0.022	0.05	-0.006	-0.029	0.012							-0.141	-0.135	-0.145
	[0.45]	[0.53]	[1.13]	[0.21]	[0.76]	[0.31]							[6.53]**	[4.60]**	[4.78]**
log per capita expenditure	0.027	0.056	0	0.098	0.103	0.093	-0.012	0.009	-0.043	0.125	0.102	0.148	0.109	0.101	0.117
	[2.16]*	[3.22]**	[0.02]	[9.08]**	[6.60]**	[6.19]**	[0.76]	[0.47]	[2.04]*	[11.64]**	[7.16]**	[10.49]**	[15.24]**	[10.22]**	[12.07]**
N	5083	2510	2573	7907	3940	3967	7997	4358	3639	12402	6247	6155	16736	8403	8333

Robust *z* statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.3

Probit model for School Attendance: 11 - 13 years

	Burundi			Burkina Faso			Camaroon			Côte d'Ivoire (1)			Ethiopia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.089			-0.124			-0.042			-0.178			-0.143		
	[2.82]**			[8.32]**			[1.22]			[7.55]**			[6.52]**		
urban	0.169	0.102	0.234	0.384	0.358	0.404	-0.09	-0.1	-0.07	0.076	0.066	0.089	0.477	0.418	0.524
	[4.75]**	[2.21]*	[4.96]**	[16.94]**	[11.30]**	[13.22]**	[1.90]	[1.94]	[1.01]	[2.68]**	[1.92]	[2.12]*	[20.50]**	[13.08]**	[16.66]**
head illiterate	-0.181	-0.2	-0.154	-0.221	-0.262	-0.171	-0.354	-0.272	-0.423				-0.084	-0.032	-0.14
	[4.83]**	[4.10]**	[3.07]**	[8.97]**	[7.50]**	[5.32]**	[6.88]**	[4.80]**	[4.82]**				[2.89]**	[0.79]	[3.57]**
head never attended										-0.292	-0.289	-0.281			
										[9.79]**	[7.91]**	[6.53]**			
head age	0.008	0.012	-0.006	-0.001	-0.006	0.004	-0.036	-0.024	-0.044	0.001	0.01	-0.007	-0.004	-0.004	-0.003
	[0.95]	[1.04]	[0.54]	[0.34]	[1.11]	[0.77]	[3.01]**	[1.93]	[2.19]*	[0.14]	[1.21]	[0.62]	[0.64]	[0.44]	[0.38]
head age^2	-0.008	-0.008	0.002	0.001	0.007	-0.005	0.04	0.025	0.052	0.002	-0.006	0.009	0.004	0.002	0.004
	[1.09]	[0.73]	[0.20]	[0.35]	[1.28]	[0.97]	[3.38]**	[2.11]*	[2.66]**	[0.34]	[0.68]	[0.83]	[0.60]	[0.25]	[0.52]
head sex	0.094	0.12	0.065	0.082	0.108	0.077	0.096	0.021	0.176	0.056	0.102	-0.019	0.043	0.045	0.036
	[1.90]	[1.99]*	[0.92]	[2.35]*	[2.09]*	[1.75]	[2.06]*	[0.35]	[3.03]**	[1.25]	[1.69]	[0.30]	[1.34]	[1.02]	[0.81]
share children 0-5	-0.208	-0.035	-0.496	0.018	0.17	-0.145	-0.216	-0.241	-0.078	-0.016	0.179	-0.223	-0.386	-0.524	-0.219
	[0.80]	[0.11]	[1.62]	[0.20]	[1.38]	[1.28]	[1.11]	[1.16]	[0.21]	[0.12]	[1.06]	[1.09]	[2.90]**	[2.79]**	[1.21]
share children 6-16	0.09	0.192	-0.071	0.093	0.082	0.111	0.049	0.203	-0.092	0.346	0.159	0.516	-0.108	-0.142	-0.045
	[0.42]	[0.70]	[0.29]	[1.17]	[0.75]	[1.12]	[0.32]	[1.18]	[0.35]	[3.08]**	[1.17]	[3.01]**	[0.93]	[0.87]	[0.29]
share people 17-25	0.295	0.205	0.256	0.058	0.103	-0.014	-0.055	0.013	-0.09	0.161	0.017	0.329	-0.24	-0.245	-0.206
	[1.33]	[0.71]	[1.01]	[0.71]	[0.90]	[0.14]	[0.29]	[0.07]	[0.30]	[1.30]	[0.11]	[1.73]	[2.01]*	[1.46]	[1.27]
household size	0.031	0.038	0.027	0.002	-0.001	0.005	0.008	0.001	0.013	0.001	0.004	-0.004	0.024	0.039	0.006
	[2.18]*	[2.24]*	[1.36]	[1.09]	[0.49]	[2.45]*	[1.65]	[0.28]	[1.73]	[0.37]	[0.98]	[0.74]	[2.82]**	[3.26]**	[0.51]
not offspring of the head	0.032	0.044	-0.012	-0.107	-0.071	-0.114	-0.173	-0.208	-0.105	-0.157	-0.037	-0.255	-0.181	-0.21	-0.147
	[0.53]	[0.48]	[0.18]	[1.70]	[0.58]	[1.70]	[2.79]**	[2.67]**	[1.26]	[5.05]**	[0.90]	[5.71]**	[5.18]**	[4.55]**	[3.07]**
grandchild				-0.04	0.012	-0.095	-0.082	-0.098	-0.094						
				[1.90]	[0.41]	[3.50]**	[0.96]	[1.01]	[0.84]						
log per capita expenditure	0.113	0.12	0.103	0.107	0.101	0.11	0.063	0.051	0.076	0.126	0.145	0.107	0.094	0.103	0.089
	[4.84]**	[4.17]**	[3.26]**	[7.55]**	[4.90]**	[6.53]**	[2.02]*	[1.44]	[1.58]	[5.79]**	[5.12]**	[3.42]**	[3.92]**	[2.98]**	[2.72]**
N	2606	1287	1319	4979	2649	2330	813	421	392	1967	1050	917	6330	3171	3159

Robust *z* statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.3 (CONT.)

Probit model for School Attendance: 11 - 13 years

	The Gambia			Ghana			Guinea			Kenia			Madagascar		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.095			-0.045			-0.244			0.009			0.018		
	[2.99]**			[3.08]**			[7.63]**			[1.05]			[0.71]		
urban	0.081	0.092	0.069	0.017	0.031	-0.001	0.388	0.423	0.318	-0.042	-0.061	-0.031	0.072	0.07	0.076
	[1.71]	[1.49]	[1.12]	[0.98]	[1.31]	[0.04]	[9.39]**	[7.54]**	[7.51]**	[1.87]	[1.60]	[1.35]	[3.01]**	[1.97]*	[2.51]*
head illiterate				-0.139	-0.08	-0.197	0.079	0.107	0.066	-0.117	-0.121	-0.106	-0.114	-0.101	-0.125
				[7.15]**	[3.22]**	[7.53]**	[1.40]	[1.30]	[1.00]	[8.40]**	[6.28]**	[5.89]**	[3.66]**	[2.18]*	[3.24]**
head never attended	-0.261	-0.208	-0.315												
	[5.01]**	[3.11]**	[4.50]**												
head age	0.009	0.01	0.01	-0.005	-0.006	-0.005	-0.012	-0.024	-0.001	0.002	-0.001	0.005	0.004	-0.006	0.012
	[1.20]	[1.00]	[0.86]	[1.31]	[1.36]	[0.92]	[1.15]	[1.41]	[0.07]	[0.88]	[0.29]	[1.58]	[0.43]	[0.48]	[1.26]
head age^2	-0.007	-0.007	-0.007	0.004	0.005	0.004	0.009	0.022	-0.003	-0.001	0.001	-0.003	-0.004	0.005	-0.012
	[0.97]	[0.81]	[0.72]	[1.23]	[1.33]	[0.88]	[0.94]	[1.38]	[0.27]	[0.54]	[0.29]	[1.11]	[0.48]	[0.45]	[1.25]
head sex	0.053	0.066	0.046	0.039	0.056	0.028	-0.076	-0.044	-0.087	0.031	0.027	0.032	-0.021	-0.03	-0.01
	[0.95]	[0.91]	[0.60]	[2.00]*	[2.07]*	[1.13]	[1.54]	[0.50]	[2.36]*	[3.19]**	[2.02]*	[2.53]*	[0.48]	[0.46]	[0.18]
share children 0-5	-0.018	-0.186	0.146	-0.027	-0.096	0.033	-0.088	0.233	-0.281	-0.088	-0.24	0.066	-0.057	-0.209	0.065
	[0.09]	[0.67]	[0.57]	[0.35]	[0.92]	[0.31]	[0.48]	[0.80]	[1.55]	[1.83]	[3.98]**	[0.97]	[0.38]	[0.99]	[0.34]
share children 6-16	0.104	-0.201	0.41	0.064	-0.135	0.242	-0.039	-0.108	0.023	0.016	-0.019	0.056	0.316	0.332	0.264
	[0.60]	[0.82]	[1.82]	[1.04]	[1.76]	[2.71]**	[0.26]	[0.47]	[0.16]	[0.36]	[0.31]	[0.98]	[2.45]*	[1.88]	[1.64]
share people 17-25	0.141	-0.411	0.671	0.171	0.08	0.228	0.338	0.436	0.214	0.012	-0.011	0.044	0.208	0.06	0.318
	[0.76]	[1.57]	[2.78]**	[2.23]*	[0.80]	[2.00]*	[1.75]	[1.39]	[1.33]	[0.28]	[0.20]	[0.77]	[1.52]	[0.30]	[1.78]
household size	-0.009	-0.008	-0.009	-0.004	0.003	-0.01	0.008	0	0.013	-0.002	-0.001	-0.004	-0.01	-0.001	-0.018
	[2.12]*	[1.62]	[2.09]*	[0.98]	[0.49]	[1.73]	[1.61]	[0.05]	[3.00]**	[0.94]	[0.21]	[1.29]	[1.18]	[0.08]	[1.84]
not offspring of the head	-0.008	-0.019	0.02	-0.106	-0.072	-0.123	-0.147	-0.079	-0.169	-0.772	-0.76	-0.79	-0.2	-0.084	-0.336
	[0.20]	[0.36]	[0.39]	[4.15]**	[2.30]*	[3.20]**	[3.76]**	[1.19]	[5.29]**	[8.20]**	[5.94]**	[5.80]**	[2.42]*	[0.89]	[2.85]**
grandchild				-0.015	-0.008	-0.03	-0.152	-0.265	-0.038	-0.029	-0.027	-0.028	0.018	-0.035	0.056
				[0.59]	[0.24]	[0.73]	[2.50]*	[2.95]**	[0.61]	[1.80]	[1.10]	[1.36]	[0.35]	[0.38]	[1.17]
log per capita expenditure	0.002	-0.021	0.027	0.034	0.024	0.048	0.179	0.18	0.168	0.006	0.002	0.013	0.023	0.04	0.005
	[0.07]	[0.55]	[0.68]	[2.69]**	[1.56]	[2.64]**	[5.25]**	[3.36]**	[5.89]**	[0.51]	[0.13]	[1.17]	[1.02]	[1.26]	[0.18]
N	1002	510	492	2246	1096	1150	2094	1068	1026	4564	2289	2275	1383	691	692

Robust z statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.3 (CONT.)

Probit model for School Attendance: 11 - 13 years

	Mozambique			Malawi			Nigeria			Uganda			Zambia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.004			-0.145			-0.027			-0.012			-0.03		
	[0.24]			[6.30]**			[1.26]			[1.37]			[2.12]*		
urban	-0.043	-0.006	-0.073	0.106	0.091	0.119	0.039	0.022	0.056	-0.056	-0.014	-0.092	0.061	0.058	0.063
	[1.15]	[0.13]	[1.43]	[3.71]**	[2.44]*	[3.00]**	[1.47]	[0.67]	[1.47]	[3.25]**	[0.69]	[3.54]**	[3.98]**	[2.90]**	[2.83]**
head illiterate	-0.126	-0.141	-0.114	-0.198	-0.161	-0.241	-0.264	-0.243	-0.292	-0.073	-0.074	-0.071			
	[5.50]**	[4.52]**	[3.78]**	[7.10]**	[4.27]**	[6.38]**	[10.19]**	[7.44]**	[8.33]**	[6.12]**	[4.63]**	[4.66]**			
head never attended													-0.131	-0.125	-0.14
													[5.35]**	[3.87]**	[3.95]**
head age	-0.008	-0.005	-0.007	0.015	0.013	0.017	0.002	0.001	0.002	-0.002	-0.003	-0.001	0.005	0.004	0.005
	[1.58]	[0.75]	[1.13]	[2.40]*	[1.61]	[1.89]	[0.50]	[0.35]	[0.43]	[1.38]	[1.64]	[0.71]	[1.13]	[0.80]	[0.80]
head age^2	0.007	0.005	0.006	-0.013	-0.012	-0.014	0	0	0	0.003	0.004	0.002	-0.004	-0.005	-0.003
	[1.42]	[0.65]	[1.00]	[2.10]*	[1.42]	[1.62]	[0.03]	[0.08]	[0.02]	[1.95]	[2.00]*	[1.12]	[1.01]	[0.89]	[0.54]
head sex	-0.009	-0.088	0.077	0.03	0.003	0.066	0.181	0.184	0.181	-0.02	-0.002	-0.04	0.041	0.025	0.057
	[0.33]	[2.41]*	[2.18]*	[0.93]	[0.06]	[1.50]	[7.41]**	[6.36]**	[5.02]**	[1.75]	[0.13]	[2.51]*	[2.19]*	[1.03]	[2.07]*
share children 0-5	-0.318	-0.074	-0.555	0.092	0.107	0.04	-0.33	-0.499	-0.161	0.079	0.15	-0.004	0.018	-0.028	0.077
	[2.88]**	[0.48]	[3.77]**	[0.73]	[0.63]	[0.23]	[3.15]**	[3.68]**	[1.10]	[1.67]	[2.43]*	[0.07]	[0.23]	[0.27]	[0.67]
share children 6-16	-0.014	0.139	-0.214	0.033	0.058	-0.057	0.045	-0.02	0.093	0.077	0.065	0.074	0.028	0.044	0.015
	[0.14]	[1.02]	[1.57]	[0.30]	[0.39]	[0.39]	[0.54]	[0.18]	[0.79]	[1.82]	[1.40]	[1.24]	[0.39]	[0.48]	[0.14]
share people 17-25	-0.019	0.103	-0.18	-0.028	0.111	-0.235	0.108	0.025	0.185	0.019	0.041	-0.02	-0.01	-0.102	0.096
	[0.18]	[0.72]	[1.22]	[0.24]	[0.69]	[1.44]	[1.04]	[0.17]	[1.40]	[0.38]	[0.73]	[0.29]	[0.13]	[1.12]	[0.92]
household size	0.015	-0.005	0.039	0.01	0.004	0.016	0.002	0.003	0.001	-0.001	-0.003	0.001	0.017	0.017	0.018
	[2.06]*	[0.56]	[3.92]**	[1.56]	[0.52]	[2.07]*	[0.39]	[0.47]	[0.17]	[0.59]	[1.54]	[0.44]	[4.57]**	[3.81]**	[3.11]**
not offspring of the head	-0.124	-0.16	-0.084	-0.089	-0.1	-0.088				-0.025	-0.021	-0.026	-0.082	-0.074	-0.091
	[3.52]**	[3.04]**	[1.88]	[2.28]*	[1.86]	[1.65]				[2.52]*	[1.44]	[1.84]	[3.71]**	[2.38]*	[2.90]**
grandchild	-0.011	-0.014	-0.006	-0.029	-0.128	0.09							-0.023	0.008	-0.061
	[0.27]	[0.23]	[0.11]	[0.63]	[2.03]*	[1.41]							[0.79]	[0.23]	[1.34]
log per capita expenditure	0.014	-0.007	0.035	0.135	0.105	0.157	-0.001	-0.013	0.008	0.054	0.053	0.055	0.078	0.068	0.088
	[0.99]	[0.36]	[1.79]	[7.68]**	[4.62]**	[6.16]**	[0.07]	[0.73]	[0.38]	[5.31]**	[4.80]**	[3.74]**	[8.88]**	[6.28]**	[6.72]**
N	2291	1128	1163	3543	1754	1789	3048	1660	1388	5358	2760	2598	7318	3731	3587

Robust z statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.4

Probit model for School Attendance: 14 - 16 years

	Burundi			Burkina Faso			Camaroon			Côte d'Ivoire (1)			Ethiopia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.103			-0.078			-0.098			-0.226			-0.174		
	[2.30]*			[5.89]**			[1.90]			[8.06]**			[7.85]**		
urban	0.257	0.167	0.327	0.261	0.312	0.214	0.032	0.043	0.019	0.142	0.156	0.123	0.417	0.335	0.478
	[5.66]**	[2.62]**	[5.21]**	[11.98]**	[9.88]**	[8.32]**	[0.55]	[0.54]	[0.22]	[4.54]**	[3.57]**	[2.80]**	[17.67]**	[10.37]**	[14.45]**
head illiterate	-0.133	-0.178	-0.097	-0.196	-0.203	-0.179	-0.246	-0.234	-0.264				-0.163	-0.165	-0.156
	[2.79]**	[2.99]**	[1.45]	[8.63]**	[6.37]**	[6.51]**	[3.52]**	[2.72]**	[2.59]**				[5.77]**	[4.31]**	[3.83]**
head never attended										-0.232	-0.215	-0.254			
										[6.81]**	[4.76]**	[5.38]**			
head age	0.005	0.009	0.004	0.007	0.014	0.001	0.03	0.04	0.019	-0.007	-0.007	0.006	-0.017	-0.019	-0.016
	[0.52]	[0.56]	[0.29]	[2.03]*	[2.50]*	[0.20]	[1.94]	[1.98]*	[0.85]	[0.99]	[0.67]	[0.56]	[2.97]**	[2.36]*	[2.12]*
head age^2	-0.003	-0.006	-0.002	-0.007	-0.013	-0.001	-0.024	-0.032	-0.016	0.008	0.007	-0.004	0.017	0.017	0.018
	[0.32]	[0.36]	[0.17]	[2.05]*	[2.45]*	[0.26]	[1.57]	[1.62]	[0.68]	[1.13]	[0.79]	[0.40]	[3.12]**	[2.30]*	[2.48]*
head sex	0.132	0.163	0.108	0.121	0.118	0.102	0.13	0.177	0.067	0.171	0.283	0.11	0.039	-0.003	0.08
	[2.25]*	[2.18]*	[1.29]	[3.87]**	[2.31]*	[2.96]**	[1.97]*	[2.16]*	[0.70]	[4.03]**	[5.26]**	[1.81]	[1.28]	[0.07]	[1.94]
share children 0-5	-0.606	-0.734	-0.386	-0.051	0.115	-0.174	-0.067	0.144	-0.308	-0.296	-0.349	-0.171	-0.174	-0.161	-0.197
	[2.40]*	[2.21]*	[1.12]	[0.64]	[0.98]	[1.73]	[0.26]	[0.43]	[0.77]	[2.12]*	[1.78]	[0.88]	[1.47]	[1.02]	[1.13]
share children 6-16	0.363	0.25	0.529	0.196	0.332	0.089	0.463	0.438	0.387	0.42	0.246	0.619	0.148	0.158	0.156
	[2.23]*	[1.46]	[2.05]*	[2.99]**	[3.37]**	[1.14]	[2.75]**	[1.97]*	[1.55]	[4.08]**	[1.77]	[4.01]**	[1.76]	[1.41]	[1.34]
share people 17-25	0.257	0.253	0.32	0.108	0.267	-0.041	0.385	0.507	0.119	0.28	0.133	0.383	0.125	0.184	0.077
	[1.32]	[1.06]	[1.14]	[1.58]	[2.55]*	[0.51]	[1.76]	[1.81]	[0.38]	[2.36]*	[0.76]	[2.36]*	[1.24]	[1.35]	[0.55]
household size	0.033	0.031	0.029	-0.001	0	-0.002	0.006	0.009	-0.001	0.003	0.008	-0.002	0.015	0.017	0.011
	[2.16]*	[1.66]	[1.35]	[0.31]	[0.16]	[0.88]	[0.85]	[1.07]	[0.06]	[0.82]	[1.79]	[0.32]	[2.16]*	[1.73]	[1.09]
not offspring of the head	-0.024	0.035	-0.053	-0.065	0.196	-0.135	-0.068	-0.011	-0.149	-0.169	-0.012	-0.266	-0.258	-0.283	-0.233
	[0.41]	[0.38]	[0.76]	[1.30]	[1.85]	[3.56]**	[0.94]	[0.12]	[1.24]	[4.82]**	[0.25]	[5.88]**	[8.69]**	[6.72]**	[5.89]**
grandchild				-0.018	0.043	-0.068	-0.017	0.021	-0.072						
				[1.01]	[1.42]	[3.19]**	[0.14]	[0.10]	[0.43]						
log per capita expenditure	0.155	0.185	0.132	0.099	0.106	0.095	0.095	0.038	0.167	0.116	0.158	0.099	0.026	0.011	0.037
	[5.85]**	[5.18]**	[3.78]**	[7.57]**	[4.61]**	[6.92]**	[2.30]*	[0.76]	[2.67]**	[5.08]**	[4.83]**	[3.23]**	[1.15]	[0.33]	[1.16]
N	2506	1183	1323	4201	2184	2017	777	394	383	1730	869	861	6618	3225	3393

Robust z statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.4 (CONT.)

Probit model for School Attendance: 14 - 16 years

	The Gambia			Ghana			Guinea			Kenia			Madagascar		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.171			-0.093			-0.265			-0.02			-0.071		
	[4.86]**			[4.13]**			[9.56]**			[1.55]			[1.89]		
urban	0.04	0.008	0.085	0.037	0.054	0.025	0.393	0.381	0.352	-0.077	-0.007	-0.149	0.087	0.12	0.069
	[0.79]	[0.13]	[1.22]	[1.38]	[1.58]	[0.62]	[9.45]**	[6.95]**	[7.11]**	[2.40]*	[0.19]	[2.97]**	[2.03]*	[2.45]*	[1.07]
head illiterate				-0.161	-0.159	-0.166	0.065	0.12	-0.002	-0.094	-0.08	-0.111	-0.198	-0.208	-0.19
				[5.71]**	[4.47]**	[4.11]**	[1.22]	[1.79]	[0.03]	[5.15]**	[3.61]**	[4.08]**	[3.94]**	[3.23]**	[2.70]**
head never attended	-0.099	-0.102	-0.079												
	[1.91]	[1.57]	[1.07]												
head age	-0.007	-0.009	-0.004	-0.004	-0.005	-0.003	0.001	0.006	-0.005	0.011	0.013	0.008	0.006	0.018	0.006
	[0.85]	[0.82]	[0.41]	[0.73]	[0.62]	[0.30]	[0.10]	[0.44]	[0.58]	[2.55]*	[2.49]*	[1.32]	[0.46]	[0.89]	[0.37]
head age^2	0.006	0.009	0.003	0.005	0.005	0.005	-0.004	-0.009	0.002	-0.008	-0.012	-0.004	-0.007	-0.021	-0.005
	[0.89]	[0.94]	[0.33]	[1.01]	[0.73]	[0.61]	[0.44]	[0.72]	[0.29]	[2.03]*	[2.26]*	[0.77]	[0.56]	[1.01]	[0.32]
head sex	0.088	0.173	-0.006	-0.003	0.033	-0.033	-0.043	-0.089	0.012	-0.022	-0.034	-0.012	-0.078	-0.194	0.015
	[1.57]	[2.34]*	[0.08]	[0.13]	[0.97]	[0.79]	[0.80]	[1.04]	[0.31]	[1.27]	[1.57]	[0.44]	[1.29]	[2.15]*	[0.20]
share children 0-5	0.059	0.195	-0.186	0.019	-0.054	0.06	-0.238	-0.25	-0.158	0.114	0.256	-0.005	0.073	0.344	-0.176
	[0.29]	[0.77]	[0.65]	[0.16]	[0.36]	[0.32]	[1.23]	[0.84]	[1.15]	[1.40]	[2.40]*	[0.04]	[0.33]	[1.16]	[0.59]
share children 6-16	0.365	0.135	0.601	0.164	0.049	0.262	0.12	0.152	0.049	0.294	0.233	0.381	0.259	0.354	0.154
	[2.28]*	[0.64]	[2.69]**	[2.15]*	[0.48]	[2.32]*	[0.89]	[0.74]	[0.52]	[4.96]**	[3.03]**	[4.65]**	[1.89]	[1.95]	[0.81]
share people 17-25	0.18	0.115	0.204	0.045	0.005	0.051	0.386	0.282	0.472	0.275	0.275	0.284	0.246	0.351	0.075
	[0.99]	[0.49]	[0.78]	[0.48]	[0.05]	[0.33]	[2.38]*	[1.13]	[3.95]**	[4.16]**	[3.26]**	[2.87]**	[1.38]	[1.52]	[0.31]
household size	-0.007	-0.007	-0.005	-0.008	-0.001	-0.015	0.012	0.014	0.007	-0.01	-0.007	-0.014	-0.01	-0.035	0.014
	[1.36]	[1.49]	[0.84]	[1.33]	[0.19]	[1.67]	[2.40]*	[2.05]*	[1.70]	[2.09]*	[1.54]	[2.13]*	[0.73]	[2.06]*	[0.82]
not offspring of the head	-0.084	-0.115	-0.029	-0.156	-0.065	-0.23	-0.159	-0.117	-0.155	-0.822	-0.775	-0.844	-0.21	-0.032	-0.344
	[2.19]*	[2.24]*	[0.51]	[4.34]**	[1.46]	[4.27]**	[4.73]**	[2.11]*	[6.63]**	[8.70]**	[6.31]**	[8.22]**	[2.32]*	[0.24]	[3.07]**
grandchild				0.06	0.099	-0.006	-0.048	0.054	-0.089	-0.03	0.025	-0.078	0.179	0.276	0.049
				[1.18]	[1.94]	[0.08]	[0.74]	[0.50]	[1.72]	[1.32]	[0.87]	[2.39]*	[2.20]*	[2.62]**	[0.42]
log per capita expenditure	0.146	0.122	0.17	0.063	0.052	0.075	0.147	0.181	0.096	0.04	0.03	0.048	0.097	0.077	0.121
	[4.36]**	[2.94]**	[3.54]**	[2.85]**	[1.83]	[2.37]*	[5.25]**	[4.43]**	[3.74]**	[3.20]**	[1.91]	[2.66]**	[2.99]**	[1.91]	[2.56]*
N	946	506	440	1864	959	905	1825	1027	798	4195	2174	2021	1344	647	697

Robust z statistics in brackets.

* significant at 5%;

** significant at 1%.

TABLE C.4 (CONT.)

Probit model for School Attendance: 14 - 16 years

	Mozambique			Malawi			Nigeria			Uganda			Zambia		
	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls	Full	Boys	Girls
gender (fem=1)	-0.023			-0.17			-0.05			-0.038			-0.125		
	[1.16]			[6.80]**			[1.88]			[2.48]*			[6.04]**		
urban	-0.005	0.045	-0.051	0.123	0.068	0.178	0.142	0.136	0.127	-0.04	-0.001	-0.079	0.09	0.06	0.121
	[0.12]	[0.87]	[0.95]	[4.03]**	[1.62]	[4.30]**	[4.36]**	[3.34]**	[2.51]*	[1.48]	[0.02]	[2.10]*	[4.35]**	[2.41]*	[3.90]**
head illiterate	-0.133	-0.146	-0.118	-0.209	-0.219	-0.189	-0.235	-0.209	-0.276	-0.087	-0.08	-0.088			
	[5.36]**	[4.62]**	[3.32]**	[6.93]**	[5.27]**	[4.57]**	[7.83]**	[5.60]**	[6.50]**	[4.18]**	[3.28]**	[3.06]**			
head never attended													-0.143	-0.142	-0.135
													[3.56]**	[3.00]**	[2.35]*
head age	-0.001	0.007	-0.007	0.008	0.013	0.002	0.005	-0.001	0.009	-0.005	-0.003	-0.009	0.003	-0.003	0.009
	[0.09]	[0.92]	[0.91]	[1.07]	[1.25]	[0.20]	[1.50]	[0.13]	[1.45]	[1.96]*	[0.81]	[2.29]*	[0.46]	[0.41]	[1.19]
head age^2	0	-0.007	0.006	-0.007	-0.011	-0.003	-0.001	0.002	-0.001	0.006	0.003	0.009	-0.002	0.002	-0.008
	[0.01]	[0.97]	[0.77]	[0.94]	[1.07]	[0.33]	[0.18]	[0.60]	[0.19]	[2.10]*	[1.05]	[2.21]*	[0.38]	[0.35]	[0.99]
head sex	-0.011	-0.001	-0.025	0.022	0	0.044	0.195	0.158	0.244	-0.079	-0.097	-0.065	0.064	0.049	0.077
	[0.39]	[0.02]	[0.67]	[0.61]	[0.00]	[0.92]	[6.89]**	[4.73]**	[5.36]**	[3.64]**	[3.43]**	[2.38]*	[2.24]*	[1.31]	[2.02]*
share children 0-5	-0.116	0.132	-0.359	0.182	0.511	-0.259	-0.261	-0.161	-0.364	-0.049	0.059	-0.138	-0.046	0.126	-0.222
	[0.98]	[0.86]	[2.24]*	[1.41]	[2.95]**	[1.41]	[2.09]*	[1.02]	[1.95]	[0.62]	[0.54]	[1.31]	[0.38]	[0.95]	[1.20]
share children 6-16	0.031	0.098	-0.029	0.267	0.282	0.255	0.325	0.234	0.397	0.185	0.185	0.202	0.184	0.147	0.233
	[0.40]	[0.97]	[0.27]	[2.92]**	[2.37]*	[1.96]	[4.51]**	[2.56]*	[3.84]**	[3.47]**	[2.60]**	[2.70]**	[2.07]*	[1.59]	[1.68]
share people 17-25	0.231	0.227	0.249	0.071	0.099	0.054	0.155	0.058	0.273	0.104	0.171	0.044	0.085	0.123	0.037
	[2.31]*	[1.78]	[1.83]	[0.62]	[0.65]	[0.34]	[1.47]	[0.41]	[1.78]	[1.24]	[1.56]	[0.42]	[0.87]	[1.10]	[0.25]
household size	-0.001	-0.009	0.007	0.004	-0.003	0.012	0.001	-0.004	0.006	0	-0.006	0.006	0.01	0.013	0.007
	[0.14]	[0.99]	[0.73]	[0.65]	[0.35]	[1.56]	[0.24]	[0.69]	[0.67]	[0.03]	[1.58]	[1.65]	[2.55]*	[2.56]*	[1.22]
not offspring of the head	-0.277	-0.253	-0.291	-0.173	-0.154	-0.201				-0.09	-0.067	-0.119	-0.099	-0.114	-0.075
	[7.39]**	[5.10]**	[5.55]**	[4.83]**	[2.99]**	[4.37]**				[4.51]**	[2.70]**	[4.11]**	[3.45]**	[2.86]**	[1.90]
grandchild	-0.006	-0.062	0.065	0.054	-0.053	0.185							0.009	0.001	0.019
	[0.13]	[1.02]	[1.06]	[0.98]	[0.78]	[2.31]*							[0.23]	[0.02]	[0.32]
log per capita expenditure	0.008	0.011	0.009	0.1	0.076	0.125	-0.002	0.024	-0.044	0.069	0.054	0.091	0.104	0.091	0.117
	[0.47]	[0.51]	[0.42]	[5.54]**	[3.07]**	[4.77]**	[0.09]	[1.06]	[1.63]	[4.38]**	[2.68]**	[4.21]**	[9.45]**	[6.78]**	[7.08]**
N	2166	1126	1040	3098	1698	1400	2930	1622	1308	4567	2348	2219	7514	3759	3755

Robust *z* statistics in brackets.

* significant at 5%;

** significant at 1%.

D – SIMULATION RESULTS ON SCHOOL ATTENDANCE

TABLE D.1

Impact of cash transfer on School Attendance (5-10 years)

	0.5% of GDP									20% Poverty line			30% Poverty line			40% Poverty line		
	UNIVERSAL			TARGET THE POOR			TARGET RURAL			UNIVERSAL			TARGET THE POOR			TARGET RURAL		
country	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
bdi	0.15%	0.15%	0.15%	0.20%	0.20%	0.20%	0.16%	0.15%	0.16%	1.30%	1.26%	1.30%	1.87%	1.81%	1.89%	2.42%	2.32%	2.44%
bfa	0.13%	0.15%	0.11%	0.16%	0.19%	0.14%	0.13%	0.15%	0.11%	0.54%	0.63%	0.45%	0.80%	0.92%	0.67%	1.05%	1.21%	0.88%
civ	0.34%	0.35%	0.33%	0.51%	0.53%	0.49%	0.39%	0.41%	0.38%	0.91%	0.93%	0.89%	1.34%	1.37%	1.30%	1.75%	1.79%	1.70%
civ1	0.29%	0.30%	0.28%	0.45%	0.46%	0.43%	0.34%	0.36%	0.33%	0.79%	0.82%	0.77%	1.16%	1.20%	1.13%	1.52%	1.56%	1.47%
cmr	0.16%	0.16%	0.17%	0.20%	0.20%	0.22%	0.17%	0.18%	0.19%	0.49%	0.50%	0.52%	0.70%	0.72%	0.74%	0.92%	0.93%	0.98%
Eth	0.06%	0.07%	0.05%	0.08%	0.09%	0.07%	0.06%	0.07%	0.05%	0.47%	0.54%	0.40%	0.70%	0.80%	0.59%	0.92%	1.05%	0.77%
gha	0.12%	0.14%	0.10%	0.19%	0.23%	0.16%	0.15%	0.18%	0.12%	0.60%	0.70%	0.51%	0.87%	1.01%	0.74%	1.12%	1.30%	0.96%
gin	0.15%	0.14%	0.15%	0.19%	0.20%	0.17%	0.15%	0.16%	0.13%	0.70%	0.68%	0.70%	1.04%	1.00%	1.05%	1.38%	1.32%	1.39%
gmb	0.12%	0.13%	0.11%	0.16%	0.16%	0.15%	0.16%	0.16%	0.15%	0.64%	0.66%	0.61%	0.93%	0.96%	0.89%	1.19%	1.24%	1.15%
ken	0.16%	0.16%	0.16%	0.23%	0.23%	0.23%	0.17%	0.17%	0.17%	0.69%	0.68%	0.69%	1.00%	0.98%	1.00%	1.29%	1.26%	1.29%
mdg	0.27%	0.31%	0.23%	0.34%	0.39%	0.30%	0.29%	0.33%	0.25%	0.71%	0.81%	0.62%	1.02%	1.16%	0.89%	1.30%	1.47%	1.13%
Moz	0.15%	0.17%	0.14%	0.19%	0.20%	0.17%	0.16%	0.17%	0.15%	1.05%	1.13%	0.96%	1.53%	1.64%	1.40%	1.98%	2.12%	1.82%
Mwi	0.05%	0.10%	0.00%	0.06%	0.13%	0.00%	0.05%	0.10%	0.00%	0.30%	0.60%	0.01%	0.43%	0.87%	0.00%	0.55%	1.11%	0.00%
Nga	-0.04%	0.03%	-0.14%	-0.07%	0.02%	-0.19%	-0.05%	0.02%	-0.14%	-0.14%	0.11%	-0.47%	-0.16%	0.20%	-0.61%	-0.38%	0.05%	-0.93%
Uga	0.25%	0.20%	0.30%	0.39%	0.31%	0.48%	0.28%	0.24%	0.33%	1.17%	0.98%	1.38%	1.72%	1.41%	2.04%	2.18%	1.84%	2.52%
Zmb	0.30%	0.28%	0.32%	0.39%	0.37%	0.41%	0.36%	0.34%	0.38%	1.36%	1.28%	1.44%	1.93%	1.82%	2.06%	2.46%	2.32%	2.63%

TABLE D.2

Impact of cash transfer on School Attendance (11-13 years)

	0.5% of GDP									20% Poverty line			30% Poverty line			40% Poverty line		
	UNIVERSAL			TARGET THE POOR			TARGET RURAL			UNIVERSAL			TARGET THE POOR			TARGET RURAL		
country	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
bdi	0.22%	0.23%	0.21%	0.29%	0.30%	0.28%	0.23%	0.23%	0.22%	0.77%	0.79%	0.73%	1.11%	1.15%	1.06%	1.44%	1.48%	1.36%
bfa	0.21%	0.21%	0.20%	0.27%	0.29%	0.25%	0.22%	0.23%	0.20%	0.35%	0.36%	0.34%	0.53%	0.53%	0.50%	0.70%	0.70%	0.67%
civ	0.43%	0.58%	0.31%	0.70%	1.01%	0.46%	0.54%	0.78%	0.36%	0.52%	0.69%	0.37%	0.77%	1.02%	0.55%	1.01%	1.34%	0.73%
civ1	0.37%	0.50%	0.28%	0.60%	0.87%	0.41%	0.46%	0.67%	0.31%	0.45%	0.60%	0.33%	0.66%	0.88%	0.49%	0.87%	1.16%	0.65%
cmr	0.29%	0.24%	0.35%	0.39%	0.32%	0.46%	0.34%	0.28%	0.39%	0.41%	0.34%	0.48%	0.59%	0.49%	0.70%	0.77%	0.64%	0.91%
Eth	0.10%	0.12%	0.09%	0.14%	0.17%	0.12%	0.11%	0.13%	0.09%	0.34%	0.40%	0.30%	0.50%	0.59%	0.44%	0.66%	0.77%	0.59%
gha	0.09%	0.07%	0.12%	0.15%	0.12%	0.21%	0.12%	0.09%	0.15%	0.22%	0.17%	0.30%	0.32%	0.25%	0.44%	0.42%	0.32%	0.57%
gin	0.27%	0.30%	0.23%	0.36%	0.43%	0.27%	0.29%	0.36%	0.20%	0.43%	0.48%	0.37%	0.63%	0.71%	0.55%	0.84%	0.94%	0.73%
gmb	0.00%	-0.05%	0.06%	0.01%	-0.07%	0.08%	0.01%	-0.07%	0.08%	0.01%	-0.10%	0.12%	0.02%	-0.15%	0.19%	0.02%	-0.20%	0.24%
ken	0.02%	0.01%	0.04%	0.03%	0.01%	0.06%	0.02%	0.01%	0.04%	0.04%	0.01%	0.09%	0.06%	0.02%	0.12%	0.07%	0.03%	0.16%
mdg	0.15%	0.26%	0.03%	0.19%	0.34%	0.04%	0.17%	0.30%	0.04%	0.17%	0.30%	0.04%	0.25%	0.44%	0.06%	0.32%	0.57%	0.07%
moz	0.31%	0.26%	0.34%	0.39%	0.33%	0.42%	0.34%	0.29%	0.36%	0.90%	0.74%	0.99%	1.31%	1.09%	1.45%	1.71%	1.41%	1.89%
mwi	0.04%	-0.02%	0.09%	0.05%	-0.02%	0.11%	0.04%	-0.02%	0.09%	0.11%	-0.05%	0.25%	0.15%	-0.09%	0.37%	0.19%	-0.12%	0.48%
nga	-0.01%	-0.08%	0.05%	-0.06%	-0.13%	-0.04%	-0.01%	-0.07%	0.05%	-0.04%	-0.14%	0.03%	0.01%	-0.20%	0.16%	-0.02%	-0.26%	0.23%
uga	0.20%	0.22%	0.20%	0.34%	0.37%	0.32%	0.22%	0.24%	0.21%	0.39%	0.41%	0.38%	0.59%	0.63%	0.56%	0.74%	0.77%	0.73%
zmb	0.43%	0.38%	0.47%	0.57%	0.51%	0.62%	0.54%	0.50%	0.58%	0.86%	0.77%	0.94%	1.21%	1.09%	1.33%	1.54%	1.38%	1.68%

TABLE D.3

Impact of cash transfer on School Attendance (14-16 years)

	0.5% of GDP									20% Poverty line			30% Poverty line			40% Poverty line		
	UNIVERSAL			TARGET THE POOR			TARGET RURAL			UNIVERSAL			TARGET THE POOR			TARGET RURAL		
country	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
bdi	0.27%	0.32%	0.24%	0.36%	0.43%	0.31%	0.28%	0.33%	0.24%	0.94%	1.11%	0.81%	1.38%	1.63%	1.19%	1.80%	2.12%	1.55%
bfa	0.20%	0.21%	0.19%	0.25%	0.27%	0.22%	0.19%	0.21%	0.18%	0.29%	0.30%	0.27%	0.42%	0.45%	0.41%	0.56%	0.60%	0.54%
civ	0.38%	0.54%	0.31%	0.58%	0.92%	0.41%	0.42%	0.69%	0.29%	0.41%	0.59%	0.34%	0.61%	0.87%	0.51%	0.81%	1.14%	0.67%
civ1	0.32%	0.48%	0.24%	0.49%	0.82%	0.32%	0.35%	0.61%	0.22%	0.35%	0.53%	0.26%	0.51%	0.78%	0.39%	0.68%	1.03%	0.52%
cmr	0.37%	0.14%	0.66%	0.50%	0.19%	0.88%	0.43%	0.16%	0.75%	0.46%	0.17%	0.82%	0.67%	0.26%	1.20%	0.88%	0.33%	1.57%
Eth	0.03%	0.01%	0.04%	0.04%	0.02%	0.05%	0.03%	0.01%	0.04%	0.10%	0.04%	0.13%	0.14%	0.06%	0.19%	0.19%	0.08%	0.25%
gha	0.15%	0.13%	0.17%	0.23%	0.23%	0.24%	0.18%	0.18%	0.19%	0.30%	0.28%	0.34%	0.45%	0.41%	0.50%	0.59%	0.53%	0.66%
gin	0.24%	0.33%	0.15%	0.32%	0.47%	0.16%	0.24%	0.36%	0.10%	0.31%	0.42%	0.19%	0.46%	0.62%	0.29%	0.61%	0.82%	0.38%
gmb	0.34%	0.29%	0.39%	0.44%	0.39%	0.48%	0.44%	0.39%	0.48%	0.64%	0.54%	0.73%	0.94%	0.80%	1.08%	1.21%	1.05%	1.40%
ken	0.11%	0.09%	0.13%	0.16%	0.13%	0.18%	0.12%	0.10%	0.14%	0.22%	0.17%	0.25%	0.32%	0.25%	0.37%	0.42%	0.33%	0.48%
mdg	0.49%	0.38%	0.60%	0.61%	0.48%	0.76%	0.52%	0.42%	0.62%	0.55%	0.43%	0.68%	0.81%	0.63%	1.00%	1.06%	0.82%	1.31%
moz	0.25%	0.20%	0.28%	0.31%	0.26%	0.34%	0.27%	0.23%	0.30%	0.64%	0.52%	0.72%	0.93%	0.76%	1.05%	1.21%	0.99%	1.37%
mwi	0.02%	0.03%	0.02%	0.02%	0.04%	0.03%	0.02%	0.03%	0.02%	0.05%	0.08%	0.06%	0.08%	0.12%	0.09%	0.10%	0.15%	0.11%
nga	-0.01%	0.17%	-0.25%	0.05%	0.21%	-0.20%	0.04%	0.21%	-0.15%	-0.02%	0.20%	-0.33%	0.03%	0.31%	-0.29%	0.11%	0.43%	-0.34%
uga	0.21%	0.17%	0.27%	0.33%	0.26%	0.42%	0.24%	0.18%	0.32%	0.37%	0.26%	0.51%	0.57%	0.44%	0.76%	0.72%	0.53%	0.96%
zmb	0.45%	0.44%	0.45%	0.60%	0.60%	0.60%	0.57%	0.57%	0.56%	0.94%	0.92%	0.96%	1.34%	1.31%	1.39%	1.72%	1.67%	1.78%

5-16 years

TABLE D.4

Impact of cash transfer on School Attendance (5-16 years)

	1.5% of GDP									20% Poverty line			30% Poverty line			40% Poverty line		
	UNIVERSAL			TARGET THE POOR			TARGET RURAL			UNIVERSAL			TARGET THE POOR			TARGET RURAL		
Country	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
Bdi	0.41%	0.43%	0.38%	0.53%	0.57%	0.49%	0.42%	0.44%	0.39%	2.00%	2.10%	1.87%	2.84%	2.98%	2.66%	3.62%	3.79%	3.39%
Bfa	0.35%	0.39%	0.31%	0.45%	0.51%	0.38%	0.36%	0.41%	0.31%	0.84%	0.93%	0.74%	1.23%	1.36%	1.08%	1.61%	1.78%	1.42%
Civ	0.75%	0.88%	0.65%	1.15%	1.41%	0.96%	0.88%	1.09%	0.73%	1.26%	1.48%	1.10%	1.83%	2.15%	1.60%	2.37%	2.78%	2.07%
civ1	0.64%	0.77%	0.55%	0.99%	1.23%	0.81%	0.75%	0.95%	0.62%	1.08%	1.30%	0.93%	1.57%	1.89%	1.36%	2.04%	2.44%	1.76%
Cmr	0.46%	0.34%	0.60%	0.59%	0.44%	0.78%	0.52%	0.39%	0.68%	0.87%	0.64%	1.16%	1.23%	0.91%	1.64%	1.58%	1.17%	2.11%
Eth	0.13%	0.14%	0.12%	0.18%	0.19%	0.15%	0.14%	0.15%	0.12%	0.64%	0.68%	0.58%	0.93%	0.99%	0.84%	1.21%	1.29%	1.10%
gha	0.22%	0.24%	0.22%	0.37%	0.40%	0.34%	0.28%	0.31%	0.27%	0.72%	0.75%	0.70%	1.03%	1.07%	1.00%	1.31%	1.37%	1.28%
gin	0.40%	0.41%	0.37%	0.52%	0.58%	0.43%	0.40%	0.45%	0.32%	0.99%	1.03%	0.92%	1.46%	1.51%	1.36%	1.91%	1.98%	1.79%
gmb	0.30%	0.25%	0.35%	0.38%	0.32%	0.44%	0.38%	0.31%	0.43%	0.89%	0.73%	1.05%	1.29%	1.05%	1.51%	1.64%	1.34%	1.92%
ken	0.24%	0.22%	0.26%	0.34%	0.32%	0.37%	0.26%	0.24%	0.27%	0.65%	0.60%	0.69%	0.93%	0.86%	0.99%	1.19%	1.10%	1.26%
mdg	0.54%	0.58%	0.52%	0.69%	0.75%	0.65%	0.59%	0.65%	0.55%	0.88%	0.94%	0.84%	1.25%	1.33%	1.20%	1.59%	1.69%	1.52%
moz	0.39%	0.39%	0.39%	0.49%	0.48%	0.48%	0.42%	0.42%	0.41%	1.59%	1.53%	1.60%	2.27%	2.19%	2.31%	2.91%	2.80%	2.96%
mwi	0.08%	0.10%	0.06%	0.11%	0.14%	0.08%	0.09%	0.11%	0.06%	0.32%	0.41%	0.24%	0.45%	0.57%	0.33%	0.57%	0.73%	0.42%
nga	-0.08%	0.04%	-0.23%	-0.12%	0.03%	-0.31%	-0.07%	0.03%	-0.19%	-0.17%	0.04%	-0.47%	-0.17%	0.07%	-0.48%	-0.31%	-0.06%	-0.63%
uga	0.47%	0.41%	0.54%	0.74%	0.63%	0.85%	0.53%	0.47%	0.60%	1.30%	1.12%	1.50%	1.90%	1.64%	2.17%	2.36%	2.06%	2.68%
zmb	0.69%	0.65%	0.73%	0.90%	0.85%	0.94%	0.83%	0.80%	0.87%	1.92%	1.82%	2.03%	2.68%	2.53%	2.84%	3.36%	3.16%	3.56%

TABLE D.5

Impact of cash transfer in School Attendance (5-16 years)

	0.5% of GDP									20% Poverty line (with 5% inc. by age)		
	UNIVERSAL			TARGET THE POOR			TARGET RURAL			UNIVERSAL		
country	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
bdi	0.14%	0.15%	0.13%	0.18%	0.20%	0.17%	0.14%	0.15%	0.13%	2.44%	2.56%	2.28%
bfa	0.12%	0.13%	0.10%	0.15%	0.17%	0.13%	0.12%	0.14%	0.10%	1.04%	1.15%	0.91%
civ	0.26%	0.31%	0.23%	0.42%	0.51%	0.35%	0.31%	0.38%	0.26%	1.55%	1.83%	1.35%
civ1	0.22%	0.27%	0.19%	0.36%	0.45%	0.30%	0.27%	0.34%	0.22%	1.33%	1.60%	1.15%
cmr	0.16%	0.12%	0.21%	0.21%	0.15%	0.28%	0.18%	0.13%	0.24%	1.06%	0.78%	1.41%
Eth	0.04%	0.05%	0.04%	0.06%	0.07%	0.05%	0.05%	0.05%	0.04%	0.79%	0.84%	0.72%
gha	0.08%	0.08%	0.08%	0.13%	0.14%	0.12%	0.10%	0.11%	0.09%	0.88%	0.92%	0.85%
gin	0.13%	0.14%	0.12%	0.18%	0.20%	0.14%	0.13%	0.15%	0.10%	1.21%	1.26%	1.13%
gmb	0.10%	0.08%	0.12%	0.13%	0.11%	0.15%	0.13%	0.11%	0.15%	1.09%	0.89%	1.28%
ken	0.08%	0.08%	0.09%	0.12%	0.11%	0.13%	0.09%	0.08%	0.09%	0.80%	0.75%	0.85%
Mdg	0.19%	0.20%	0.18%	0.25%	0.27%	0.24%	0.21%	0.23%	0.19%	1.08%	1.16%	1.03%
Moz	0.14%	0.13%	0.14%	0.17%	0.16%	0.17%	0.14%	0.14%	0.14%	1.94%	1.88%	1.96%
Mwi	0.03%	0.04%	0.02%	0.04%	0.05%	0.03%	0.03%	0.04%	0.02%	0.39%	0.50%	0.29%
Nga	-0.03%	0.02%	-0.08%	-0.04%	0.01%	-0.11%	-0.03%	0.01%	-0.07%	-0.22%	0.04%	-0.55%
Uga	0.16%	0.14%	0.19%	0.26%	0.22%	0.30%	0.19%	0.16%	0.21%	1.60%	1.37%	1.84%
Zmb	0.25%	0.23%	0.26%	0.33%	0.31%	0.34%	0.31%	0.30%	0.32%	2.33%	2.20%	2.47%

TABLE D.6

Impact of cash transfer in School Attendance (5-16 years)

0.5% of GDP with 5% increase by age									
	UNIVERSAL			TARGET THE POOR			TARGET RURAL		
country	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls
bdi	0.14%	0.15%	0.13%	0.18%	0.20%	0.17%	0.14%	0.15%	0.13%
bfa	0.12%	0.13%	0.10%	0.15%	0.17%	0.13%	0.12%	0.14%	0.10%
civ	0.26%	0.31%	0.23%	0.42%	0.51%	0.35%	0.31%	0.38%	0.26%
civ1	0.22%	0.27%	0.19%	0.36%	0.45%	0.30%	0.27%	0.34%	0.22%
cmr	0.16%	0.12%	0.21%	0.21%	0.16%	0.28%	0.18%	0.14%	0.24%
Eth	0.04%	0.05%	0.04%	0.06%	0.07%	0.05%	0.05%	0.05%	0.04%
gha	0.08%	0.08%	0.08%	0.13%	0.14%	0.12%	0.10%	0.11%	0.09%
gin	0.13%	0.14%	0.12%	0.18%	0.20%	0.14%	0.13%	0.15%	0.10%
gmb	0.10%	0.08%	0.12%	0.13%	0.11%	0.15%	0.13%	0.11%	0.15%
ken	0.08%	0.08%	0.09%	0.12%	0.11%	0.13%	0.09%	0.08%	0.09%
mdg	0.19%	0.20%	0.18%	0.25%	0.27%	0.24%	0.21%	0.23%	0.19%
moz	0.14%	0.13%	0.14%	0.17%	0.17%	0.17%	0.15%	0.14%	0.14%
mwi	0.03%	0.04%	0.02%	0.04%	0.05%	0.03%	0.03%	0.04%	0.02%
nga	-0.03%	0.02%	-0.08%	-0.04%	0.01%	-0.11%	-0.03%	0.01%	-0.07%
uga	0.16%	0.14%	0.19%	0.26%	0.22%	0.31%	0.19%	0.16%	0.21%
zmb	0.25%	0.23%	0.26%	0.33%	0.31%	0.34%	0.31%	0.30%	0.32%

REFERENCES

Ayala, C. (2003) Workshop on Conditional Cash Transfer Proframs (CCTs): Operational Experiences. Final Report (Quito, Ecuador, 29 April-1 May, 2003)

Bennel, Paul (2002) "Hitting the Target: Doubling Primary School Enrolment in Sub-Saharan Africa by 2015" World Development Vol. 30 N. 7, pp. 1179-1194.

Bourguignon, F., F. Ferreira, and P. Leite (2002) Ex-ante Evaluation of Conditional Cash Transfer Programs: the Case of Bolsa Escola, Washington DC: World Bank.

Britto, T. (2004) 'CCT: Why have they become so prominent in recent poverty reduction strategies in Latin America' Working paper series No. 390, Institute of Social Studies, The Netherlands.

Caldés, N., Coady, D., and Maluccio, J. A. (2004) "The Cost of Poverty Alleviation Transfer Programs: A Comparative Analysis of Three Programs in Latin America" FCND Discussion Paper No. 174. Mimeo. IFPRI.

Cardoso, Eliana and Souza, P. Andre (2003) The Impact of Cash Transfers on Child Labor and School Attendance in Brazil. Mimeo.

CEPAL-UN Economic Commission for Latin America and the Caribbean (1998) Panorama Social de America Latina 1997-1998, Santiago, Chile: CEPAL

CEPAL-UN Economic Commission for Latin America and the Caribbean (2002) Panorama Social de America Latina 2001-2002, Santiago, Chile: CEPAL

Coady, D., M. Grosh, and J. Hoddinott (2002) 'The Targeting of Transfers in Developing Countries: Review of Experiences and Lessons'. Social Safety Net Primer Series. Washington, DC: World Bank

Coady, D. (2002) Social Safety Nets, Human Capital and the Poor: Evidence from Recent Program Evaluations. Paper prepared for ADB/IDB workshop on Social Protection fro the Poor in Asia and Latin America: Concepts and Experiences, Manila, Philippines, October.

Coady, D. (2003) Alleviating Structural Poverty in Developing Countries: The Approach of Progresa in Mexico. Background paper for the World Development Report 2004. Washington, DC: World Bank.

Coady, D., R. Perez, and H. Vera-Llamas (2000) A Cost Analysis of Progresa. In Application of Social Cost-Benefit Analysis to the Evaluation of Progresa, ed. David P. Coady. Project final report. Washington: IFPRI

Deolalikar, A. B. (1997) "The Determinants of Primary School Enrolment and Household Schooling Expenditures in Kenya: Do They vary by Income?" University of Washington. Mimeo.

Dreze, J. and A. Sen (1991) 'Public Action for Social Security: Foundations and Strategy', in: E. Ahmad, J. Dreze, J. Hills, and A. Sen (ed) Social Security in Developing Countries, pp. 3-32, Oxford, UK: Clarendon Press

Foster, J., J. Greer, and E. Thorbecke (1984) A Class of Decomposable Poverty Measures, Econometrica 52, 761-765

Glick, P. and Sahn, D. E. (2000) "Schooling of girls and boys in a West African country: the effects of parental education, income, and household structure", Economics of Education Review Vol. 19, pp. 63-87.

Guerrero, S. and G. Ana (2001) 'School Attendance in Rural Mexico: an Evaluation of the Progresa program' Master of Arts Research paper. Institute of Social Studies, The Netherlands.

IDB-Inter-American Development Bank (2003) Annual Report 2002, Washington, DC: IDB.

IFPRI-International Food Policy Research Institute (2002) Sistema de Evaluacion de la Fase Pilote de la Red de Proteccion Social de Nicaragua: Evaluacion del Impacto. Final Report. Washington: IFPRI

Kakwani, N. and H. H. Son (2005) 'On Assessing Pro-Poorness of Government Programmes: International Comparisons' unpublished mimeo, Brazil: International Poverty Centre

Kakwani, N. and K. Subbarao (2005) 'Ageing and Poverty in Africa and the Role of Social Pensions' Unpublished mimeo, Brazil: International Poverty Centre: UNDP

Lloyd, C. B. and Blanc, A. K. (1996) "Children's Schooling in sub-Saharan Africa: The Role of Fathers, Mothers, and Others", Population and Development Review Vol. 22 No. 2, pp. 265-298.

Morley, S. A. and D. Coady (2003) From Social Assistance to Social development: Targeted Education Subsidies in Developing Countries, Washington, DC: IFPRI

Rawlings, L. B. (2004) "A New Approach to Social Assistance: Latin America's Experience with Conditional Cash Transfer Programs", Social Protection Discussion Paper Series No. 0416. Mimeo. The World Bank.

Sahn, D. and D. Stifel (2002) Progress Toward the MDGs in Africa. Department of Economics, Cornell University, NY.

Sedlacek, G., Nadeem I. and Gustafsson-Wright E. (2000) Targeted Conditional Transfer Programs in Latin America: an Early Survey, Washington, DC: World Bank.

Shapiro, D. and Tambashe, B. O. (2001) "Gender, poverty, family structure, and investments in children's education in Kinshasa, Congo." Economics of Education Review Vol.20 pp.359-375.

Skoufias, E., B. Davis and S. Vega (2001) 'Targeting the Poor: an Evaluation of the Selection of Households into Progresa' in: World Development 29(10), pp. 1769-1784.

Skoufias, E., B and McClafferty, Bonnie (2001) "Is Progresa Working? Summary of the Results of an Evaluation by IFPRI" FCND Discussion Paper N. 118. Mimeo.

NOTES

1. Bourguignon et al (2002) find similar results in their ex-ante simulation of the impact of Bolsa Escola in Brazil.
2. Like Progressa, the CCT programme in Honduras and Nicaragua had education and health components.
3. For more details on these programmes see Caldés et al. (2004).
4. Bennel (2002) shows that the overall target of doubling primary school enrolment in SSA between 1998-2015 would require a rate of growth (of enrolment) of 3.5% per year, which is marginally lower than the rate observed during 1990-98 for the region as whole. Nevertheless, he points out that despite all this progress, 60% of children in SSA are still functionally illiterate when they leave school. This is due to poor quality of teaching, and therefore, it quite unlikely that in such environment a simple increase in supply without a boost in quality would make household demand for education increase alongside the supply.
5. The household survey information for Guinea is from 1994.
6. For a detailed discussion, see Appendix.
7. Figure 6.1 depicts the weighted average of children (in the 15 countries) not attending school at each year of age.
8. For instance, the PPP indices under perfect targeting are 6.77 and 2.86 for Thailand and Vietnam, respectively. See Kakwani and Son (2005) for a detailed discussion on this.
9. We assume that income is completely pooled so that the source of income does not matter for its allocation.
10. Even in the case when there is no remunerated child labour, w represents the implicit prices of time determined by their contribution to the home production technology. It is the implicit price of domestic chores or unpaid child labour.
11. The probit model was estimated using Stata 8 software with the option cluster equal to the household identifier so that we could take into account the effect of having children from the same household in the sample when estimating the standard errors. The option weight was also used with the sample weights provided in the data set.
12. This is due to one of the main features of the probit model. Marginal changes in one of the explanatory variables are not a function only of the estimate parameters. Actually it is a function of the estimated index $(X\hat{b})$, where X is the vector of explanatory variables and $\hat{b}$ is the vector of estimated probit parameters; which implies that the marginal effect varies with the level of all explanatory variables. The marginal effect is measured as $f(X\hat{b})\hat{b}$ where f is the standard normal density function. Therefore, the impact of a 10% increase in the per capita income of a household does not have a uniform effect regardless of the level of other variables such as the gender of the children and/or the literacy status of the head of the household. For this reason, the simulation exercises would be more informative using counterfactuals than looking at the marginal effects. Note however, that the marginal effect will always have the same sign as the estimated coefficient because $f(Xb)$ is always positive. For this reason it can give us an idea of the direction of the impact.
13. For some countries such as Zambia and the Gambia this variable is not available. We use the information on whether the head of the household has ever (never) attended to school as a proxy for literacy (illiteracy).
14. As in most cases the interactions were found to be not significant, we ran the simulations with the parsimonious model. Results of the interactions are available from authors upon request.
15. Note that for Cameroon the negative marginal effect (-4.5%) is significant at 10% level of significance.
16. Actually girls in urban areas of Uganda are less likely to attend at school than their rural counterpart. Another difference refers to girls in Ghana and Madagascar where there is no difference between the rural and urban attendance rates. See Tables in the appendix B.
17. Actually in Burundi, Burkina Faso, Côte d'Ivoire and The Gambia female headship matters much more for boys than for girls, in which case there is no much difference. The idea that husbands would prefer to invest in boy's education does not seem to hold in general and, in particular, for those four countries.
18. Only in Cameroon, Malawi and Zambia was there no evidence of attendance discrimination for children who were not offspring of the head. Note that in the case of Nigeria we have no information on the relationship between the child and the head of the household.
19. Surprisingly, there is some positive and significant impact for Madagascar. Similarly, in the case of boys in Burkina Faso there is a positive and statistically significant impact on school attendance.
20. A deviant result is the negative and significant impact found for Ethiopia, which is entirely due to the effect on boys.
21. Again Ethiopia displays a surprising significant and negative impact.
22 Note, however, that in Kenya and Madagascar the share of children of school age and young adults has strong positive effects on attendance, which can weaken any positive effect of economies of scale as measured by the household size.
23. For this reason when we simulate the counterfactual with cash transfer for Nigeria, it will show a negative impact of the transfer on school attendance.
24. Côte d'Ivoire is a special case because we have two specifications for this country. This is due to the fact that the information on literacy of the head is missing for 2% of the sample. Because of this high rate of non-response we also estimate a model that uses the information on whether the head of the household ever attended school as a proxy.
25. Results for this scenario are in the appendix.
26. For some countries the highest impact occurs for the group 5-10 such as Kenya, Uganda and Malawi or for the age group 11-13 such as Burkina Faso, Côte d'Ivoire, Ethiopia, Guinea and Mozambique.

International Poverty Centre
SBS – Ed. BNDES,10º andar
70076 900 Brasilia DF
Brazil

povertycentre@undp-povertycentre.org
www.undp.org/povertycentre
Telephone +55 61 2105 5000
Fax +55 61 2105 5001