



Understanding Children's Work
An Inter-Agency Research Cooperation Project

Promoting school enrolment,
attendance and retention among
disadvantaged children in Yemen: the
potential of conditional cash transfers

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As part of broader efforts toward durable solutions to child labor, the International Labour Organization (ILO), the United Nations Children's Fund (UNICEF), and the World Bank initiated the interagency Understanding Children's Work (UCW) project in December 2000. The project is guided by the Oslo Agenda for Action, which laid out the priorities for the international community in the fight against child labor. Through a variety of data collection, research, and assessment activities, the UCW project is broadly directed toward improving understanding of child labor, its causes and effects, how it can be measured, and effective policies for addressing it. For further information, see the project website at www.ucw-project.org.

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ABSTRACT

School attendance incentive schemes essentially compensate families for the direct and indirect costs associated with children attending school rather than working. The primary benefit of these programs is their ability to tie together short-run assistance and long-run human capital formation to fight the intergenerational transfer of poverty. The current study presents a set of simulations designed to assess the likely impact of an incentive scheme based on cash transfers on school attendance in Yemen. The simulation results suggest that cash transfers targeted to poor households could lead to a large rise in school enrolment at the basic level, particularly in governorates where attendance is lowest. The results are however subject to several technical limitations relating to the nature of the data. Nonetheless, they indicate that a further, more in-depth assessment of the potential of cash transfer schemes in the Yemeni context is warranted.

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1. INTRODUCTION

1. Yemen faces a large continued challenge in expanding access to schooling, despite progress in recent years. Enrolment increased by around 30 percent in basic education during the 1995-2000 period, but the fact that over two million basic school-aged children remain out of school, and that only 17 percent of the population aged 10 and above have completed six years of basic education, underscores the distance Yemen must travel to achieve Education For All (EFA).

2. This study looks at school attendance incentive schemes as one possible instrument for helping Yemen move along the path to EFA. These schemes essentially compensate families for the direct and indirect costs associated with children attending school rather than working. The primary benefit of these programs is their ability to tie together short-run assistance and long-run human capital formation to fight the intergenerational transfer of poverty. The results of a series of simulations are presented designed to assess the impact of a monthly cash transfer to poor households on school attendance.

3. The paper is structured as follows. Section 2 provides the strategic context, looking specifically at education sector reform efforts and the characteristics of the out-of-school child population. Section 3 reviews international policy experience in providing incentives to poor families to send their children to school. Section 4 then turns to the Yemeni context, looking at the design and cost considerations for a cash transfer scheme, and at how such a scheme might impact upon school attendance at the governorate level. Section 5 concludes.

2. STRATEGIC CONTEXT

2.1 Education sector overview¹

4. Attending school constitutes the most important activity of children aged 7-14 years, though school enrolment falls well short of the goal of universal primary education. Disaggregating the child population by four non-overlapping activity groups –those only performing economic activity, those only attending. Attending school constitutes the most important activity of children aged 7-14 years, though school enrolment falls well short of the goal of universal primary education. Disaggregating the child population by four non-overlapping activity groups –those only performing economic activity, those only attending.

5. The Government considers education to be fundamental to its overall development strategy. A number of policy frameworks support the objective of increasing educational opportunities and human capital in Yemen: (a) the Millennium Decade Goal (MDG) to achieve universal primary education and ensure that boys and girls alike complete primary schooling; (b) Education For All Dakar goals, including to ensure that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education and to achieve a 50 percent improvement in adult literacy by 2015, especially for women, and equitable access to basic and

¹ This section draws primarily on the following documents: (1) World Bank, *Project Appraisal Document on a Proposed Credit in the amount of SDR 42.4 million (US\$56 million equivalent) to the Republic of Yemen for a Basic Education Expansion Project*, Report No: 20898-YEM, Human Development Group, Middle East and North Africa Region, September 8, 2000; (2) World Bank, *Republic of Yemen Poverty Update (Volumes I and II)*, Report No. 24422-YEM, Middle East and North Africa, Social and Economic Development Group, 11 December 2002.

continuing education for all adults; (c) Yemen's Strategic Vision 2025, including to eliminate illiteracy and increase girls' enrolment rates in basic education up to 95 percent; and (d) the National Strategy for Basic Education (grades 1-9). Implementing these frameworks, and realising the ambitious objectives they contain, will require a substantial, across the board, acceleration of current education reform efforts.

6. The highest priority in the Government's education strategy is to increase enrolment in basic education. To advance this objective, the Government first aims at increasing the number of classrooms, particularly in rural areas. While MOE employs enough teachers to provide one for every 40 children, there is a deficit of nearly 80,000 classrooms. Without reform, 3.7 million children aged 6-15 years would lack a place in school in 2020. Since the late-1990s, MOE has introduced a number of policy measures to increase the efficiency of school construction and to rationalize decisions on school locations: (a) using low-cost standardized designs for school construction; (b) involving communities in school construction as a way to reduce costs and retain students; and (c) basing school location decisions on school mapping tools and on consultations with the communities. MOE also has adopted measures that aim specifically at increasing girls' enrolment: (a) placing small schools closer to girls' homes; (b) obtaining the community's commitment to enrolling girls as a prerequisite for school construction; (c) changing the physical design of schools to include sanitary facilities and boundary walls; (d) providing separate classrooms for girls in grades 7-9; (e) building girls' secondary schools; and (f) providing more female teachers at the upper basic and secondary levels.

7. The Government has also introduced a number of additional, targeted measures to promote schooling. These measures include: (a) informal education programs targeted to boys through mosques and military camps; (b) reductions in the direct costs of schooling for poor girls through the exemption of community participation fees; (c) incentive schemes for sending girls to school such as the provision of free learning kits (from UNICEF and IDA) and food (from WFP); increasing availability of teachers for girls and children in remote rural areas through additional allowances and hiring of teachers (mainly female teachers); and (e) introduction of education programs to children with special needs (orphans and nomads). However, it is not clear to what extent these programs have contributed to rural enrolment increases (see further discussion under Section 3 below).

8. Improving the quality of schooling also continues to be a major challenge facing the Yemeni education system, as evidenced by high levels of repetition and drop-out. While curriculum reform is in progress for most subjects in grades 1-6, as well as for some subjects in grades 7-12, the activities required for the implementation of the new curriculum (e.g., in-service teacher training, setting of learning standards, and teaching evaluation criteria) are not yet fully developed. Shortages and maldistribution of teachers and learning resources contribute to poor quality. The student:teacher ratio of 23:1 masks extreme shortages of teachers in rural areas (particularly females), and of specialists in mathematics, science, and languages nationwide. Half of the teachers have not completed secondary school; and teachers receive inadequate supervision and support. Schools experience shortages of instructional materials; a recent operations and maintenance study shows that only 30 percent of operations and maintenance (O&M) requirements at the school level are being met. Only six percent of basic-level schools have toilets, a key factor in the enrolment of girls. There is no nationwide mechanism for monitoring students' learning achievements in grades 1-8, nor is there any means for controlling the quality of student assessments in these grades.

9. Addressing quality concerns is also an important component in the Government's education strategy. The Government is starting to more strongly align curriculum -

including textbooks and instructional materials, teacher training, and classroom instruction into a coherent system to improve the quality of basic education. The central element of the Government's strategy to improve quality for grades 1-6 is the introduction of new curricula that promote interactive learning with improved textbooks and teaching skills; implementation will start in September 2000. This requires substantial in-service teacher training. The Government has begun to provide an initial one-week orientation to teachers in August 2000 and is preparing for continued in-service training as well as improved teacher supervision. The Government also realizes that further investment in school facilities would not yield results without appropriate provision of furniture, equipment, and operations and maintenance. The Government is developing a strategy to improve operations and maintenance at the school level using the results of the Comprehensive Education Surveys *and* the above-mentioned O&M study.

10. Public spending in the education sector is high compared with most Arab countries and other low-income countries. It increased from 5.1 percent of GDP in 1996 to 6.1 percent in 2000, mainly due to a rising wage bill. Yemen's levels of enrolment, on the other hand, are low relative to other Arab countries, pointing to low efficiency and weak expenditure management. A functional analysis of public spending in education shows that the wage bill and recurrent expenditures account for over 86 percent of the total education budget, leaving too little for operations and maintenance, and for quality improvements. Subsector analysis shows a shift in investment expenditures towards tertiary education: while the share of higher education and vocational training increased from 34 percent to 46 percent during the 1996-2000 period, the share of MOE in investment expenditures declined.

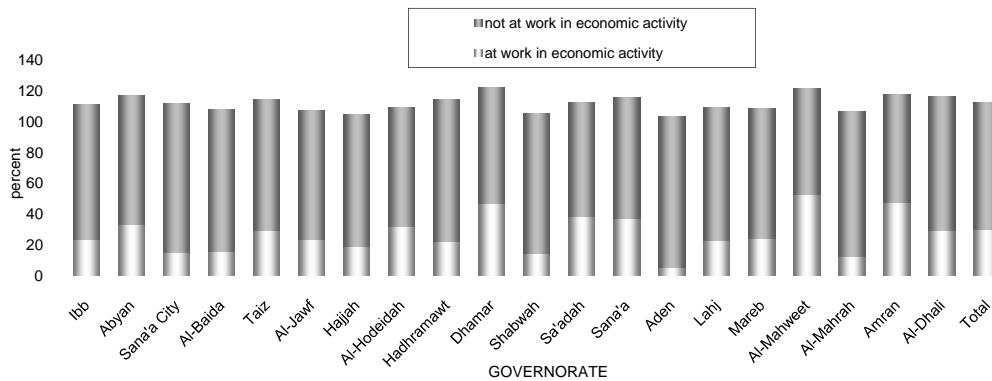
11. The concept of inclusive education was incorporated into the recently-endorsed National Education Strategy. Inclusive education is designed to make the education system more attractive to, and appropriate for, working children and other children with special needs. Little progress, however, has been made to date in introducing inclusive education to the school system. Current education programs are generally insufficient or inappropriate to addressing the right of marginalised children to schooling. Only about one-third of all Yemeni working children, for example, and just 16 percent of working girls, is reached with formal schooling. The Government provides boarding schools for nomads (e.g., in Sabwa and Hadramout) and a few schools for orphans (e.g. in Sana'a City) but these and other similar programs are typically planned and implemented in parallel to the mainstream, and therefore run counter to the goal of achieving an inclusive mainstream education system. They also often duplicate existing activities and distract education personnel by drawing them away from national, government-led programs. They require education personnel to focus on the immediate outcomes of individual programs rather than the long-term education goals.

2.2 Out of school children

12. The group of children not in school remains very large in Yemen. In all, some 45 percent of 6-14 year-olds, 2.4 million children in absolute terms, do not attend school, the highest level of school non-attendance in the Arab region. School non-attendance is overwhelmingly a rural phenomenon. Rural children account for 88 percent of total out-of-school children, and the proportion of rural children out of school (52 percent) more than twice that for urban children (22 percent). Non-attendance also has an important gender dimension. Girls account for 64 percent of total out-of-school children, and are twice as likely as boys (60 percent) to be out of school. The gap between rich and poor in school non-attendance is relatively small for basic

school-aged children. Based on HBS 1998, 44 percent of children aged 6-14 years in the poorest decile were out of school compared to 33 percent of children in the richest decile. Non-attendance is much lower in Yemen's two largest cities, Sana'a and Aden (17.3 and 15.5 percent, respectively), than in the rest of the country. Sa'adah and Hajjah are the poorest performing governorates in terms of school enrolment, each with 59 percent of children outside school.

Figure 1. Proportion of 6-14 year-old children out of school, by governorate and work status

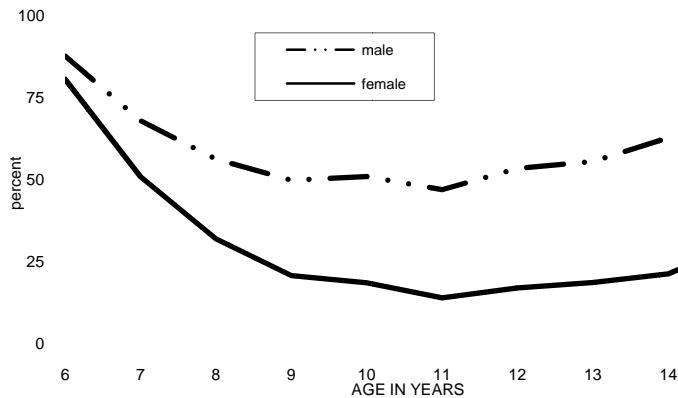


Source: UCW calculations based on Yemen Poverty Monitoring Survey, 1999

13. Children combining school and work also merit policy attention. Children in this group are at greatest risk of repetition and dropout. This group is also less likely to draw educational benefit from their time in the classroom than their non-working counterparts, as work responsibilities reduce the time and energy they have for their studies. Data from HBS 1998 indicate that this group puts in a very long workweek (35 hours on average) despite also attending school. About four percent of 6-14 year-olds, and 6 percent of 10-14 year-olds, perform economic activities in addition to studying. This proportion would of course be much higher if time spent on household chores were also considered.

14. School non-attendance varies substantially by age. For both boys and girls, non-attendance is highest among young children, then falls until the age of 11 years before again climbing (Figure 2). Within the 6-14 age group, young children are actually out-of-school in greater proportion than older ones. This points to the importance of late school entrance as an explanatory factor among younger children (not, however, for rural girls, who tend not to ever enroll). Late entrants joining the system exceed those dropping out of the system for the first half of the basic cycle, after which there is a net outflow from the school system. But drop-outs are also very high, even among young children. Of every 100 children entering the school system, only about 48 successfully reach sixth grade.

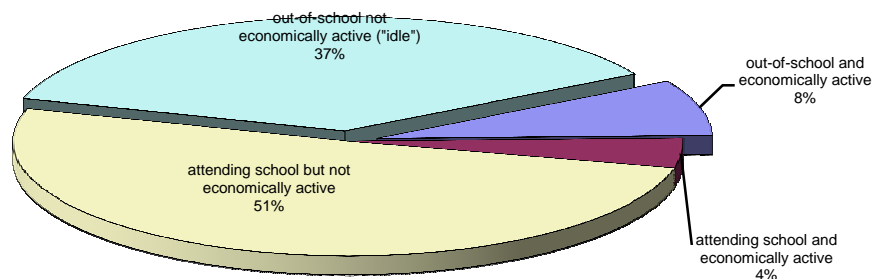
Figure 2. Out-of-school children, by age and sex



Source: UCW calculations based on Yemen Poverty Monitoring Survey, 1999

Out-of-school children fall into two groups, those that are at work in economic activity and those that are reportedly “idle”. Reportedly idle children, i.e., children neither at work in economic activity or attending school, account for more than four out of five of out-of-school children, and over one in three total 6-14 year-olds. Most (49 percent) are girls. Calculations based on HBS 1998 indicate that about a tenth of these children is actively seeking employment, and another tenth does not attend school or work for reasons of health.² Much of the remainder is likely involved in domestic chores such as water fetching, firewood collection, childcare and food preparation (not technically economic activities according to international labor standards). Though data on household chores involvement are not available from HBS 1998, but other surveys conducted in Yemen indicate that children, and particularly girls, must spend a considerable amount of time each day on chores such as fetching water.³ The children from this reported idle group who are indeed idle can in some ways be at a double disadvantage vis-à-vis other groups of children, benefiting neither from schooling nor from the learning-by-doing that some forms of work offer.

Figure 3. Distribution of children by activity status



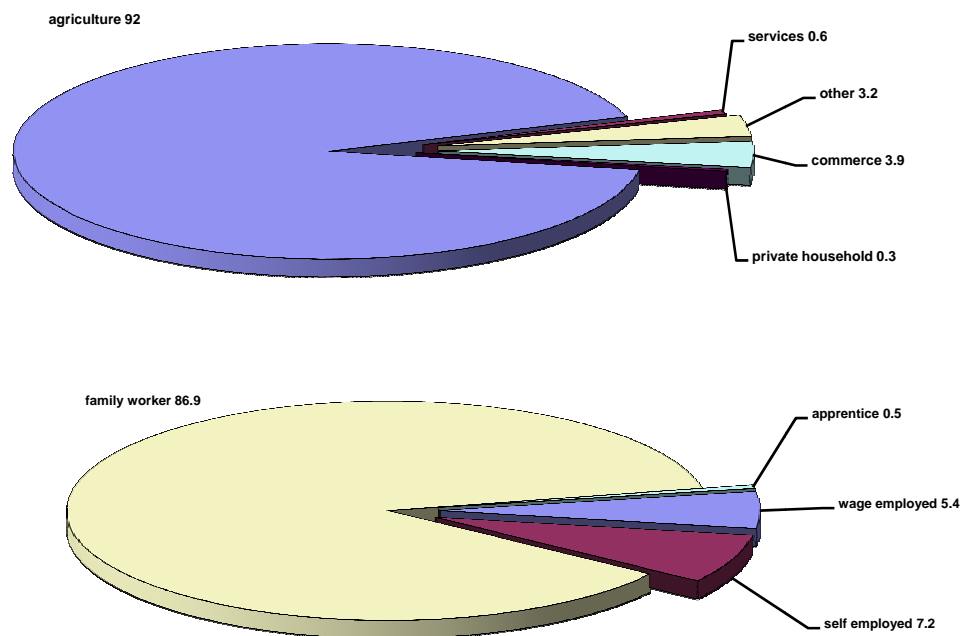
Source: UCW calculations based on Yemen Poverty Monitoring Survey, 1999.

² For a more complete discussion, see Biggeri M., Guarcello L., Lyon S. and Rosati F., *The puzzle of “idle” children: neither in school nor performing economic activity: Evidence from six countries*, Understanding Children’s Work Project, draft working paper, Florence Italy, August, 2003.

³ UNICEF, ABP/CDP Baseline survey 2001, Final Report

15. Out-of-school children who are at work in economic activity account for about eight percent of total 6-14 year-olds. These children are a relatively homogenous group: 92 percent work in agriculture percent and 87 percent work within the family unit (Figure 4). This, however, is primarily a reflection of work by children in rural areas, where 95 percent of working children are involved in agriculture and a similar proportion work for their families. Children working in urban areas are more even spread among agriculture (42 percent), commerce (35 percent), and other sectors (17 percent). There is some specialisation in economic activity by sex. Working girls are more likely to be involved in agriculture, but much less likely to be involved in commerce, than their male counterparts, with the differences particularly pronounced in urban areas. Working children put in long hours – their average work week is 42 hours, more than an adult worker in the industrialised world. These figures do not, however, include unconditional worst forms of child labor, as household surveys such as HBS 1998 are ill-suited to collect information on these forms of work.⁴

Figure 4. Distribution of child workers by sector and modality of work



Source: UCW calculations based on Yemen Poverty Monitoring Survey, 1999

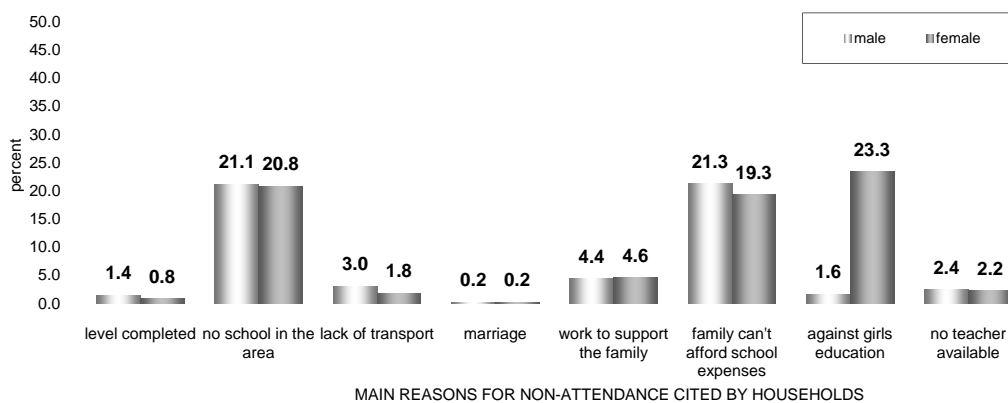
16. Out-of school children vary greatly in terms of the amount of time that they have been absent from the classroom. Among 9-10 year-olds, 1 percent dropped out in the last year, 2.1 percent have been out of school for over a year and 33 percent have never entered school. Among 13-14 year-olds, 3 percent are recent drop-outs, 14.6 percent long-term drop-outs and 28 percent non-entrants. This breakdown also has important implications for policy. While demand- or supply-side policy measures

⁴ This is because these forms of work are carried out illegally, or are considered socially unacceptable, and thus survey respondents are not willing to report them truthfully. Many of the children concerned also do not live at home, putting them beyond the scope of traditional household surveys. New survey methodologies therefore need to be developed and tested in order to account for children in unconditional worst forms in child labor estimates.

might succeed in attracting recent drop-outs back into the formal school system, such measures are less likely to be effective for children that have never been in the system, or have had only very limited formal schooling experience. Different strategies, focused on non-formal learning opportunities, might be needed for these groups.

17. Households cited “distance to school” as the most important reason for their children being out of school. These reason are cited by 21 percent of children, underscoring the continuing need to expand school infrastructure. HBS 1998 shows that rural students need to walk more to access basic school than urban students, and that in rural areas families appear to allow boys to walk more than girls. Only one percent of urban students take more than 30 minutes to reach school, compared to 10 percent of rural male students and seven percent of rural female students. Regression results based on NPS 1999⁵ indicate that the presence of a basic cycle school in a village increases school enrolment by almost four percentage points. The effect of a Koranic school in a village also increases enrolment by about four percentage points, while the effect of secondary school in a village is slightly larger, increasing enrolment by almost five percentage points. The effect of school availability on enrolment is, perhaps surprisingly, weaker for girls than boys, in the case of basic cycle schools, but much stronger for girls than boys in the case of secondary cycle schools. It is also much stronger for girls than boys in the case of Koranic schools.

Figure 5. Reasons cited for school non-attendance, by sex of out-of-school child



Source: UCW calculations based on Yemen Poverty Monitoring Survey, 1999

18. “Difficulties in paying school expenses” is another important reason cited for either never sending their children to school or withdrawing them early. This reason is given for 21 percent of out-of-school boys and 19 percent of out-of-school girls. While public education is ostensibly free at all levels in Yemen, students still pay community contribution fees,⁶ school activity fees and examination fees. On average, the yearly household expenditure on education is YR 2,272, or 0.6 percent of total household expenditure. It is estimated that household spend about YR 250 on government school fees and expenses and YR 300 on stationary for sending one child to school. Although these amounts do not sound substantial, the cost of sending children to school is not negligible, especially for the poorest. Several pilot schemes, including provision of free learning kits (from UNICEF and IDA), have been

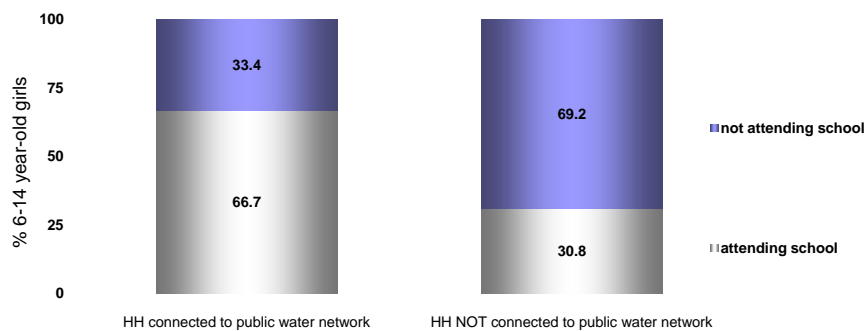
⁵ See Annex 3 for complete results.

⁶ The community participation fee is 150 Riyal per year. In 1998, MOE exempted poor girls from this fee but implementation of this policy varies and depends on the school administrator.

launched to reduce direct school costs for poor families, but these schemes remain very limited in scale.

19. Parents' negative attitudes towards educating their daughters is an important reason for girls' non-attendance. Nineteen percent of households indicate not enrolling their girls for gender-related reasons. Regression results based on NPS 1999 indicate that gender is the most important determinant of household decisions concerning school. Holding constant household income, parents' education and other relevant factors,⁷ being a girl decreases the likelihood of attending school full-time by 25 percentage points, and increases the likelihood of being "idle" by 23 percentage points, a category that can reflect unreported work or involvement in household chores. These results point to the need to raise awareness of the importance of girls' education, and to address gender-related concerns about school facilities (e.g. lack of appropriate sanitation facilities, co-educational classrooms, shortage of female teachers, etc.).

Figure 6. Girls' school attendance status by household water access



Source: UCW calculations based on *Yemen Poverty Monitoring Survey, 1999*.

20. Household water access also appears to play a strong role in household decisions concerning school attendance. Two-thirds of children from households without water access are out of school against only one third of children from households with water access (Figure 6). Controlling for other factors, connection to a public water network increases the likelihood of girls attending school by 16 percentage points in urban areas and 11 percentage points in rural areas. At the same time, a household water connection reduces the likelihood that girls are idle (by 13 percentage points in urban areas and eight percentage points in rural areas), and reduces the likelihood that they are involved in work (by two percentage points in urban areas and three percentage points in rural areas). These results underscore the importance of basic services expansion as an instrument for reducing child labor and increasing school attendance.

21. Parents' educational status has a strong positive relationship with school attendance. Work prevalence is highest among children whose parents that have no education, and falls progressively as parents' education level rises (Figure 12). School attendance and parents' education, on the other hand, are positively related. These relationships are likely at least partially the product of a disguised income effect, i.e., parents with higher levels of education are also likely to have higher levels of income, and therefore less need to involve their children in work. However, the relationship between parents' education and children's work prevalence holds even when controlling for income, although the effect is relatively small. Holding income

⁷ See complete model and detailed regression results in Annex 3.

constant, children of educated fathers are five percentage points more likely to study full-time, and 0.5 percentage points less likely to work, than children of illiterate fathers. Children of educated mothers are two percentage points more likely to attend school, and one percentage point less likely to work, than children of illiterate mothers. Another possible explanation is that more educated parents might have a better knowledge of the returns to education, and/or be in a position to help their children exploit the earning potential acquired through education.

3. PROMOTING SCHOOL ATTENDANCE AMONG DISADVANTAGED CHILDREN: A REVIEW OF INTERNATIONAL POLICY EXPERIENCE

22. There is a large body of international programming experience in providing incentives to poor families to send their children to school. School attendance incentive schemes involve offering households cash or in-kind payments conditional on the child attending school. These transfers differ from conventional scholarships in that their primary purpose is encourage enrolment and only secondarily to allow talented children or young people of modest means to obtain an education. What these schemes do, essentially, is compensate families for the direct and indirect costs associated with children attending school rather than working. The primary benefit of these programs is their ability to tie together short-run assistance and long-run human capital formation to fight the intergenerational transfer of poverty. By helping the children of poor families to enter and remain in school today, the incentive schemes make it less likely that these children become tomorrow's poor. These schemes can also help address gender issues by providing greater incentives to girls and/or by making mothers the recipients of the benefit, particularly important in the Yemeni context where gender disparities are large. Incentives used in these schemes typically take the form of either cash or food rations.⁸

23. **Conditional cash transfer (CCT) programs** are often implemented as part of a broader package of poverty alleviation initiatives. They consist of direct monetary transfers or stipends to families in return for their children's regular attendance at school. There is significant experience with CCT programs in several countries, particularly in the Latin America region. Large programs have been established in Mexico and Brasilia, and new programs have been or are about to be launched in Honduras, Nicaragua, Ecuador, Columbia, Jamaica and other parts of Brazil⁹.

24. The *Progres/Oportunidades* program in Mexico is perhaps the best known CCT program. It provides twice-monthly cash payments conditional for students in grades 3 to 9 conditional upon their attaining an 85 percent attendance rate (with teachers relied upon to verify student attendance). The amount of the cash payment increases with each grade, and, at the secondary level, is slightly higher for girls than boys. The program also provides financial assistance for school materials in grades 1 to 9. Coverage is broad. At the end of 1999, it operated in almost 50,000 localities, reaching approximately 2.6 million families (about 40 percent of all rural families and one-ninth of all families in Mexico). The *Progres/Oportunidades* budget for 1999 was approximately \$777 million, equivalent to 0.2 percent of Mexico's GDP.

⁸ A third type of scheme, exemplified by the School Health program in Peru, provides health insurance rather than cash as an incentive to attend school. In exchange for proof from teachers of students regular attendance, the Peru program provided children aged 3-17 years of age with universal health care coverage. Two to three million students received treatment under the program when it began in 1997, but numbers quadrupled in 1998-99 as the program became better known.

⁹ For a recent review of the impact of CCT's programs on child labour view Dhushyanth Raju 2006, "The effects of conditional cash transfer programs on child work: a critical review and analysis of the evidence", HDNSP, The World Bank.

25. *Bolsa Escola*, established as a pilot project in Brazil's Federal District in 1995, is another well-known CCT program. It provides cash grants equal to the minimum wage to poor families with school-aged children in return for these children maintaining a 90 percent school attendance rate. The grant is provided to each family, rather than each child, thus reducing the incentive of families with many children from participating in the program. The size of the benefit also does not vary by child age or sex. Other CCT initiatives include the Guatemala *Eduque a la Nina* girls' scholarship program, providing female students a monthly stipend based on the monthly income of women with less than one year of schooling, the Nicaragua *Fondo APRENDE*, involving pilot scholarships to poor students in grades 4-6, and the Indonesia Social Safety Net Scholarship program, a five-year effort beginning in 1998-99 providing scholarships to more than 6.5 million students.

26. Some CCT programs also provide financial incentives for meeting a preset schooling attainment targets. The *Poupança Escola* program in Brasilia, for example, now discontinued, provided a deposit of around \$90 into the account of each child participating in the *Bolsa Escola* program if the child was successful in completing the school year and promoted to the next grade. Half of the amount could be withdrawn upon successful completion of fifth grade, and subsequent withdrawals could be made upon completion of eighth grade and of secondary school. Graduation incentives also form part of the Bangladesh Female Secondary School Assistance project.

27. The relatively few CCT programs to have been systematically evaluated suggest that they are effective tools for raising enrolment and reducing drop-outs. The Mexico *Progresas/Oportunidades* increased primary enrolment rates by about one percent (from already high levels of 90 percent for boys and 94 percent for girls) and secondary enrolment rates by eight percent for girls and five percent for boys (from levels of 67 and 73 percent respectively). The impact was particularly strong for children living further away from school. Implementation of the program has also led to important reductions in child labor force participation in both salaried and non-salaried work. The probability of boys working was 15-20 percent lower, and girls of working 15-25 percent lower, after program implementation compared to before implementation. Preliminary results from the Brazil *Bolsa Escola* program show participants have lower drop-out rates than non-participants (0.4 versus 5.6 percent in 1996), higher promotion rates (80 versus 72 percent) and are more likely to enter school at the right age. The impact of the program on child labor, however, was inconclusive.

28. **School nutrition and food-for-schooling** use food as an incentive for parents to send their children to school. They involve either 1) children being fed in school (school nutrition programs) or 2) families being given food if their children attend school (food-for-schooling programs). The first type, school nutrition programs, is designed to alleviate short-term hunger and thereby improve children's ability to derive educational benefit from their time in the classroom. These programs do not, however, compensate parents for the lost income or output from child work. The second type, food-for-schooling programs, allows the entire family benefit from a food ration rather than just the child attending school. As such, they go further in helping families to give up the income or productivity derived from child work. Food-based incentive schemes have been implemented in a range of countries.

29. The Brazil *Merenda Escolar* program is one of the largest school nutrition schemes. In 1997, the program provided breakfasts and lunches for students in 3,299 municipalities at a total cost of about 506 million *reais* (US\$453.4 million). Other large-scale past and present programs include Mexico, involving four million breakfasts served daily to primary and secondary students (as of 1998), and South

Africa, involved school meals served in 13,000 schools each day (as of 1996). In the Arab world, the Egyptian Ministry of Education provides a meal to children during the school day as an incentive to attend school. Programs in Pakistan and Kenya are among the few to have been systematically evaluated. In Pakistan, a pilot school feeding program providing school meals to some 12,000 students in four districts of Sind province led to an improvement in nutritional status, and a rise in school enrolment and retention rates, but to a decline in educational achievement. In Kenya, school participation was 30 percent higher in 25 pre-schools in which free breakfasts were introduced compared to 25 control schools not benefiting from the program.

30. The Bangladesh Food For Schooling (FFS) program is one of the most important food-for-schooling schemes. The program, launched on a pilot basis in 1994, provided poor families with primary school-aged children with a monthly ration of food grains provided that these children maintained an 85 percent attendance rate. The families could then either use the ration for its own consumption or sell it for cash to meet other needs. In 1995-96, more than 2.2 million children from over 17,000 schools benefited from the program. An IFPRI evaluation of the program indicates that it was successful in increasing primary school enrolment, promoting school attendance and reducing drop-outs. But classes in participating schools also became more crowded, leading to slightly lower achievement scores in FFS schools compared to non-FFS schools. The program also reduced child labor, but by considerably less than the rise in enrolment, indicating that many families simply added schooling to children's work responsibilities in order to benefit from the program. Another scheme in Pakistan (School Nutrition program) yielded similar outcomes.

31. A food-for-schooling scheme is also being implemented in Yemen as part of World Food Program (WFP) activities in the country. Parents receive a wheat and vegetable oil ration for every three months a daughter attends primary school. Within the geographically targeted regions, further targeting aims to identify schools in communities with particularly low girls' enrolment, high levels of girl child labor, and the capacity to take in more pupils. There is no targeting within a selected school so that all attending girls receive food transfers. These are distributed each quarter by parents' associations, teachers and head masters with supervision from WFP. In an earlier version of this scheme, the response rate far exceeded WFP's expectations, leading to teacher and school size constraints and insufficient food stocks. To avoid running into the same problems, WFP is now working more closely with the Ministry of Education, the Social Fund, donors, NGOs and local communities to expand and rehabilitate schools so that all girls can be accommodated.

4. PROMOTING SCHOOL ATTENDANCE IN YEMEN: SIMULATED IMPACT OF A CASH TRANSFER SCHEME

32. This section assesses the simulated impact of a simple cash transfer scheme as a tool for reaching disadvantaged children with educational opportunities in Yemen. Such a scheme would need to fit within broader education reform efforts, and specifically within efforts taking place within the context of the Basic Education Expansion Program (BEEP) and the Social Fund for Development to improve access to and the quality of basic education. As such, it should not be considered in isolation, but rather as part of a larger package of instruments with the shared aims of promoting school attendance and reducing involvement in work.

33. Conditional cash transfer (CCT) programs consist of direct monetary transfers or stipends to families in return for their children's regular attendance at school. The

primary benefit of these programs is their ability to tie together short-run assistance and long-run human capital formation to fight the intergenerational transfer of poverty. By helping the children of poor families to enter and remain in school today, the incentive schemes make it less likely that these children become tomorrow's poor. These schemes can also help address gender issues by providing greater incentives to girls and/or by making mothers the recipients of the benefit, particularly important in the Yemeni context where gender disparities are large. Evidence from elsewhere indicates that CCT programs are an effective way of promoting school enrollment by attracting children that would have otherwise been working or "idle" among the poorest families. These programs also promote higher retention rates and apparently generate improved school performances.

34. CCTs have been used in conjunction with other measures aimed at improving health and nutrition of both children and mothers, as discussed above. In some countries (e.g., Mexico), CCTs now form an integral part of the overall poverty reduction efforts. While we focus here only on CCTs as an instrument to promote school attendance, it is advisable to assess their role also within the broader country poverty reduction strategy.

4.1 Project design considerations

35. **Targeting:** Targeting is a critical consideration in setting up cash transfer programs. Evaluation of the programs (especially in the case of the cash contingent ones) has shown that effective target is essential to their success and cost effectiveness. The ability to directly target the families of working children is limited by information gaps relating to this group and by incentive considerations. While information is available on children at work in economic activity, little is known about the larger group of children at work in non-economic activities (i.e., household chores). Information is also lacking on children in worst forms of work, a group that is likely smaller in absolute terms but is most at-risk. Even assuming information permitted accurate targeting of working children, such a scheme, by excluding families of non-working children, might actually change incentives in favor of child work. A scheme specifically targeted to out-of-school children might similarly adversely affect incentive structures. Another possibility would be to target specific geographical region(s) where rates of child labour and school non-attendance are high. Such an approach, however, would entail high errors of inclusion, thereby reducing efficiency and raising costs.

36. For these reasons, it is suggested that the transfer be made available to all families without conditioning on the current activity of their children, but identifying most vulnerable and needy on the bases of appropriate targeting (see below for a discussion of the main targeting criteria). This consideration reinforces the opportunity to see the CCT program not only as a part of the education strategy of the country, but also as part of the overall poverty reduction strategy.

37. The main targeting criteria used in the CCT projects can be grouped in four categories:

- *Individual/household assessment* involves collecting the socioeconomic information on which the eligibility decision on potential beneficiaries is based. The rigor of this procedure can vary greatly, from a verified means test based on extensive income information with third-party verification to simple means tests with no independent verification of income. Decisions may be based simply on information provided by applicants at program offices, or social workers may make a trip to the homes of potential beneficiaries to

verify qualitatively the information provided. An increasingly popular approach is the use of proxy means testing, which generates a score for applicant households based fairly easy to observe household characteristics such as the location and quality of the dwelling, ownership of durable goods, demographic structure of the household, and education and occupations of adult members. The indicators used in calculating this score and their weights are derived from statistical analysis of household survey data.

- *Categorical targeting* also involves defining eligibility in terms of individual or household characteristics that are fairly easy to observe, are hard to manipulate falsely, and are correlated with poverty (e.g., age, gender, ethnicity, land ownership, demographic composition, or geographic location). One of the most common forms of categorical targeting is geographic targeting, whereby budgets are allocated based on regional indicators of poverty and deprivation.
- *Self selection* of poor beneficiaries into a program is another criterion that could be used. Under this approach eligibility is in principle universal, but the design involves dimensions that are thought to encourage the poorest to use the program and the nonpoor not to do so, based on differences in the private participation costs incurred by the poor and nonpoor households (e.g. queues, social stigma etc.) .
- *Community-based targeting*. Under this approach a community leader or group of community members decides who in the community should benefit and who should not. The underlying assumption is that local knowledge of people's living conditions will be much more accurate than the product of a means test conducted by a government social worker or a proxy means test. However, the objectives of such community-based organizations may not reflect those of the program designers, and the benefits of the program may be "captured" by community elites.

38. In general, a combination of the above is used to identify the targeted population. For example, first geographical areas are selected on the basis of criteria like relative poverty, low school attendance, etc. Subsequently households are selected within these areas based on criteria to identify the vulnerable (poor).

39. We suggest that a similar approach is followed in Yemen, by identifying first Governorates and districts where children are more at risk of being out of school and involved in work or being idle and then using a simple targeting criterion to identify the poor. Given the data availability and the possible costs the approach based on scores does not seem to be feasible, as it requires census like data. On the other hand, it would be useful to rely on simpler mechanisms to identify the poor, possibly utilizing existing mechanisms already used to deliver means tested transfers.

40. **Nature of the transfer.** We suggest the use of cash (monetary) transfers rather than food or other in-kind transfers. The experience of the Food-for-Education program in Bangladesh has shown that in-kind transfers entail high administrative costs. This program distributes grain to participating schools. Obviously, the transport of a physical commodity drives up the cost of the transfer. According to a recent estimate, the cost of delivering an additional \$1.00 in grain to recipients is \$1.59. This figure implies that total administrative costs are 37 percent ($0.59/1.59$) of the total cost of the program. It raises, then, important questions about the use of food as a transfer medium.

41. **Amount of the transfer.** Calculating the amount of the conditional transfer also requires careful consideration. Programs elsewhere employ a variety of criteria, e.g.,

national minimum wage (*Bolsa Scola*, Brazil), average earnings of an agricultural worker (*Progres/Oportunidades*, Mexico), or the average monthly income for women with less than one year of schooling (*Eduque*, Guatemala). Many programs offer higher transfers for older children, to reflect higher opportunity costs, and for girls, in order to compensate for the additional obstacles to schooling that girls face. In Yemen, school fees and expenses for items such as textbooks, school supplies and transport constitute a major burden for poor families. The amount of any conditional transfer therefore would need to reflect not only children's forgone wages or output, but also the direct schooling costs incurred by families

42. The following table offers an overview of the amount of the transfer used in selected countries that have applied a CCT scheme. As it easy to see, the amounts of the transfer are in a range of 10 to 20 percent of the per capita poverty line. Obviously, poor families with several children might receive substantial transfer under these schemes and this is likely to be a reason of their relative success.

Table 1. Conditioned transfer-for-education (CTE) program payments in absolute and relative terms, six CTE countries

	Payment per child per month (US dollars)	Payment relative to poverty line (percent)	Payment relative to average income of poor (percent)	Payment relative to minimum wage (percent)	Poverty line (US dollars)
Bangladesh					
Poverty line					30 and 60
Food for Education (1999)	3.00	10.0	12.5	n.a.	30
Female Education Program	1.25	4.2	5.2	n.a.	30
Brazil					
Bolsa Escola (2001)	6.00	11.9	21.8	8	50
Chile					
SUF (1998)	6.00	7.3	11.2	4.8	82
Honduras					
PRAF II (1999–2002)	3.20	3.7	9.1	3.7	79
Mexico					
Progres (1998)					73
Grade 3	7.60	10.4	17.1	12	
High school	21.60	29.6	48.7	68	
Nicaragua					
RPS (1998)	11.00	5.2	13.1	23.9	53

n.a. = not available

PRAF = Programa de Asignación Familiar

RPS = Red de Protección Social

SUF = Subsidio Unitario Familiar

Notes: In Nicaragua the transfer is per household, not per student. Payment relative to urban poverty line and average income of poor is assuming a family of four, with one beneficiary child. In Mexico all poverty calculations use rural poverty lines and rural average wages because the program is rural. The poverty lines are taken from CEPAL (Economic Commission for Latin America and the Caribbean, *Panorama Social 2000–2001*). Average income of the poor was calculated by the authors from poverty and poverty gap statistics.

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43. In the case of Yemen, we suggest cash transfers ranging from YR 1000 to 2000 (in terms of 1999 Riyals) per child per months. The per capita poverty line (expressed in 1999 Riyals) is on average around YR 3000. Taking in to account that the average number of household members around the poverty line is eight and that such households have an average three children of school age the maximum transfer an household at the poverty line will reactive will be approximately range from 12 percent of their expenditures (3000/24000) to 25 percent (6000/24000).

44. Certain programs have transfers differentiated by the age/ class attended of the child in order to take into consideration the fact that the opportunity costs of

children's time raises with age/level. It has not been proved that this system works better than one based on a flat (age invariant) transfer scheme. We suggest for the moment to consider a flat transfer scheme, also because of the simpler administrative structure it requires. However, in the pilot the relative efficacy of the different schemes could be tested. The cash transfer should be conditioned not only on the children attending school, but also on a attaining a minimum attainment criterion (e.g. promotion to next grade, etc).

4.2 Simulated impact of the cash transfer program

45. In the following paragraphs we describe a set of simulations carried out to obtain an estimate of the likely impact of a cash transfer scheme on school attendance. On this basis, some estimates of the direct (non administrative) costs of the program are also presented. The simulations are subject to several technical limitations relating to the nature of the data and of the problem to be studied. The results should be considered as a first assessment of the possible impact and cost of a cash transfer scheme, to be confirmed by an accurate evaluation following the pilot.

46. We made use of two data sets, the Yemen Household Budget Survey (HBS) 1998, and the National Poverty Survey (YNPS) 1999. The 1998 HBS is considered the base to be used in estimation of income poverty and to carry out comparisons based on it in the future. On the other hand, the 1999 Poverty Survey provides a large quantity of data and non-income indicators at the governorate as well as at the district level, which are helpful in analyzing and determining the dimensions of poverty, and in showing the quantitative and geographical differences and disparities. We considered the age range 6 to 14 years, as this includes the basic education cycle in Yemen.

47. At the basis of the simulation is a model that estimates school attendance (see Annex 3 for details). The estimations were carried out separately by governorate and by gender, in order to better capture the effects of geographical, institutional and cultural differences and to highlight the possible different reactions of the household depending on the gender of the child. Therefore a set of 19 x 2 estimates have been carried out. The detailed results are presented in the Annex 1.

48. Data limitations do not allow us to compute the potential income earned from the children working within the household, neither to evaluate the value of the children's contribution to household welfare through performing household chores. The simulations, therefore, show the effects of an income transfer to the family of the amount described on school attendance. This should bias downwards our estimates. However, as we have not corrected for the standard error the point estimates of the effect of income and taking into consideration also the effects observed in other countries, we believe that the estimates presented represent almost an upper bound assessment of the possible impact of a CCT program.

49. We also assumed that only the poor household would be targeted by the scheme. Again data problems have forced us to use an indirect solution. The data from the HBS 1998 Survey have been used to compute the poverty line and carry out the poverty assessment. The estimate contained in the Republic of Yemen Poverty Assessment (WB, 2002) indicates that on average about 40 percent of the Yemeni population is at or below the poverty line. For the simulations we have used the NPS 1999 Survey as it has a larger sample size that allow us to disaggregate at governorate and gender level and, especially, to include in the estimates and simulation children below the age of 10. This survey does not allow, however, to properly compute a poverty line. Hence, in order to be consistent with the official

data on poverty, we have assumed that the transfer will be received only by children belonging to poor households, defined here as households belonging to the two bottom quintiles. In this way we should identify the 40 percent of the population that is poor according to the official estimates. In order to consider the possibility of using the transfer scheme to promote especially girls school attendance, we have also considered transfer differentiated by gender.

50. Summing up, the following simulations have been carried out: (i) for each Governorate and separately for boys and girls; (ii) assuming transfers ranging from 1000 to 2000 Ryals per month per school age children; (iii) considering also transfer amounts differentiated by gender; and (iv) assuming the transfer would be targeted only to the poor, defined here as the household belonging to the two bottom quintiles. The following table and graph shows the increase in school attendance by governorate depending on the size of the transfer.

Table 2. Children aged 6-14 enrolled in 1999, by governorate belonging to poor families

Governorate	Attendance rates as from the NPS 1999 Survey		Change in school attendance rate							
			Subsidy of 1000 Riyals per school age child		Subsidy of 750 Riyal for males and 1250 Riyal for females		Subsidy of 500 Riyal for males and 1500 Riyal for females		Subsidy of 2000 Riyal per school age child	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Ibb	31.3	68.2	9.2	5.4	9.7	5.1	10.3	4.7	17.8	9.6
Abyan	23.7	64	6.4	7.3	6.8	6.8	7.1	6.3	12.8	12.7
San'a	57.5	68.7	-0.1	2.8	-0.1	2.8	-0.1	2.7	-0.1	5.2
Baida	23.2	57.5	5.1	8.2	5.4	7.9	5.7	7.6	10.1	14.6
Taiz	35.3	70.4	13.4	8.7	14.2	8.2	15.0	7.6	25.3	14.8
Jawf	13	45.3	2.7	16.5	2.9	15.4	3.2	14.3	5.3	29.2
Hajjah	16.5	48.5	5.9	12.6	6.2	11.8	6.5	10.9	11.9	22.5
Hudaydah	20.5	43.5	6.1	7.1	6.5	6.6	6.9	6.1	11.9	13.0
Hadhramout	34.6	58	6.8	5.4	7.1	5.2	7.4	4.9	13.1	9.7
Dhamar	13.8	56.1	8.7	6.6	9.2	6.3	9.7	5.9	18.6	11.9
Shabwah	22.3	65.4	4.5	4.9	4.6	4.6	4.8	4.4	8.7	8.7
Sa'adah	8.1	51.6	3.8	11.2	4.0	10.6	4.3	9.9	8.1	20.1
Sana'a	17.5	61.4	6.5	7.9	6.9	7.4	7.3	6.9	13.3	14.0
Aden	57.5	64.9	2.7	5.8	2.8	5.5	3.0	5.2	4.9	10.6
Lahej	35.3	71.7	8.2	5.3	8.6	4.9	9.1	4.5	15.7	9.2
Mareb	27.9	57.4	7.6	9.7	8.0	9.2	8.4	8.7	14.9	17.4
Mahwah	18.9	57.2	6.9	9.9	7.4	9.4	7.9	8.7	14.0	17.6
Mahrab	35.7	41.3	8.0	11.4	8.4	10.7	8.7	9.9	15.4	20.9
Amran	15.2	68.4	5.0	5.9	5.3	5.6	5.6	5.3	10.2	10.5
Daleh	25.9	65.2	7.6	6.5	8.0	6.2	8.4	5.9	14.7	11.4

51. The increase in school enrollment is relatively large and appears to be differentiated by gender and governorate. At national level the increase in school attendance would be of about 8 per cent for boys and girls. By doubling the transfer to 2000 Riyals, the size of the effect also almost doubles.

Figure 7. Change in attendance rate resulting from transfer of YR 1,000 per school-age child

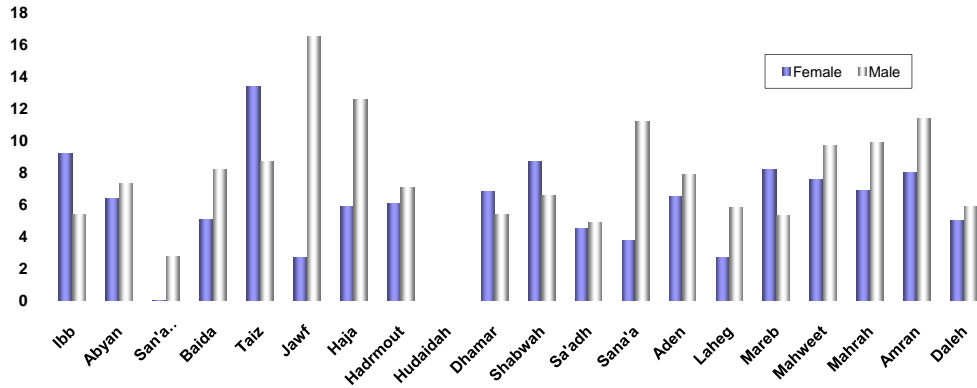


Figure 8. Change in female attendance rate resulting from transfer of YR 1,000 per school-age child

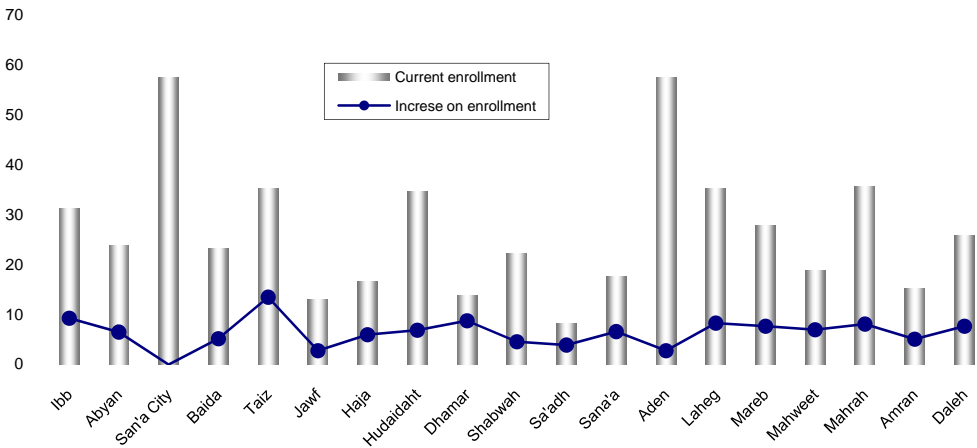
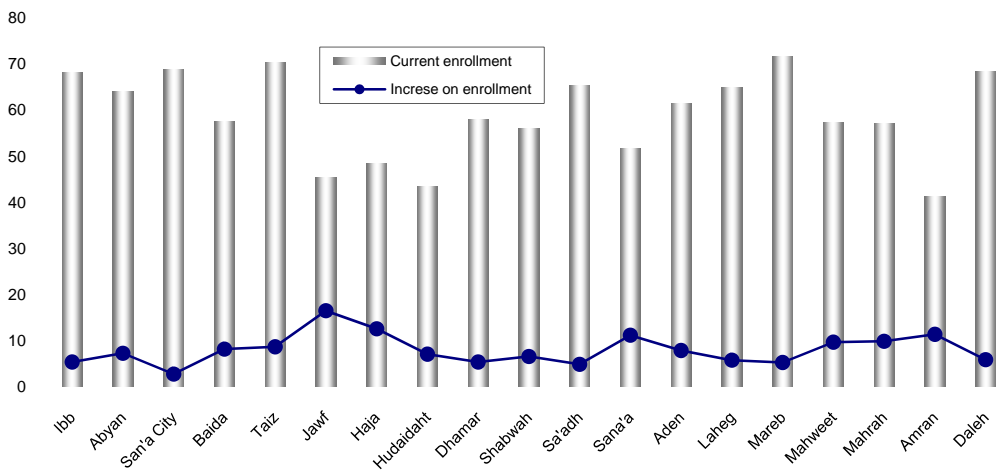


Figure 9. Change in male attendance rate resulting from transfer of YR 1,000 per school-age child



52. Figures 8 and 9 show the increase in enrollment as opposed to the initial level of enrollment for males and females, respectively. Even if some care should be exerted it appears that the largest increase in enrollment happens in governorates where the attendance rate is lower. This phenomena is more accentuated for males than for females: in fact, the correlation coefficient between initial level and increase in enrollment is -0.7 for males and -0.15 for females. More detailed information of the likely impact of the transfer for each age group, by governorate and sex is shown in the Appendix A.

4.3 Project cost

53. We present here some estimates of the cost implications of the cash transfer project. The project should cover 1.2 million students in the case of a transfer of YR 1,000 and 1.4 million students in the case of a transfer of YR 2,000. We compute the cost of the project by assuming that each child attending school among the poorest 40 per cent of the population would receive the transfer. The direct cost of the project is presented in Table 3 in the case of transfers of YR 1,000 and YR 2,000 per child attending school.

Table 3. Direct cost of cash transfer project, by transfer size, governorate and sex of child (YR 000's)

Governorate	YR 1,000 per child in school (YR 000's)			YR 2,000 per child in school (YR 000's)		
	Female	Male	Total	Female	Male	Total
Ibb	61,571	134,538	196,109	132,840	279,767	412,606
Abyan	6,613	20,250	26,845	14,021	42,538	56,559
San'a City	7,315	7,233	14,550	14,624	14,794	29,418
Baida	11,867	29,567	41,482	24,841	62,651	87,491
Taiz	56,955	112,338	169,231	125,906	237,248	363,154
Jawf	7,541	26,527	34,060	15,468	58,825	74,293
Haja	29,469	102,877	132,417	62,290	223,717	286,007
Hudaidah	43,598	97,278	140,737	91,992	205,279	297,271
Hadmout	12,595	21,559	34,154	26,663	44,882	71,545
Dhamar	16,834	67,460	84,298	36,738	141,583	178,321
Shabwah	8,869	27,290	36,141	18,463	56,562	75,025
Sa'adh	4,273	29,376	33,723	8,899	63,443	72,342
Sana'a	22,925	83,300	106,249	48,766	175,954	224,720
Aden	3,311	4,050	7,361	6,768	8,462	15,231
Laheg	16,086	35,294	51,336	34,405	73,243	107,648
Mareb	7,938	16,533	24,475	16,959	35,378	52,337
Mahweet	7,566	22,601	30,198	16,131	48,342	64,473
Mahrah	1,211	1,461	2,671	2,586	3,170	5,756
Amran*	11,635	53,104	64,774	24,420	110,753	135,172
Daleh	9,351	23,208	32,552	19,936	48,560	68,496
TOTAL	347,520	915,845	1,263,364	742,714	1,935,149	2,677,863

Table 4. Comparison of CTE program sizes

	Coverage	Total annual budget (millions of dollars)	Percent GNI	Percent GTE	Percent GEE
Progresa (Mexico, introduced August 1997)	2.6 million households (1999)	998 (2000)	0.2	1.6	4.1
PRAF (Honduras, introduced late 2000)	47,800 households	12.5 (2001)	0.2	2.0	5.0
RPS (Nicaragua, pilot introduced October 2000)	10,000 households (2001)	10 (2001–02)	0.2	2.2	10.2
FFE (Bangladesh, introduced 1993)	2.1 million students (2000)	77 (1999)	0.2	4.2	7.9
FEP (Bangladesh, introduced 1994)	898,000 students (1998)	15 (1998)	0.04	0.7	1.4
SUF (Chile, introduced 1998)	954,000 students (1998)	70 (1998)	0.1	0.9	3.5
BE (Brazil, introduced 2001)	5 million families (2001)	680 (2001)	0.15	0.7	2.5

GNI = gross national income
 GTE = total government consumption expenditure
 GEE = government expenditures on education

Note: All data are annual for the most recent year for which data are available.

Sources: Coverage and budget: See appendix. GNI, GTE, and GEE: World Bank database.

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54. The total annual budget in would be about 14.5 million USD per year in case of transfer of YR 2,000 per child and USD 7 million (at the current not 1999 exchange rate) in the case of a transfer of YR 1,000. Taking as a base the figure reported in the BEEP I project appraisal document for the MOE budget for 1999, the program costs would be equivalent to a value around 2.5 percent or 4.7 percent of the overall MOE budget. As the following table shows, these figures are well within the range of the characteristics of CCT programs observed in several countries for which information are available.

5. CONCLUSION

55. This study looked at a cash transfer scheme as one possible instrument for helping Yemen move along the path to Education For All. The results of a series of simulations suggest that such a scheme could play an important potential role as part of a broader package of education sector reforms.

56. Simulation results showed that a hypothetical transfer of YR 1,000 or YR 2,000 per child per month would lead to a large rise in school attendance among children from poor households. At YR 1,000, the rise in attendance would be around eight percentage points, while at YR 2,000 the rise in attendance would be almost 16 percentage points, with the largest rises in attendance occurring in governorates where attendance is lowest. The total costs of such a program, assuming all children attending school among the poorest 40 percent of the population would receive the transfer, would be equivalent to a value of around 2.5 percent or 4.7 percent of the overall MOE budget, well within the range of similar programs conducted elsewhere.

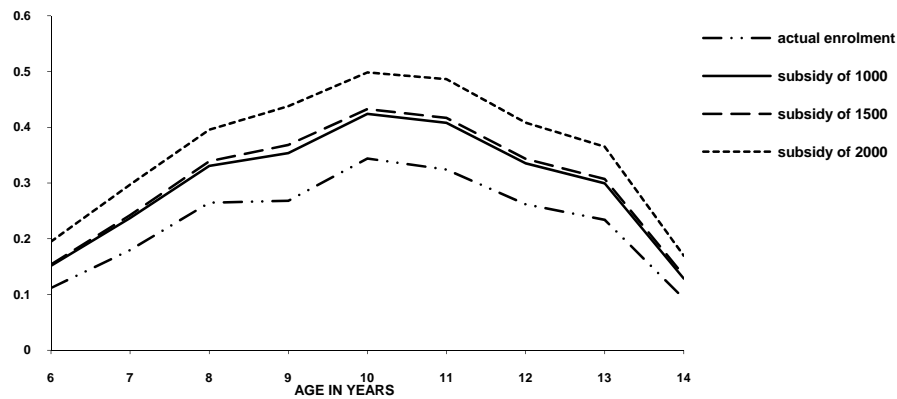
57. The simulations and cost estimates are however subject to several technical limitations relating to the nature of the data and of the problem, and therefore should be interpreted with caution. The results nonetheless suggest that a further, more in-depth assessment is warranted of the potential of cash transfer schemes to help raise enrolment among poor households in the Yemeni context.

APPENDIX I. SIMULATED IMPACT OF CASH TRANSFER ON GIRLS' ENROLMENT BY GOVERNORATE AND TRANSFER AMOUNT

Governorate 11



Governorate 12



Governorate 13



Governorate 14



Governorate 15



Governorate 16



Governorate 17



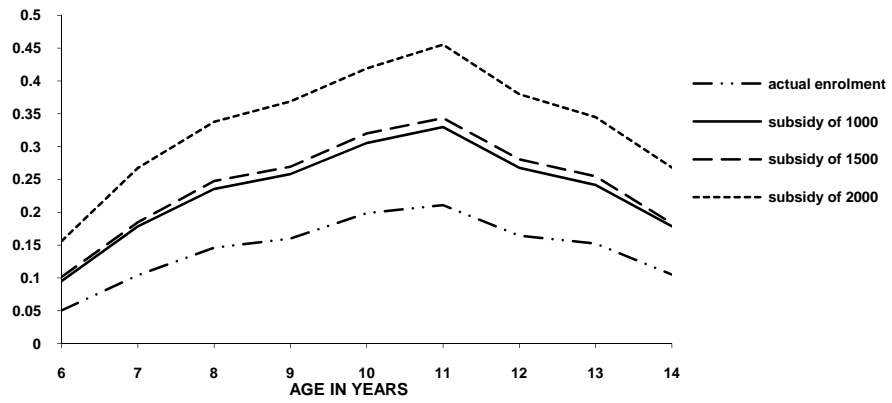
Governorate 18



Governorate 19



Governorate 20



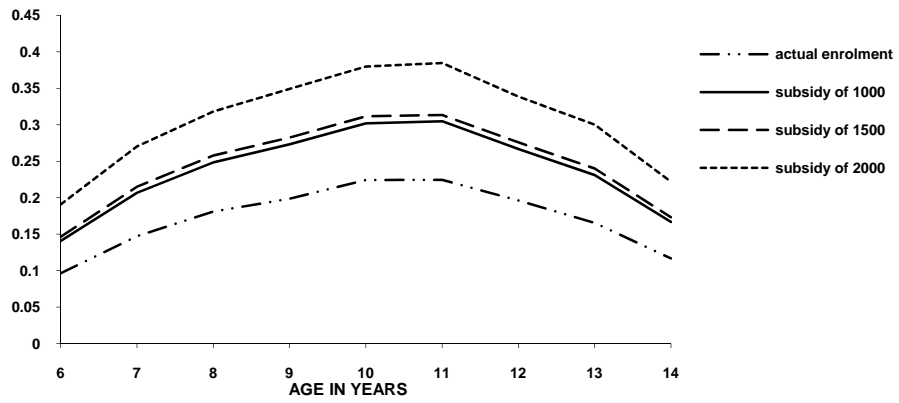
Governorate 21



Governorate 22



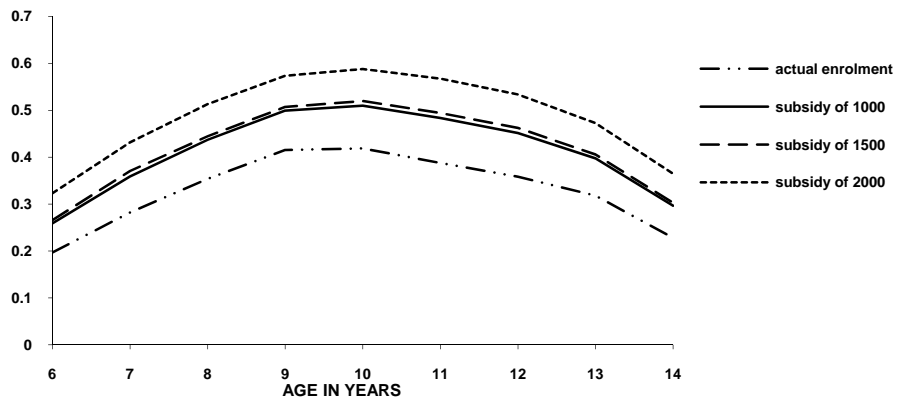
Governorate 23



Governorate 24



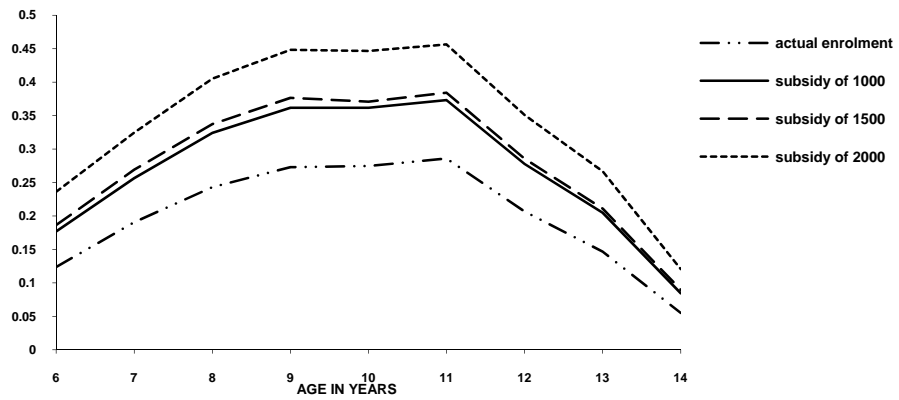
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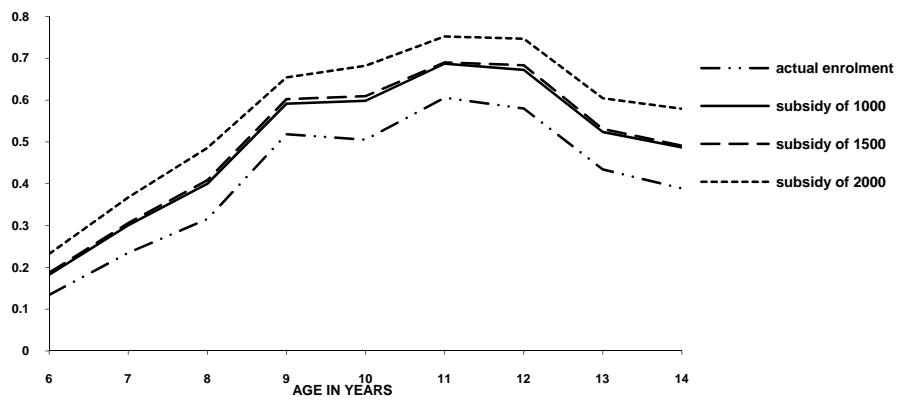
Governorate 26



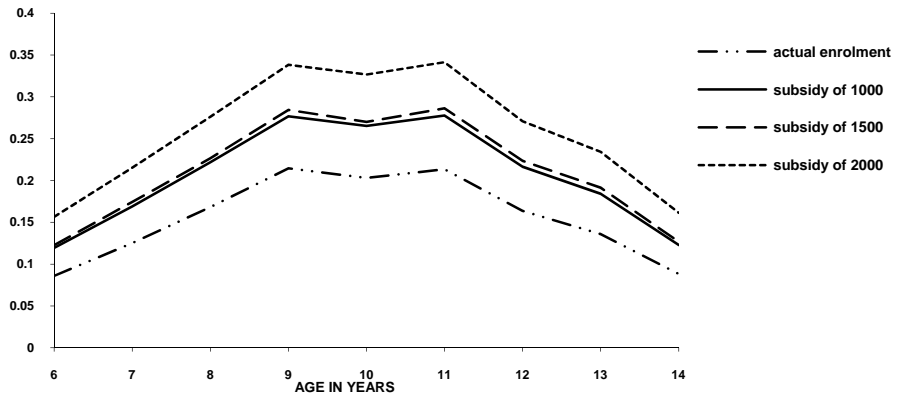
Governorate 27



Governorate 28



Governorate 29



Governorate 30

