An Evaluation of The Impact of South Africa's Child Support Grant on School Attendance

Maria Isabel Santana[†]

September 2008

Abstract

In this paper I investigate whether the unconditional cash transfer program "Child Support Grant" implemented in South Africa has improved school attendance among children. The empirical analysis uses the exogenous variation in the program's age eligibility to evaluate the impact of the grant on school attendance employing cross sectional difference-in-difference estimation. The results suggest that grants received by women had a higher impact in children's school attendance than when man received the grant. There is also evidence of a change in gender preference in favour of girls as children get older, when the mother is the caregiver. This suggests that boys face a rising opportunity cost of attending school and that the money received by the grant is not enough to forgo the income of boy's labour activities.

[†] Maria Isabel Santana is Lecturer of Economics at Universidad Catolica de Santo Domingo (UCSD).
I am grateful to Patrick Nolen and Lasse Brune for comments on earlier versions.

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1 Introduction

Schooling is widely seen as a crucial part of the development process and poverty alleviation strategies of many developing countries. Developing countries have come to realize that targeting resources towards programs that enhance children's level of human capital highly contributes to break the inter-generational cycle of poverty Rawlings and Rubio (2003). In recent years, numerous countries such as Brazil, Nicaragua, Ecuador and the Dominican Republic have been implementing cash transfer programs aimed at improving children's level of human capital.

The effects of human capital on economic development have long been shown to be positive. Going back to the sixties, Schultz Schultz (1960) proposed that a substantial part of the increase in national income in the United States was due to the formation of human capital. More recent studies suggest that 25% of the growth in U.S. per capita income from the thirties to early eighties can be explained by the growth of years of schooling Denison (1985). This theory was also empirically tested in a cross study of 98 countries in the period 1960-1985 Barro (1991). The study found that the growth rate of real per capita GDP is positively related with the initial level of human capital and negatively related with the initial level of real GDP per capita. These findings suggest that diverting resources to improve children's level of human capital may lead to higher rates of economic development, particularly in developing countries were initial levels of human capital are extremely low.

In this paper I evaluate whether an unconditional transfer implemented in South Africa had a positive impact on children's school attendance. In South Africa, the end of the apartheid era brought the need to reform the discriminatory system of social assistance implemented at the time. As a part of a new social policy, the Child Support Grant (CSG) was introduced with the main object of providing support to impoverished children. The CSG is an an unconditional cash transfer programme in the sense that receiving the grant does not depend on specific child behaviour. The unconditional

nature of the CSG raises the concern of a possible loss in efficiency when redistributing money to parents if they do not completely internalize the returns to investment in schooling. It might be more advisable to condition these transfers upon specific child behaviour in order to ensure a positive impact of the program in children's well being.

I also assess how the impact of the grant varies with the gender of the caregiver. Additionally, I also seek to investigate whether the effect of the grant changes with the gender of the child or the area of residence.

To assess these questions I use exogenous variation in grant eligibility generated by a change in age eligibility between 2003 and 2005. This natural experiment allows unbiased estimation of the impact of the CSG using a difference-in-difference approach.

The paper is organized as follows: Section 2 provides a review of the existing literature on the social and economics impacts of cash transfers programs, particularly in South Africa and an overview of the Child Support Grant (CSG). Section 3 outlines the empirical strategy. Section 4 describes the data. Section 5 presents the estimation results and briefly discusses robustness of the findings. Finally, section VI concludes.

2 Background

2.1 Literature Review

There are two main reasons of why cash transfers are expected to improve children's school attendance. First, an injection of cash into the household improves its liquidity constraint. This implies that the household can forgo the income received from children's labour activities, and therefore children may be able to attend school. Second, the cash transfer may lower the costs of attending school e.g. a higher level of disposable income may allow parents to allocate money towards tuition fees, books, uniforms, etc.

Numerous studies have empirically tested the positive impact of conditional cash transfer programs on children's school attendance. In Mexico, the cash transfer program

"Programa Nacional de Educacin, Salud y Alimentacin (PROGRESA) has been found to generate significant increases in the school attendance of children and a reduction of the participation of boys and girls in work activities (Skoufias and Parker, 2001).

Similar results were found in Ecuador, where the cash transfer program Bono de Desarrollo Humano (BDH) was implemented, causing an increase of 10 percentages points in school attendance and a negative impact of approximately 17 percentage points in child labour (Araujo and Schady, 2006). In Nicaragua as well, studies have found a positive impact of a cash transfer program in school attendance (Maluccio and Flores, 2004). The cash transfer implemented in Nicaragua, Red de Proteccin Social (RPS) generated an increase on the rate of enrolments of 17 percentage points and of 23 percentage points on school attendance. The program also reduced the percentage of working children between the age of 7 to 13 years in 4.9 percentage points.

All the programs referred to above are conditional cash transfer programs, namely programs that provide money to poor families conditional upon investment in human capital, such as sending children to school or taking them to health centres on a regular basis (Rawlings and Rubio, 2003). Therefore, under conditional cash transfers children's school attendance is very likely to improve, taking into account the demands made on the parents or caregivers in order to be able to receive the grant. The unconditional nature of the CSG may entail different results. Since the CSG is an unconditional grant, the caregiver may not direct the money solely towards the beneficiary child instead the caregiver may employ the funds on other household priorities e.g. The caregiver may choose to direct the money received by the grant to the smaller children in the household, given that older children have a higher opportunity cost of attending school. Older children are more suitable to work and contribute to the income of the household. Therefore, if the amount received for the grant is not enough to surpass the higher opportunity cost of attending school; parents may choose to spend this money on the younger children, whereas the older children are sent to work.

In South Africa, little research has been done on evaluating the impact of the CSG on school attendance. To my knowledge, only Samson et al. (2004) assessed the impact of the grant on schooling. He found that the CSG positively affected children's school attendance in three ways: i) by lowering the high costs of attending school e.g. more disposable income to purchase school supplies, uniforms, tuition, etc. ii) by lowering the opportunity costs of attending school, e.g. with a higher income, the household could forgo a child's contribution to household income and iii) by indirectly increasing the resources available to schools.

To quantify the previously mentioned effects, Samson et al. (2004) use a three stage model to evaluate the correlation between the CSG and school attendance, controlling for simultaneous interactions between the CSG and income. The approach followed in the study entails two major shortcomings. First, the empirical analysis is based on merged data from the Income and Expenditure Survey and the Labour Force Survey (2000), generating mismatches issues to the extent of 10 percent of the dataset for some variables. Second, the time of the analysis, the year 2000, was a period where the number of beneficiaries as well as take-up was extremely low, the number of beneficiaries in 2000 where only 6 percent of the amount in 2005. In addition, in the year 2000 the state maintenance grant was still in its phasing out stage, so the effect estimated in this study cannot be uniquely attributed to the CSG. [1]

In South Africa, other studies have also found that cash transfers positively affect children's school attendance by lowering the opportunity costs of attending school. Edmonds (2006) analyzes the impact of the Old Age Pension on schooling and child labour. [2] He finds that anticipated large cash transfers to the elderly are associated with increases in school attendance and with a decline in hours worked. The results of his study

[1] The State Maintenance Grant (SMG) was a cash transfer program directed to single parents. It was substituted by the Child Support Grant in 1998.

[2] The Old Age Pension is a grant paid in cash to people that fulfils an age requirement. Beneficiaries of this grant are subject to a means test. This test assures that the beneficiaries have an income under a certain threshold, therefore targeting resources to poorer people.

seem to be consistent with the idea that an inability to borrow against future income forces households to under-invest in education. Receiving large cash transfers weakens this liquidity constraint, thus reducing child labour and improving school attendance.

Analyzing how the impact of a cash transfer changes with the gender of the child clarifies the relation between the decision of caregivers to send the child to school and the opportunity cost that represents for the household that the child attends school.

Market work opportunities tend to be better for boys than for girls, thus boys face higher opportunity cost of schooling than girls (Duryea and Arends-Kuenning, 2003). This implies that, particularly for boys the amount received by the grant has to be high enough to exceed the opportunity cost of ateing school.

The variation in the impact of a cash transfer with the gender of the child in school attendance has been empirically assessed with data from Brazil. Duryea and Arends-Kuenning (2003) find that marginal effects of the grant do not vary much with gender, even though boys' schooling is slightly more responsive to the change in income than girls' schooling. Nonetheless, the issue of conditional versus unconditional cash transfers unfolds itself once again. The CSG might show a different result. If boys have a more favourable market condition, and thus have a higher opportunity cost, then a higher impact of the grant on schooling is expected on boys than in girls as long as the grant is enough to exceed the opportunity cost of attending school.

Another important issue that might affect the impact of the grant on children's school attendance is related to the characteristics of the household where children reside. A growing literature suggests that income in the hands of women is associated with larger improvements in children's well being. The enhancement of children's well being may also be related to the gender of the child.

Evidence from Brazil shows that income under the control of women has a higher effect on the family's health than income controlled by men (Thomas, 1990, 1994). The study presented by Thomas also found that there is a gender preference: mothers prefer

to devote resources to improving the nutritional status of their daughters and fathers to their sons. Duflo (2003) finds similar results. She evaluates the impact of the Old Age Pension implemented in South Africa on children's nutrition status and investigates whether the gender of the recipient affects that impact. She finds that pensions received by women have a large effect on the weight for height and height for age of girls but little effect for boys, and no effect on children is found for pensions received by men. Duflo's findings suggests that also in South Africa, public transfers in hands of women may be more directed towards enhancing the well-being of the children, particularly the welleing of girls.

While the impact of cash transfer programs in children's school attendance has been widely studied, not much research has been done on the CSG. The effect of the program in schooling, changes in the impact of the grant with the gender of the caregiver, as well as differences in impacts by child's gender and location have remained unexplored until this date. Thus this study aims to answer these questions using data from the General Household Surveys and a difference in difference estimation technique.

2.2 The Child Support Grant

South Africa's social security system dates back to the 1920s when the first social pension was introduced as a social safety net for the white population. Gradually, pensions were also provided to coloured people, but continue to exclude Africans and Indians. Moreover, discrimination was not only present in the exclusion of population groups; it was also practised by giving white people a larger pension than coloured people Triegaardt (2005).

In 1947 the Department of Welfare introduced the State Maintenance Grant (SMG) supported by the Child Protection Act of 1913. The grant was implemented to assist single parent families. It also included coloured and Indian people, thereby partially reducing the discriminatory restrictions existing at the time. In the 1970s the reduction

of inequality among the different pensions and grants provided by the state started to slowly take its course. The social Assistance Act of 1992 extended all social security measures to all South Africans citizens in an equal basis, but access to the SMG was still highly racially biased and had a low correlation with the poverty level of the beneficiary.

The CSG was launched in 1998 by the new multi-racial administration ruling at the time. The renewed social policy of the government, framed under the Reconstruction and Development Programme, provided and integrated socio-economic programme for addressing the remaining ills of the apartheid era. The CSG replaced the SMG. Conceived as a safety net to children under 7 years old, the grant did not fully concretize until the phasing out of the SMG in 2001. The main objective of the CSG was to provide support to all South African children in poverty, eliminating any sort of discrimination in the selection of the beneficiaries.

The CSG is available for any South African child's primary caregiver who meets a set of requirements to ensure that children being assisted are children with low resources possibilities. The grant is paid only for caregivers with earnings below a certain level. A caregiver qualifies for receiving the grant if the caregiver and his/her spouse earn less than 1,100 rands per month (approximately US180) and lives in a rural area or in a informal dwelling in the urban area or earn less than 800 rands per month (approximately US131) and lives in a formal dwelling in the urban sector. The threshold amount of earnings is decided using a means test.

The amount of the grant was 100 rands per child (approximately US17) when the program was initially introduced and it has been increasing over the years, reaching the level of 200 rands for the year 2007 (approximately US28). In 2003 the Department of Social Development announced a gradual increase of the minimum age to be eligible for the grant to be effective starting that year. In 2003 children with less than 9 years would be eligible for the grant, in 2004 children under 11 years and in 2005 children under 14 years of age.

3 Empirical Strategy

I will estimate the effect of the cash transfer program by making use of the exogenous variation introduced by the increase in the age requirement for eligibility. The identifying assumption for the empirical analysis is that the only factor affecting a child's school attendance that has varied between 2002 and 2005 is the age eligibility requirement for the CSG. To my knowledge, there are no other factors that considerably affected the education sector. The more important changes in the education sector occurred after the apartheid era, particularly the passing of the South African Schools Act of 1996, which made education compulsory for all South Africans from age 7 to age 15. This act affects all children in the sample inequally, as all of them were required to attend school at the age of 7.

The benefit of this approach is that it eliminates unobserved heterogeneity and selection bias due to the fact that it is based on eligibility and not on the actual grant take-up. Another advantage is that the change in the age requirement was imposed by the government, so it can hardly be argued that that is correlated with individual outcomes. Nonetheless, it is possible for households to try to change their composition, given that the gradual increase on age eligibility to be implemented in the subsequent years was announced in 2001 e.g. take care of a relative's children in order to receive the grant. But this is unlikely as households covered by this grant are under severe liquidity constraint, so adding another member to the household (maybe a relative), with the only objective to receive the grant is not optimal, given that the expenses of adding another member to the households may be higher than the income received with the grant.

Using a difference in difference technique I will compare children that are eligible according to the caregiver's income requirement but not according to the age requirement with children that are already receiving the grant. I separate the treatment units in three groups each one with the same age as the expansion in the program. The treatment and controls are identified as follows:

The first treatment group is composed of children of 7-8 years that came to be eligible in 2003 to receive the grant (but were not in 2002) against a control group of children of 6 years that were eligible both in 2002 and 2003 to receive the grant. I apply this procedure which each increase in the age eligibility of the grant. It is important to point out that I am not following a same cohort over the years; I am following a same age group over the years of different cohorts.

Figure 1: Identification of Treatment and Control Groups

Age Group	Policy year	Treatment group	Control Group
7 – 8 years	2003	Eligible children of 7 and 8 years old	Eligible children of 6 years old
9 – 10 years	2004	Eligible children of 9 and 10 years old	Eligible children of 7 and 8 years old
11 – 13 years	2005	Eligible children between 11 and 13 years old	Eligible children of 9 and 10 years old

In 2002, all children under 7 years old where age-eligible to receive the grant. I do not take this entire group as the control for the 7-8 treatment group given that children start attending school as of age 6. I only take the group of 6 years old children. In 2002, 70% of children aged 6 years were attending school, despite the fact that attending school is only compulsory for 7 to 15 year olds.

Table 3 reports the expansion of the CSG take-up as the age eligibility requirement augmented. The take-up of the grant increased considerably over the years. Looking at the years in which age eligibility has risen, it can be seen that among newly-eligible children the youngest have a higher take up rate than the older ones. This could be due to the fact that these children are all already enrolled in the program, and the increase in the age eligibility is just allowing them to keep receiving the income they were receiving the year before.

The average take-up of the grant in the years of the expansion in age eligibility (2003-2005) among all the age groups is of approximately 17% of eligible children. This suggests that choosing the year of the increase in age eligibility as the post treatment period is not appropriate given that the take-up rate is too low to asses the impact of the grant.

Figure 2: Take-up of The Child Support Grant (CSG) by age and gender

Age	2002	2003	2004	2005
0	22.3%	15.8%	25.4%	27.4%
1	28.2%	38.3%	50.5%	57.4%
2	29.8%	43.7%	58.7%	65.0%
3	33.0%	45.9%	59.4%	68.0%
4	30.3%	43.5%	60.1%	67.8%
5	27.7%	47.0%	59.5%	69.3%
6	26.4%	37.2%	58.3%	68.1%
7	0.0%	23.9%	55.4%	62.5%
8	0.0%	7.2%	46.0%	59.4%
9	0.0%	3.2%	30.6%	56.7%
10	0.0%	1.2%	11.2%	48.8%
11	0.0%	1.0%	4.4%	31.6%
12	0.0%	0.8%	1.1%	13.6%
13	0.0%	0.6%	1.0%	5.8%

Note: Cells above the line represent children age eligible to receive the grant. The shaded area represents the increase in age eligibility.

Source:Author's calculations from the GHS 2002-2005.

However, the estimated impact of the program in the year the treated children become eligible is the effect of offering the grant. Consider the following example: In 2001 the South African government decided to offer a grant to poor families with children under seven years old and they expected that households that satisfy these requirements would take up the grant or "pickup the treatment". Also consider that the take-up rate was 10% in the first year. This take-up rate is the effect of offering the grant to the chosen population. Thus, the estimated impact of the program in the year of implementation is driven by the 10% that picked up the treatment.

An alternative identification strategy of the treatment and control groups will be to select as the treated group only those who are actually receiving the grant in the post treatment period. The problem with this alternative is that the outcome variable may be affected by the fact that the caregiver's decision to send children to school may be endogenous in the sense that unobserved characteristics may be correlated with both the take-up decision and the outcome variable. Choosing children who are receiving the treatment as a control group may cast doubt on the randomness of the chosen treatment group.

The low take-up of the grant might be driven by a low publicity of the program, complications in program implementation and difficulties to obtain the necessary documents to apply for the grant (Goldblatt et al., 2006). Another reason for the low take-up of the grant, particularly in the older newly-eligible children (which have to start the application process for the first time, unlike children that where already eligible the previous year) is related to the timing of the GHS. The survey is implemented in July of every year. The expansion in the age eligibility of the grant takes place at the start of the financial year of the South African government, which is in April of every year. Therefore, the data provided by the survey only picks up three months of the program for the treated.

Taking this into account, I also report the estimates using as the post period the year immediately after the change in age eligibility, i.e. for the age group of 7-8 years the pre period is 2002, and the post period is now 2004; for the age group of 9-10 years the pre period is 2003 and the post period is now 2005. The same could not be done for the age group of 11-13 years, given that the GHS is only available for the years 2002 to 2005. The results of this alternative estimation are presented in the robustness check section.

I use a probit model to estimate the impact of the grant on the probability that the eligible child attends school controlling for group effects and a year effect. The interaction term identifies the impact of the CSG i.e. the effect of being in the treatment group in the period prior to the increase in age eligibility compared to being a child of 9-10 year in 2004. I also control for children characteristics, characteristics of the caregivers and household characteristics.

$$Y_i = \alpha + \beta T_i + \gamma t_i + \delta(T_i \cdot t_i) + \zeta X_i + \epsilon_i, \tag{1}$$

where T_i is a dummy variable that indicates the treatment status. T_i takes the value of 1 if the individual receives the treatment, i.e. children aged 9-10 years, and 0 if the individual does not receive treatment, i.e. children aged 7-8 years.

t_i is a dummy variable that denotes the period in question. t_i takes the value of 1 in 2004, i.e. post-treatment, and 0 if the period refers to the time before the treatment group receives treatment, i.e. pre-treatment or 2003.

The coefficient of main interest is δ, which represents the true effect of treatment. δ represents the impact of the grant on the probability of children to attend school. β and γ are the treatment group specific effect (this coefficient accounts for permanent differences between treatment and control) and time trend effect (common to control and treatment groups). X_i is a vector of household and individual characteristics.

I am assuming the following:

- t_i is mean-independent of Y_0^C, Y_1^C, Y_0^T, Y_1^T given T_i and X_i.
- $E[Y_0^C|X]= E[Y_1^C|X]$ and $E[Y_0^T|X]= E[Y_1^T|X]$.
- The same time effect holds across treatment and control groups.

To better understand assumption ii), I present the following example: examine $E[Y_0^T|X]= E[Y_1^T|X]$, for the age group of 9-10 years. The right-hand side corresponds to the average school attendance for those with 9-10 years in 2004, whereas the left-hand side correspond the average school attendance for those with 9-10 years in 2003. The assumptions imply that those with 9-10 years in 2003 should be similar to those with 9-10 years in 2004.

Without these assumptions, there will be four different subpopulations, and the difference in difference identification would fail. Given the above assumptions hold, the averages school attendance is:

$$E[Y_0^T|X] = \alpha + \beta + \zeta \tag{2}$$

$$E[Y_1^T|X] = \alpha + \beta + \gamma + \delta + \zeta \tag{3}$$

$$E[Y_0^C|X] = \alpha + \zeta \tag{4}$$

$$E[Y_1^C|X] = \alpha + \gamma + \zeta \tag{5}$$

Equation 2 and 3 are the expected value of the outcome variable for the treatment group before and after the change in age eligibility.
Equation 4 and 5 are the expected value of the outcome variable for the control group before and after the change in age eligibility.

Thus, the difference-in-difference estimator is:

$$\hat{\delta}_{DD} = E[Y_1^T|X] - E[Y_0^T|X] - (E[Y_1^C|X] - E[Y_0^C|X]) \tag{6}$$

The first set of differences ($E[Y_1^T]$ - $E[Y_0^T]$) represents the difference between the post-treatment and pre-treatment groups and the second set of differences ($E[Y_1^C]$ - $E[Y_0^C]$) represents the difference between the post-control and pre-control groups.

The difference in difference estimator presented above is analogous to:

$$\hat{\delta}_{DD} = \alpha + \beta + \gamma + \delta + \zeta - (\alpha + \beta + \zeta) + [\alpha + \gamma + \zeta - (\alpha + \zeta)],$$

$$\hat{\delta_{DD}} = \alpha + \beta + \gamma + \delta - (\alpha + \beta) + [\alpha + \gamma - \alpha],$$

$$\hat{\delta}_{DD} = \gamma + \delta - [\gamma],$$

$$\hat{\delta}_{DD} = \delta,$$

The estimated regression is:

$$E[Y_i|X] = \Phi(\alpha + \beta T_i + \gamma t_i + \delta(T_i \cdot t_i) + \zeta X_i), \tag{7}$$

where Φ is the cumulative standard normal distribution function. The coefficients reported are the marginal effects, explicitly the change in the conditional mean of y when the explanatory variable changes by one unit. The marginal effect for a single explanatory variable is:[3]

$$\frac{\partial \Phi(.)}{\partial X_i} = \zeta \Phi'(.) \tag{9}$$

However, when there is an interaction term, the marginal effect is the cross derivative of the expected value of y (Ai and Norton, 2003), specifically:

$$\frac{\partial^2 \Phi(.)}{\partial T_i \cdot t_i} = \delta \Phi'(.) + (\beta + \delta t_i)(\gamma + \delta T_i)\Phi''(.) \tag{10}$$

The correct estimation of the marginal effect of the interaction term is crucial to the analysis of the impact of the CSG on children's school attendance. Several studies that examine the impact of cash transfer on children's school attendance using probit models report the marginal effects of the interaction terms, as if it were the effect of a single explanatory variable. This, leads to incorrect estimates and standard errors of the impact of a program on the outcome variable, often of the opposite sign of the true effect.

Besides estimating the effect of the grant on children's school attendance using a probit model, an alternative approach is to use a linear probability model. However, this approach entails a major caveat: The predictions of the outcome variable may fall outside of the range of 0 and 1. This is not possible since a probability cannot be out of

[3] I am assuming that the explanatory variables are continuous. If the explanatory variables are discrete, then

$$\frac{\partial \Phi(.)}{\partial X_i} \tag{8}$$

represent the difference of Φ with respect to X.

the 0 and 1 interval. Thus, the linearity that makes the linear probability model easy to use is also its major flaw (Stock and Watson, 2003; Greene, 2003). Therefore, the linear probability model is not the model of choice for this paper.

In order to compute robust standard errors for the estimates of the impact of the program, dependence of with-in household observations is accounted for by using clustered standard errors. The GHS is a complex survey; it uses a stratified multistage cluster sampling design. The use of clustered samples implies that the data within a cluster may be correlated owing to the presence of a common unobserved cluster-specific term (Cameron and Trivedi, 2005). Clustered samples also imply that the observations are not independent. Failure to control for this may lead to a considerable bias in the estimated standard errors of the program impact. For this reason, the regression models control for clustering at the household level.

Applying the clustering technique at the household level is important for two reasons: First, there may be more then one eligible child in the same household; second, the GHS may survey a same dwelling over time whether it corresponds to a same household or not. Therefore, it is possible to interview a same individual from one year to another if the household has not moved, given that the household identifier is assign based on the location of the dwelling.

The dependent variable is a dummy variable for school attendance. The vector of individual characteristics includes the child's gender, race, the province he/she belongs too, an urban/non-urban variable, the level of education of the mother and father of the child, the employment status of the parents, the race and age of the parents; the vector also includes household characteristics such as access to landline, sewer connected toilet in household, fetch of water and wood, piped water in household, rubbish removal by local authorities, main source of income, if there are adults in the household that experience hunger and the presence of older members in household.

The rapid response to the policy effect of the dependent variable enables to correct

for possible problems in the identification of the control and treatment groups. There might be the possibility that children in the treatment group received the treatment in the period before to the one where the policy change took place. In the age group of 9-10 years, for example, children with 9 years in 2004 might have been receiving the grant in 2003, as there would have been 8 years old in 2003 and therefore eligible (by the age requirement). This could be corrected by simply taking from the treated group of eligible children those who are receiving the grant in 2003. However, the mentioned approach corrects for the possibility that eligible children of the treated group in 2003 are receiving the grant, but not for the fact that eligible children of the treated group in 2004 received the grant in the pre treatment year. I might still have the effect on the treated group been biased by some children already receiving the grant due the fact that we have cross section data and not a panel, thus taking out the children receiving the grant in 2003, does not guarantee that there will not be eligible treated children in 2004 that received the treatment on 2003.

School attendance answers the question if the child is going to school in the year of the survey, and does not necessarily reflect the past history of school attendance of the child. The fact that the child is going to school in that particular year depends on the decision of the caregiver (parent), the latter being influenced by the fact that he or she is receiving the grant for this particular year and experiencing an improvement in his (the household) budget constraint. Therefore, the impact of the program on a 9 year old child receiving the grant in 2004 and that also received it on 2003 will not be biased by the fact that he received the grant in the pre treatment period when school attendance is used as dependent variable.

4 Data and Descriptive Statistics

4.1 Data

To asses the impact of the CSG on children's school attendance I use South Africa's General Household Survey (GHS) for the years 2002 - 2005. The GHS is an annual survey of approximately 100,000 individuals and more than 25,000 of households. This survey aims to provide representative information about the composition and characteristics of South African households. Given that the GHS is a representative survey of South African households, the results estimated with the data to the population of South Africa as a whole.

The GHS is a complex survey; the sampling procedure involves explicit stratification by province and within each province, by urban and non-urban areas. A sample of primary sample units (PSUs) is drawn in each stratum. In each selected PSU a systematic sample of ten dwelling units is drawn. The sample design of this survey consists of a multistage sampling within strata, with households selected as a result of several sequential draws. First, a subset within the strata is randomly drawn; second a subset of all households in the selected PSU is drawn, where clustered sampling may be permitted.

To estimate the effect of the program is necessary to clearly identify the treatment and control groups. The gradual expansion of the age eligibility allows me to compare very similar groups, both treatment and control group are eligible to receive the grant based on the requirement that their caregiver earns below a certain income level. The only difference between the groups is that before the policy is implemented, the control group is age eligible to receive the grant but the treatment groups is not.

The GHS has detailed information regarding the type of social grants and which member of the household is receiving the grant. It also allows me to establish the relationship among members of the household, which is crucial in order to establish children's eligibility for the grant.

To assign caregiver eligibility, I follow the methodology of Budlender et al (Budlender et al., 2005):

- For children who are living with their mother, the mother is the primary caregiver; we need to know the mother's income (if she has any) and her spouse or partner's income as well. If she's is divorced or unmarried, an estimation of monthly maintenance is imputed. If the mother is widowed, only the income of the mother is taken into account. [4] - Children living with their father and not with their mother have the father as primary caregiver. If the father is married, the income of the spouse (or partner) is taken into account. If the father is widowed, only the income of the father is imputed. - Children who are living with none of their biological parents, but for whom a grandparent is the head of the household, I take the grandparent's income as the income of the primary caregiver. If the grandparent has a spouse (or partner) I also impute the spouse's income.

In 2005, 73.6 percent of children younger than 14 years of age were assigned their mother as primary caregiver, 2.7percent had their father assigned and 16.8percent had their grandparent assign. A 6.9 percent of children under 14 years old did not have a biological parent or their grandparent as a primary caregiver; these children were not included in the analysis. Given that the majority of children live have their mother as their caregiver (mothers can live with their/husband or partner or be single mothers), the results are presented only for this group. This allows for less heterogeneity among households. Single father are also analyzed in particular cases.

In order to asses whether a child is eligible or not, I need to know the primary caregiver's income. The income variable in the GHS is surveyed by a question that asks the total salary earned in the caregiver's main job. If the person refuses to state the amount, an income category is provided for the respondent to choose. This requires making some imputations. To assign the income to respondents who gave a categorical answer I assign

[4] Budlender et al derive the monthly maintenance estimation from a survey performed by the Commission on Gender Equality in 2004. The survey was carried out among 180 women who where collecting maintenance payments at court. They assigned 200 rands for maintenance to divorced or unmarried mothers, which was the median amount of maintenance awarded per child reported in the survey.

the income categories to those who responded a point value, and then take the mean of each category and assign it to the respondents with categorical responses. In 2005, 68.2 percent of all employed workers gave a point value response to the income question, 24.9 percent gave a categorical answer, and 6.7 percent did not know or refused to respond the income question.

4.2 Descriptive Statistics

To assess whether the assumptions of the model hold, I compare the characteristics of both groups in the period prior to the implementation of the policy change. A randomized assignment of control and treatment group entails that the sample of both groups are the same on average (Behrman and Todd, 1999). Randomization implies that the joint distribution of treatments and controls, in the pre policy period, are equal:

$$F[Y_0^C, X_i] = F[Y_0^T, X_i],$$

where F denotes a cumulative distribution function.

It also implies that the distribution of the outcome variable for the control and treatment group before the policy and the distribution of control variables for the control and treatment group are equal:

$$F[Y_0^C] = F[Y_0^T],$$

$$F[X_i^C] = F[X_i^T],$$

Equality of the marginal distributions also implies equality of means of the Y_0 and X_i variables. To verify whether the randomization was successful, I check if the two conditions stated above for the outcome and control variables hold. therefore, I test the

equality of means of the outcome and control variables comparing the treatment and the control group in the period prior to the increase in age eligibility.

Different variable types require different types of tests in order to check the equality of means. For binary discrete variables, a simple t-test for equality of the probability that the variables take the values of 1 or 0 can be applied. For discrete variables that take three or more values I can apply a Pearson chi-squared test of the equality of cell proportions (Behrman and Todd, 1999).

Households with eligible children for the three age groups have similar characteristics (Table 4). But compared with non-eligible households, these households are poorer even after the grant is received. Households with eligible children are characterized by the absence of the father (approximately 50%) whereas in non-eligible households the majority lives with both parents (65%). Other household characteristics such as availability of piped water, access to landline, toilet connected to sewer, rubbish removal by local authorities are considerably better in non eligible households.

The equality of means test show that the mean values for the control and treatment groups are not statistically different for almost all household characteristics. The characteristics of the mother are statistically different in some cases, specifically mother's age. For the 9-10 years group all other mother characteristics are not statistically different. For the other two groups some difference in characteristics are found. The characteristics of the father are more similar than that of the mother. A difference important to address is the one of the outcome variable (school attendance) for the control and treatment of the age group of 7-8 years. The control group in the pre policy period has a mean school attendance of 66%, and the treatment group for the same period has a mean school attendance of 92%. This difference is due to the fact that by law, children are required to start attending school since age 7. However, a high proportion of South African children start attending school at the age of 6.

To correct for the possible bias that the difference in some of the characteristics may cause on the estimated impact of the CSG, I control for them on the estimated regressions. Another possibility would be to use a propensity score matching model, which implies pairing treatment and comparison units that are similar in term of the observable characteristics (Dehejia and Wahba, 2002),but the application of this technique is outside of the scope of this paper.

Figure 3: Descriptive Statistics of Household Characteristics

Variables	Age group 7-8 (Pre-2002)		Age group 9-10 (Pre-2003)		Age group 11-13 (Pre-2004)		Non Elegible Children	Test for Equality of mean: Pr(|T|>|t|)		
	Control	Treat	Control	Treat	Control	Treat		Ho: diff = 0 | Ha: diff != 0		
	6 years	7-8 years	7-8 years	9-10 years	9-10 years	11-13 years		Age Group 7-8	Age Group 9-10	Age Group 11-13
School Attendance	0.664	0.924	0.944	0.98	0.985	0.984	0.973	0.000	0.000	0.7042
	-0.013	-0.006	-0.004	-0.003	-0.002	-0.002	-0.001			
HH member of 56 or more years	0.47	0.482	0.473	0.485	0.487	0.503	0.184	0.3137	0.3373	0.1863
	-0.014	-0.011	-0.01	-0.01	-0.01	-0.008	-0.003			
Both Parents in HH	0.225	0.23	0.221	0.231	0.215	0.229	0.656	0.8035	0.5299	0.1414
	-0.011	-0.009	-0.008	-0.008	-0.008	-0.007	-0.004			
Only the mother in the HH	0.513	0.457	0.479	0.461	0.467	0.452	0.238	0.0038	0.2592	0.2714
	-0.014	-0.011	-0.01	-0.01	-0.01	-0.008	-0.003			
Only the father in th HH	0.032	0.032	0.033	0.031	0.034	0.028	0.042	0.78	0.812	0.2744
	-0.005	-0.004	-0.003	-0.003	-0.003	-0.003	-0.002			
Formal Dwelling	0.905	0.895	0.915	0.912	0.911	0.915	0.909	0.1992	0.7452	0.5709
	-0.008	-0.007	-0.005	-0.006	-0.006	-0.004	-0.002			
Rural Area	0.677	0.632	0.667	0.666	0.646	0.652	0.439	0.0036	0.8962	0.9304
	-0.094	-0.137	-0.065	-0.042	-0.389	-0.317	-0.163			
Lighting elect. from main supply	0.62	0.624	0.655	0.656	0.682	0.702	0.9	0.6042	0.806	0.0812
	-0.013	-0.01	-0.009	-0.009	-0.009	-0.007	-0.002			
Piped Water in HH	0.449	0.475	0.463	0.444	0.46	0.481	0.811	0.1137	0.1639	0.048
	-0.013	-0.011	-0.01	-0.01	-0.01	-0.008	-0.003			
Toilet connected to sewer	0.238	0.287	0.272	0.267	0.275	0.278	0.636	0.002	0.6758	0.5283
	-0.012	-0.01	-0.009	-0.009	-0.009	-0.007	-0.004			
Rubbish removal by local auth.	0.284	0.345	0.316	0.317	0.335	0.339	0.69	0.0002	0.8863	0.5613
	-0.012	-0.01	-0.009	-0.009	-0.009	-0.007	-0.004			
Access to Landline in HH	0.112	0.119	0.088	0.101	0.086	0.099	0.29	0.9662	0.1634	0.0598
	-0.009	-0.007	-0.005	-0.006	-0.005	-0.005	-0.004			
Distance to Welfare Office										
0-14 min	0.107	0.116	0.108	0.113	0.101	0.098	0.211	0.4469	0.572	0.6048
	-0.008	-0.007	-0.006	-0.006	-0.006	-0.005	-0.003			
15-29 min	0.286	0.274	0.29	0.272	0.288	0.296	0.417	0.4249	0.1177	0.4284
	-0.012	-0.009	-0.009	-0.009	-0.009	-0.007	-0.004			
30-45 min	0.276	0.271	0.279	0.283	0.27	0.277	0.237	0.8025	0.7168	0.5434
	-0.012	-0.009	-0.009	-0.009	-0.009	-0.007	-0.003			
45-59 min	0.115	0.141	0.128	0.143	0.142	0.14	0.07	0.0183	0.112	0.8225
	-0.009	-0.007	-0.006	-0.007	-0.007	-0.005	-0.002			
60 min or more	0.216	0.198	0.194	0.189	0.198	0.189	0.065	0.1618	0.6488	0.3126
	-0.011	-0.008	-0.008	-0.008	-0.008	-0.006	-0.002			
Distance to Primary School										
0-14 min	0.435	0.452	0.436	0.431	0.39	0.401	0.523	0.5106	0.545	0.3433
	-0.013	-0.011	-0.009	-0.01	-0.009	-0.008	-0.004			
15-29 min	0.372	0.346	0.362	0.35	0.383	0.384	0.343	0.1533	0.4804	0.9712
	-0.013	-0.01	-0.009	-0.009	-0.009	-0.008	-0.004			
30-45 min	0.141	0.153	0.14	0.152	0.169	0.161	0.104	0.201	0.1664	0.4186
	-0.009	-0.008	-0.007	-0.007	-0.007	-0.006	-0.002			
45-59 min	0.027	0.022	0.032	0.036	0.025	0.024	0.019	0.3551	0.5978	0.7293
	-0.004	-0.003	-0.003	-0.004	-0.003	-0.002	-0.001			
60 min or more	0.026	0.026	0.03	0.032	0.033	0.029	0.011	0.7878	0.7621	0.4417
	-0.004	-0.003	-0.003	-0.003	-0.003	-0.003	-0.001			
Distance to Secondary School										
0-14 min	0.309	0.323	0.288	0.293	0.231	0.258	0.408	0.4007	0.8168	0.007
	-0.013	-0.01	-0.009	-0.009	-0.008	-0.007	-0.004			
15-29 min	0.357	0.329	0.345	0.33	0.38	0.363	0.372	0.0875	0.295	0.1436
	-0.013	-0.01	-0.009	-0.009	-0.009	-0.008	-0.004			
30-45 min	0.208	0.22	0.217	0.223	0.236	0.227	0.161	0.4573	0.5482	0.3249
	-0.011	-0.009	-0.008	-0.008	-0.008	-0.007	-0.003			
45-59 min	0.054	0.052	0.068	0.066	0.069	0.07	0.033	0.9352	0.9103	0.8356
	-0.006	-0.005	-0.005	-0.005	-0.005	-0.004	-0.001			
60 min or more	0.073	0.076	0.083	0.088	0.085	0.082	0.026	0.722	0.5443	0.6853
	-0.007	-0.006	-0.005	-0.005	-0.005	-0.004	-0.001			
Main Source of Income in HH										
Salaries/Wages	0.307	0.336	0.267	0.264	0.246	0.244	0.914	0.0639	0.468	0.9025
	-0.013	-0.01	-0.008	-0.009	-0.008	-0.007	-0.002			
Remittances	0.23	0.219	0.221	0.225	0.204	0.198	0.007	0.6075	0.5816	0.5401
	-0.011	-0.009	-0.008	-0.008	-0.008	-0.006	-0.001			
Pensions and Grants	0.385	0.349	0.433	0.427	0.48	0.481	0.025	0.0121	0.6977	0.9856
	-0.013	-0.01	-0.009	-0.01	-0.01	-0.008	-0.001			
Sales of farm products	0.01	0.01	0.009	0.01	0.003	0.008	0.01	0.9406	0.7964	0.017
	-0.003	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001			
Other non-farm income	0.05	0.054	0.049	0.051	0.055	0.06	0.044	0.6507	0.599	0.3703
	-0.006	-0.005	-0.004	-0.004	-0.004	-0.004	-0.002			
No income	0.018	0.031	0.02	0.023	0.011	0.008	0.001	0.0079	0.3178	0.2297
	-0.004	-0.004	-0.003	-0.003	-0.002	-0.001	0			
Hungry Child in HH	0.404	0.376	0.374	0.37	0.331	0.324	0.119	0.1074	0.9251	0.409
	-0.013	-0.01	-0.009	-0.009	-0.009	-0.007	-0.003			
Hungry Adullt in HH	0.436	0.4	0.389	0.387	0.345	0.335	0.13	0.0341	0.9135	0.2676
	-0.013	-0.01	-0.009	-0.009	-0.009	-0.007	-0.003			
N	1359	2209	2733	2649	2655	4007	16582			

Source: Author's calculations from the GHS 2002-2005.

Figure 4: Descriptive Statistics for the parents of the children

Variables	Age group 7-8 (Pre-2002)		Age group 9-10 (Pre-2003)		Age group 11-13 (Pre-2004)		Non Elegible Children	Test for Equality of mean: Pr(|T|>|t|)		
	Control	Treat	Control	Treat	Control	Treat		Ho: diff = 0 | Ha: diff != 0		
	6 years	7-8 years	7-8 years	9-10 years	9-10 years	11-13 years		Age Group 7-8	Age Group 9-10	Age Group 11-13
Mother Characteristics										
Mother age										
Less tha 16 years	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.31	0.42
	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
16 - 25 years	0.15	0.09	0.08	0.03	0.03	0.01	0.02	0.00	0.00	0.00
	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00			
26-35 years	0.48	0.43	0.45	0.40	0.41	0.32	0.37	0.04	0.00	0.00
	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
36-45 years	0.29	0.34	0.36	0.40	0.38	0.42	0.48	0.02	0.00	0.00
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
46-55 years	0.07	0.11	0.10	0.15	0.15	0.21	0.12	0.00	0.00	0.00
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
56-70 years	0.01	0.02	0.02	0.02	0.03	0.04	0.01	0.07	0.43	0.01
	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Mother's race										
African	0.91	0.89	0.90	0.90	0.89	0.90	0.72	0.05	0.72	0.19
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
Coloured	0.08	0.11	0.09	0.09	0.10	0.09	0.24	0.06	0.81	0.07
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
Indian	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.59	0.80	0.17
	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Mother's Education										
Primary	0.24	0.25	0.24	0.25	0.25	0.27	0.14	0.70	0.87	0.18
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
Secondary	0.59	0.57	0.59	0.56	0.58	0.54	0.64	0.48	0.11	0.00
	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
Mother's Employment										
Not Econ. Active	0.47	0.48	0.52	0.52	0.53	0.55	0.27	0.76	0.95	0.15
	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
Employed	0.25	0.27	0.24	0.24	0.24	0.25	0.63	0.29	0.95	0.21
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
Unemployed	0.28	0.26	0.23	0.23	0.24	0.20	0.10	0.16	0.99	0.00
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00			
N	1047.00	1598.00	1980.00	1898.00	1834.00	2791.00	15912.00			
Father Characteristics										
Father's age										
16 - 25 years	0.021	0.011	0.004	0.004	0.003	0.001	0.004	0.2216	0.9973	0.3252
	-0.007	-0.004	-0.002	-0.002	-0.002	-0.001	-0.001			
26-35 years	0.277	0.246	0.223	0.16	0.168	0.096	0.182	0.2805	0.0023	0
	-0.023	-0.017	-0.015	-0.014	-0.014	-0.009	-0.003			
36-45 years	0.349	0.384	0.376	0.394	0.36	0.357	0.508	0.2715	0.491	0.8718
	-0.025	-0.02	-0.018	-0.018	-0.018	-0.015	-0.004			
46-55 years	0.232	0.232	0.252	0.272	0.29	0.33	0.259	0.9864	0.3861	0.075
	-0.022	-0.017	-0.016	-0.017	-0.017	-0.014	-0.004			
56-70 years	0.107	0.107	0.12	0.145	0.158	0.187	0.045	0.9974	0.1572	0.1248
	-0.016	-0.013	-0.012	-0.013	-0.014	-0.012	-0.002			
More than 70 years	0.013	0.02	0.025	0.025	0.021	0.029	0.001	0.4568	0.9933	0.2733
	-0.006	-0.006	-0.006	-0.006	-0.005	-0.005	0			
Father's race										
African	0.883	0.862	0.862	0.878	0.846	0.88	0.712	0.3664	0.359	0.043
	-0.017	-0.014	-0.013	-0.012	-0.014	-0.01	-0.004			
Coloured	0.101	0.122	0.12	0.109	0.14	0.097	0.23	0.347	0.5219	0.0058
	-0.016	-0.013	-0.012	-0.012	-0.013	-0.009	-0.004			
Indian	0.016	0.016	0.017	0.012	0.013	0.021	0.057	0.9673	0.514	0.2523
	-0.006	-0.005	-0.005	-0.004	-0.004	-0.004	-0.002			
Father's Education										
Primary	0.32	0.319	0.299	0.355	0.322	0.333	0.173	0.9507	0.0209	0.634
	-0.024	-0.019	-0.017	-0.018	-0.018	-0.014	-0.003			
Secondary	0.443	0.466	0.466	0.407	0.464	0.43	0.61	0.528	0.0292	0.1691
	-0.026	-0.02	-0.019	-0.018	-0.019	-0.015	-0.004			
Father's Employment										
Not Econ. Active	0.269	0.292	0.343	0.38	0.384	0.406	0.031	0.4117	0.1663	0.3696
	-0.023	-0.018	-0.018	-0.018	-0.019	-0.015	-0.002			
Employed	0.48	0.468	0.416	0.395	0.399	0.398	0.938	0.7185	0.4428	0.9767
	-0.026	-0.02	-0.018	-0.018	-0.019	-0.015	-0.002			
Unemployed	0.251	0.24	0.241	0.225	0.217	0.196	0.031	0.6572	0.4923	0.2922
	-0.022	-0.017	-0.016	-0.016	-0.016	-0.012	-0.002			
N	375	609	726	724	677	1060	12452			

Source: Author's calculations from the GHS 2002-2005.

5 Estimation Results

5.1 Main Results

The results of estimating equation (2) using a probit model are presented in table 6. The estimates reported are the marginal effects of the probit regressions. Columns 1-3 show the estimates for each age group (7-8 years, 9-10 years and 11-13 years). The bottom panel of the table reports the effect of the grant on school attendance, measured by the cross-derivative of the interaction term.

For children of the age groups 7-8 and of all population groups the impact of the grant is negative but insignificant. For this group, the probability of attending school decreases in 2.5 percentage points. The age group of 9-10 years reports a similar and significant effect of 2 percentage points. For the age group of 11-13 years the impact of the grant on schooling although positive is small and insignificant. For this group the probability of attending school increases in 0.6 percentage points.

Columns 4-6 estimate the effect for black African children of the three age groups. For 7-8 years black children the CSG reduces the probability of attending school in 4.3 percentage points, this effect is significant at the 5% level. For the age groups of 9-10 years and 11-13 years the effects are the same as the ones reported when all population groups are taking into account.

Table 7 reports the effect of the grant independently for boys and girls. For the age groups of 7-8 and 9-10 years the impact of the CSG is lower for girls. For girls of the first age group the probability of attending school decreases in 5.7 percentage points while for boys the probability of attending school rises by 1 percentage point. However, as the age of the groups rises, the impact is higher for girls. For the age group of 9-10 years the impact becomes rather similar, boys perceive a decrease in the probability of attending school of 1.6 percentage points and girls have a negative impact of 2.2 percentage points. For the older age group, the effect is now positive and slightly higher for girls. As boys

get older, the opportunity cost of attending school rises, as they are more suitable to join the labour force. The results suggest that for older boys, the amount received by the grant is not enough to forgo the perceived income of labour activities.

Table 8 reports the estimates separately the effects of the program by gender of the caregiver. Columns 1-3 report the estimations for each of the age group when only the mother is in the household. Column 4 reports the estimates for the age group 11-13 when only the father is in the household. [5]

Previous studies show that the decision on how to allocate resources among the families changes if the person receiving the grant is a man or a woman (Duflo, 2003; Thomas, 1990, 1994). The results are consistent with the literature. For children of the age group 11-13 years the impact of the grant on school attendance is positive when their mother is the sole caregiver and negative when they are under the care of the father. The impact of the grant for children living only with their mother of each age group is similar to the reported effect for the entire population; it is negative for the age groups of 7-8 and 9-10 years and only significant for the later, and positive for the age group of 11-13 years. For children of the age group 11-13 living only with their father the impact is negative. For this group the probability of attending school decreases in 4.5 percentage points.

Table 8 reports the effect of the grant independently for boys and girls. For the age groups of 7-8 and 9-10 years the impact of the CSG is lower for girls. For girls of the first age group the probability of attending school decreases in 5.7 percentage points while for boys the probability of attending school rises by 1 percentage point. However, as the age of the groups rises, the impact is higher for girls. For the age group of 9-10 years the impact becomes somewhat similar, boys perceive a decrease in the probability of attending school of 1.6 percentage points and girls have a negative impact of 2.2 percentage points. For the older age group, the effect is now positive and slightly higher

[5]The reported estimates for the effect of the CSG when only the father is in the household are only presented for the age group 11-13 years due to the fact that only this age group had the enough amount of observations to run the regression. Single fathers are very uncommon in South African households. Only 2.% of all South African children live only with their father.

Figure 5: Impact of the Child Support Grant: Entire population and Africans

	Entire Population			Africans		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.241***	0.023***	-0.005*	0.240***	0.025***	-0.004
	(16.8)	(6.42)	(-1.63)	(15.64)	(6.00)	(-1.20)
Year	0.026**	0.012***	-0.004	0.037**	0.015***	-0.003
	(2.24)	(3.83)	(-1.07)	(2.94)	(3.94)	(-0.77)
Treatment.year	0.005	-0.009*	0.005*	-0.005	-0.01*	0.005*
	(0.32)	(-1.46)	(1.36)	(-0.30)	(-1.51)	(1.31)
Mother Characteristics						
Age						
0-30 years	-0.025*	-0.019***	-0.006*	-0.023	-0.018***	-0.008**
	(-1.45)	(-3.28)	(-1.39)	(-1.25)	(-2.82)	(-1.75)
31-45 years	0.002	-0.006*	0.001	0.002	-0.008**	-0.001
	(0.12)	(-1.56)	(0.30)	(0.14)	(-1.71)	(-0.40)
Education						
Primary	-0.174***	-0.071***		-0.152***	-0.06**	
	(-4.93)	(-2.62)		(-3.92)	(-2.25)	
Secondary	-0.044**	-0.018*		-0.03	-0.016	
	(-1.68)	(-1.34)		(-1.00)	(-1.00)	
No Schooling	-0.202***	-0.118***		-0.172***	-0.097***	
	(-5.02)	(-3.13)		(-3.95)	(-2.70)	
Employment						
Not Econ. Active	-0.02*	-0.003	-0.009***	-0.019*	-0.006*	-0.009***
	(-1.59)	(-0.89)	(-3.38)	(-1.33)	(-1.34)	(-2.91)
Not Employed	-0.023*	-0.002	-0.004	-0.019	-0.004	-0.004
	(-1.57)	(-0.46)	(-0.85)	(-1.16)	(-0.77)	(-0.88)
Household Characteristics						
Gender of eligible children	0.012*	0.003	0.001	0.012	0.003	0.001
	(1.41)	(1.08)	(0.56)	(1.26)	(0.88)	(0.40)
Urban	-0.02	-0.002	0.002	-0.028*	-0.001	0.006*
	(-1.07)	(-0.37)	(0.49)	(-1.33)	(-0.08)	(1.47)
Toilet not conn. to sewer	0.025*	0.007	-0.005	0.01	0.004	-0.004
	(1.50)	(1.09)	(-1.08)	(0.50)	(0.47)	(-0.69)
Rubbish removal local auth.	-0.052***	-0.011**	0.002	-0.035**	-0.007	0.005
	(-2.91)	(-2.00)	(0.44)	(-1.73)	(-1.06)	(0.99)
Wages/Remittences	-0.003	0.003	-0.009**	-0.001	0.003	-0.01**
	(-0.17)	(0.75)	(-1.79)	(-0.08)	(0.63)	(-1.83)
Pensions/Grants	0.004	0.008**	-0.007	0.003	0.009	-0.008*
	(0.23)	(1.78)	(-1.24)	(0.17)	(1.65)	(-1.37)
Lighting elec.not from main supply	-0.044***	-0.009***	-0.007***	-0.045***	-0.008**	-0.007**
	(-4.00)	(-2.66)	(-2.41)	(-3.89)	(-2.13)	(-2.28)
No acces to landline	-0.052***	-0.010*	-0.007**	-0.051***	-0.005	-0.007*
	(-3.55)	(-1.61)	(-1.90)	(-2.93)	(-0.59)	(-1.46)
Caregiver total salary	-0.000*	0.000	-0.000***	0.000	0.000*	-0.000***
	(-1.53)	(1.16)	(-2.74)	(-0.98)	(1.40)	(-2.85)
Informal dwelling	-0.009	-0.009*	0.000	-0.009	-0.01*	0.000
	(-0.61)	(-1.58)	(-0.11)	(-0.55)	(-1.48)	(0.10)
Hungry adult	-0.017**	-0.004*	-0.006***	-0.016*	-0.005*	-0.005**
	(-1.80)	(-1.62)	(-2.60)	(-1.58)	(-1.46)	(-2.16)
West Cape	0.060***	0.007	-0.002	0.067**	0.015**	0.010*
	(3.04)	(1.10)	(-0.31)	(1.86)	(1.85)	(1.32)
East Cape	0.055***	0.007	0.006	0.057**	0.014**	0.010**
	(2.55)	(1.11)	(1.25)	(1.98)	(2.08)	(1.68)
Free State	0.008	-0.004	0.003	0.014	0.005	0.008*
	(0.29)	(-0.49)	(0.60)	(0.42)	(0.56)	(1.34)
Kwazulu-Natal	0.035*	0.009*	0.002	0.038	0.015**	0.007
	(1.55)	(1.44)	(0.29)	(1.26)	(2.29)	(0.97)
Northwest	0.02	0.006	-0.002	0.024	0.013**	0.004
	(0.81)	(0.97)	(-0.33)	(0.77)	(1.97)	(0.51)
Gauteng	0.034*	0.012**	0.002	0.048*	0.017***	0.006
	(1.40)	(1.93)	(0.41)	(1.63)	(2.75)	(0.87)
Mpumalanga	0.046**	0.010**	0.001	0.046*	0.015***	0.006
	(2.06)	(1.71)	(0.25)	(1.59)	(2.49)	(0.96)
Limpopo	0.091***	0.016***	0.012***	0.095***	0.023***	0.016***
	(4.45)	(2.95)	(2.80)	(3.57)	(3.71)	(2.94)
Pseudo R-squared	0.192	0.133	0.06	0.177	0.118	0.058
N	5683	7757	10279	4977	6796	9009
Impact of the CSG on School Attendance						
Treatment.year	-0.0251	-0.0203**	0.0062	-0.0426**	-0.0222**	0.0067
Standtard Error	0.0217	0.0091	0.0051	0.0232	0.0099	0.0057
Z statistic	-1.2568	-2.1173	1.1685	-1.9240	-2.1611	1.1491

Note: z-statistic are in parentheses. * p<0.10, ** p<0.05, *** p<0.01
Columns (1) and (4) are the estimates for the age group of 7-8 years, (2) and (5) correspond to the age group of 9-10 years and (3) and (6) to the age group of 11-13 years.
Source: Author's calculations from the GHS 2002-2005.

Figure 6: Impact of the Child Support Grant: Boys and Girls

	Boys			Girls		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.237***	0.021***	-0.005	0.244***	0.022***	-0.004
	(12.08)	(4.23)	(-1.16)	(11.94)	(4.53)	(-1.07)
Year	0.003	0.011***	-0.005	0.044**	0.011***	-0.002
	(0.19)	(2.48)	(-0.98)	(2.77)	(2.85)	(-0.63)
year.treatment	0.023	-0.003	0.005	-0.011	-0.012*	0.004
	(1.01)	(-0.40)	(0.88)	(-0.47)	(-1.52)	(-0.96)
Mother Characteristics						
Age						
0-30 years	-0.044**	-0.007	0.001	-0.018	-0.014**	-0.013***
	(-1.80)	(-1.05)	(0.31)	(-0.76)	(-2.12)	(-2.54)
31-45 years	-0.007	-0.001	0.002	0.007	-0.004	-0.002
	(-0.35)	(-0.25)	(0.74)	(0.32)	(-0.90)	(-0.75)
Education						
Primary	-0.246***			-0.100***	-0.035**	
	(-4.43)			(-2.47)	(-1.68)	
Secondary	-0.075**			-0.003	-0.008	
	(-1.99)			(-0.10)	(-0.61)	
No Schooling	-0.279***			-0.117***	-0.073***	
	(-4.39)			(-2.56)	(-2.33)	
Employment						
Not Econ. Active	-0.012	-0.001	-0.009**	-0.011	-0.006	-0.008***
	(-0.67)	(-0.26)	(-2.32)	(-0.67)	(-1.16)	(-2.57)
Not Employed	-0.026*	0.001	-0.008*	-0.005	-0.001	0.000
	(-1.30)	(0.17)	(-1.36)	(-0.25)	(-0.23)	(0.01)
Household Characteristics						
Urban	0.001	-0.004	0.001	-0.033	0.001	0.003
	(0.03)	(-0.55)	(0.23)	(-1.24)	(0.15)	(0.73)
Toilet not conn. to sewer	0.032*	0.008	0.004	0.028	0.002	-0.007**
	(1.35)	(0.90)	(0.57)	(1.20)	(0.28)	(-1.66)
Only Mother in HH	0.023**	0.000	0.004*	0.024**	0.001	-0.005**
	(1.67)	(0.03)	(1.38)	(1.73)	(0.21)	(-1.87)
Rubbish removal local auth.	-0.070***	-0.023***	-0.008*	-0.031	0.000	0.012***
	(-2.93)	(-2.97)	(-1.34)	(-1.19)	(0.00)	(2.25)
Wages/Remittences	0.014	0.002	-0.01*	-0.024	0.003	-0.006
	(0.63)	(0.37)	(-1.45)	(-1.05)	(0.50)	(-1.11)
Pensions/Grants	0.027	0.009*	-0.006	-0.022	0.005	-0.002
	(1.18)	(1.49)	(-0.84)	(-0.81)	(0.81)	(-0.29)
Lighting elec. Not from main supply	-0.037***	-0.009**	-0.009***	-0.049***	-0.013***	-0.005*
	(-2.47)	(-2.02)	(-2.58)	(-3.23)	(-2.95)	(-1.53)
No acces to landline	-0.056***	-0.019***	-0.007*	-0.037**	-0.002	-0.007*
	(-2.78)	(-2.51)	(-1.41)	(-1.83)	(-0.25)	(-1.52)
West Cape	0.067***	0.003	-0.013	0.037	0.014**	0.006
	(2.73)	(0.37)	(-1.13)	(1.11)	(1.95)	(1.04)
East Cape	0.080***	0.006	0.003	0.05*	0.009*	0.006
	(3.62)	(0.77)	(0.41)	(1.59)	(1.34)	(1.20)
Free State	0.049**	0.003	0.006	0.001	-0.015	0.000
	(1.89)	(0.38)	(0.77)	(0.03)	(-1.23)	(-0.03)
Kwazulu-Natal	0.078***	0.011*	0.000	0.014	0.006	0.002
	(3.50)	(1.50)	(0.00)	(0.41)	(0.84)	(0.34)
Northwest	0.066***	0.012**	-0.004	-0.011	-0.002	-0.003
	(2.82)	(1.77)	(-0.49)	(-0.31)	(-0.24)	(-0.41)
Gauteng	0.044**	0.019***	0.000	0.051*	0.003	0.003
	(1.68)	(2.62)	(-0.01)	(1.56)	(0.33)	(0.41)
Mpumalanga	0.076***	0.011*	0.005	0.039	0.007	-0.003
	(3.48)	(1.44)	(0.63)	(1.21)	(1.13)	(-0.44)
Limpopo	0.126***	0.019***	0.013**	0.066**	0.012**	0.009**
	(6.36)	(2.84)	(1.98)	(2.16)	(1.94)	(1.75)
Caregiver total salary	0.000	0.000	0.000*	0.000	0.000	-0.000***
	(-0.13)	(0.31)	(-1.39)	(-0.76)	(1.17)	(-2.41)
Informal dwelling	-0.022	-0.009	-0.004	0.001	-0.007	0.002
	(-1.05)	(-1.19)	(-0.58)	(0.07)	(-0.93)	(0.47)
Hungry adult	-0.007	-0.006*	-0.005*	-0.024**	-0.004*	-0.007***
	(-0.55)	(-1.57)	(-1.65)	(-1.92)	(-1.42)	(-2.50)
Household member of 56 or more	-0.021*	0.005	-0.005*	0.015	-0.004	-0.004*
	(-1.36)	(1.17)	(-1.65)	(0.97)	(-0.96)	(-1.35)
pseudo R-squared	0.213	0.119	0.075	0.183	0.151	0.092
N	2879	3947	5155	2805	3831	5124
Impact of the CSG on School Attendance						
Treatment.year	0.0120	-0.0161	0.0059	-0.0570**	-0.0227*	0.0062
Standtard Error	0.0305	0.0119	0.0075	0.0307	0.0133	0.0071
Z statistic	0.3296	-1.2694	0.7551	-1.9264	-1.5625	0.8222

Note: z-statistic are in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Columns (1) and (4) are the estimates for the age group of 7-8 years, (2) and (5) correspond to the age group of 9-10 years and (3) and (6) to the age group of 11-13 years.

Source: Author's calculations from the GHS 2002-2005.

for girls. As boys get older, the opportunity cost of attending school rises, as they are more suitable to join the labour force. The results suggest that for older boys, the amount received by the grant is not enough to forgo the perceived income of labour activities.

The different effect for boys and girls is more obvious when the effects are estimated separately for when the mother is the sole caregiver. Table 9 presents the effect of the CSG for boys and girls when only the mother is in the household. Columns 1-3 report the result for the three age groups. Girls of the age group of 7-8 years have a negative effect of 3.8 percentage points, girls of the second age group have also a negative and significant effect but higher than the previous group, namely a reduction of 2.5 on the probability of attending school and girls of the last age group have a positive effect of 1.8 percentage points. For the boys, the impact is also negative for the first and second age group, for the first the probability of going to school decreases in one percentage point and for the second the negative effect is more pronounced and significant with a magnitude of 2.2 percentage points. For boys in the third age group the effect is positive but very small and insignificant.

The results are consistent with the fact that the opportunity cost for boys is rising as they grow older. Another important implication underlies the different effects for boys and girls when only the mother is present in the household. The effect of the CSG when only the mother is present is higher for boys, but as children get older, the effect is stronger for girls. For the age group of 11-13 years, the effect on girls is positive and of 1.2 percentage points for the boys is also positive, but of only 0.3 percentage points. The higher effect on girls in the age group of 11-13 years suggests that mother spend more on girl's education than in boys, perhaps driven by the fact that the boy is now more suitable for work. This is consistent with results of other studies. Thomas (1990) finds that mothers prefer to allocate resources to improving the nutritional status of their daughters. However, the higher impact of the CSG on girls compared to the effect

on boys when only the mother is in the household cannot be solely attributed to gender preference; it might be also reflecting different opportunity costs of attending school for both genders.

Table 10 reports the effect when only the father of the child is present in the household. Due to the small number of children that live only with their father, this effect could only be quantified for boys of the 11-13 age group. The impact of the grant on 11 to 13 years boys is lower when the father is the sole caregiver then when only the mother is in the household. Children only residing with their father have a negative and insignificant impact of the CSG on school attendance of 5.4 percentage points. For children living with their mother of the same age group and gender the CSG decreases the probability of attending school by only 2.1 percentage points. The negative impact on older boys of the CSG when the caregiver is a single parent suggest that in households where only the mother or the father is present, there might be a higher opportunity cost of attending school for the older boys, thus the impact of the CSG is lower compared to the impact of the program on girls of the same age group.

Table 11 [6] reports the effect of the grant for the province of KwaZulu-Natal and the rest of South Africa. KwaZulu-Natal is one of the most impoverished areas of South Africa, therefore I higher impact of the grant will be expected in this area, if the program is being able to target the most needed population. For the age groups of 7-8 and 11-13 years the results are as expected. Children in KwaZulu-Natal of 7-8 years eligible to receive the grant report a positive effect of 3.94 percentage points on the probability of attending school while the effect for the same group living in the rest of South Africa's provinces is negative and insignificant. For the later the CSG reduces the probability of attending school in 2.5 percentage points. For the 11-13 age group residing in KwaZulu-Natal there is an increase in the probability of attending school of 1.3 percentage points, for those residing in all other provinces of South Africa the effect is positive but smaller

[6] Tables 11 and 12 are available upon request, due to space constraints.

Figure 7: Impact of the Child Support Grant: Single Mother and Father in the Household

	Only Mother in the Household			Only Fahter in HH
	(1)	(2)	(3)	(4)
Treatment	0.216***	0.025***	-0.003	0.002
	(12.73)	(4.63)	(-0.91)	(0.38)
Year	0.025**	0.015***	0.000	0.006
	(1.85)	(3.24)	(-0.01)	(0.80)
Treatment.year	0.003	-0.014**	0.005	-0.024**
	(0.17)	(-1.70)	(1.20)	(-1.78)
Mother Characteristics				
Age				
0-30 years	-0.017	-0.005	-0.01**	-0.14***
	(-0.82)	(-0.84)	(-1.98)	(-3.40)
31-45 years	0.025*	0.002	-0.001	-0.006*
	(1.31)	(0.34)	(-0.44)	(-1.58)
Education				
Primary	-0.169***			-0.979***
	(-3.97)			(-14.44)
Secondary	-0.027			-0.752***
	(-0.88)			(-16.67)
No Schooling	-0.154***			-0.529***
	(-3.26)			
Employment				
Not Econ. Active	0.000	-0.007	-0.014***	-0.007*
	(0.02)	(-1.06)	(-3.20)	(-1.31)
Not Employed	-0.005	0.000	-0.003	-0.014**
	(-0.23)	(-0.06)	(-0.51)	(-1.65)
Household Characteristics				
Gender of eligible children	0.012	0.003	-0.002	0.003
	(1.20)	(1.00)	(-1.04)	(0.71)
Urban	0.004	0.004	0.008**	0.003
	(0.16)	(0.58)	(1.99)	(0.55)
Toilet not conn. to sewer	0.031*	0.001	-0.003	0.011*
	(1.39)	(0.16)	(-0.59)	(1.43)
Rubbish removal local auth.	-0.032*	-0.011*	0.01	-0.004
	(-1.46)	(-1.39)	(1.63)	(-0.85)
Wages/Remittences	-0.001	0.002	-0.014**	-0.007
	(-0.03)	(0.26)	(-1.87)	(-1.00)
Pensions/Grants	-0.009	0.002	-0.012*	-0.002
	(-0.38)	(0.29)	(-1.42)	(-0.25)
Lighting elec.not from main supply	-0.038***	-0.012***	-0.005*	-0.012**
	(-2.90)	(-2.46)	(-1.38)	(-1.67)
No acces to landline	-0.052***	-0.012*	-0.007*	
	(-3.11)	(-1.60)	(-1.62)	
Caregiver total salary	0.000	0.000	-0.000***	0.000
	(-0.25)	(-0.78)	(-2.80)	(-0.58)
Informal dwelling	-0.032*	-0.003	0.000	-0.005*
	(-1.64)	(-0.37)	(0.80)	(-1.38)
Hungry adult	-0.02**	-0.009**	-0.004*	
	(-1.78)	(-2.18)	(-1.47)	
West Cape	0.006	0.01	-0.003	
	(0.21)	(1.17)	(-0.36)	
East Cape	0.034	0.012*	0.000	
	(1.16)	(1.57)	(0.04)	
Free State	-0.005	-0.001	-0.002	
	(-0.14)	(-0.14)	(-0.22)	
Kwazulu-Natal	0.014	0.014**	-0.007	
	(0.45)	(2.00)	(-0.88)	
Northwest	-0.004	0.013**	-0.009	
	(-0.11)	(1.73)	(-0.87)	
Gauteng	0.019	0.015**	-0.005	
	(0.56)	(1.93)	(-0.48)	
Mpumalanga	0.025	0.016**	-0.01	
	(0.81)	(2.18)	(-1.04)	
Limpopo	0.069***	0.023***	0.007	
	(2.45)	(3.34)	(1.08)	
Pseudo R-squared	0.181	0.088	0.064	0.221
N	3768	5204	6866	481
Impact of the CSG on School Attendance				
Treatment.year	-0.0260	-.0224**	0.0071	-0.0456
Standtard Error	0.0260	0.0113	0.0067	0.0391
Z statistic	-1.0804	-1.9207	1.0187	-0.9862

Note: z-statistic are in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Column (1) presents the estimates for the age group of 7-8 years, (2) correspond to the age group of 9-10 years and (3) and (4) to the age group of 11-13 years.

Source: Author's calculations from the GHS 2002-2005.

Figure 8: Impact of the Child Support Grant: Mothers as Caregivers

	Mothers as caregivers					
	Boys			Girls		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.210***	0.020***	-0.001	0.218***	0.013**	-0.002
	(9.16)	(3.77)	(-0.19)	(9.16)	(3.24)	(-0.91)
Year	0.017	0.009**	0.002	0.031**	0.010***	-0.001
	(0.87)	(2.20)	(0.38)	(1.72)	(2.83)	(-0.37)
Treatment.year	0.01	-0.007	0.002	-0.002	-0.012**	0.004*
	(0.37)	(-0.87)	(0.43)	(-0.06)	(-1.66)	(1.41)
Mother Characteristics						
Age						
0-30 years	-0.024	-0.016**	-0.006	-0.019	-0.012**	-0.022*
	(-0.87)	(-2.06)	(-1.21)	(-0.64)	(-2.07)	(-3.60)
31-45 years	0.025	-0.003	-0.002	0.018	-0.003	-0.003*
	(0.99)	(-0.52)	(-0.71)	(0.66)	(-0.78)	(-1.38)
Education						
Primary	-0.215***	-0.965***	-0.763***	-0.124***	-0.935***	-0.872***
	(-3.28)	(-33.59)	(-29.39)	(-2.36)	(-32.73)	(-7.94)
Secondary	-0.041	-0.293***	-0.303***	-0.01	-0.264***	-0.267***
	(-0.92)	(-27.95)	(-29.23)	(-0.24)	(-26.90)	(-6.51)
No Schooling	-0.218	-0.991	-0.921	-0.094**	-0.989	-0.969***
				(-1.68)		(-8.35)
Employment						
Not Econ. Active	-0.005	0.003	-0.007**	0.011	-0.011**	-0.010***
	(-0.20)	(0.56)	(-1.67)	(0.47)	(-2.07)	(-3.02)
Not Employed	-0.034	-0.002	-0.003	0.026	-0.005	-0.002
	(-1.19)	(-0.26)	(-0.56)	(1.06)	(-0.78)	(-0.47)
Household Characteristics						
Urban	0.04*	0.012**	0.008**	-0.019	-0.005	0.003
	(1.38)	(1.83)	(2.18)	(-0.58)	(-0.82)	(0.93)
Toilet not conn. to sewer	0.079***	0.003	0.005	0.002	-0.002	-0.004
	(2.41)	(0.26)	(0.65)	(0.07)	(-0.41)	(-1.18)
Rubbish removal local auth.	-0.065**	0.000	0.004	0.005	-0.005	0.011***
	(-2.25)	(-0.01)	(0.59)	(0.14)	(-0.86)	(2.34)
Wages/Remittences	0.034	0.002	-0.008	-0.037	0.001	-0.008*
	(1.27)	(0.36)	(-1.10)	(-1.18)	(0.16)	(-1.61)
Pensions/Grants	0.016	0.005	-0.006	-0.04	-0.002	-0.008*
	(0.60)	(0.86)	(-0.74)	(-1.15)	(-0.40)	(-1.32)
Lighting elec.not from main supply	-0.029**	-0.004	-0.003	-0.047*	-0.008**	-0.001
	(-1.68)	(-0.98)	(-0.80)	(-2.60)	(-2.04)	(-0.43)
No acces to landline	-0.068***		-0.006*	-0.034*	0.003	-0.001
	(-3.03)		(-1.38)	(-1.46)	(0.45)	(-0.37)**
Caregiver total salary	0.000	0.000	0.000	0.000	0.000	-0.000**
	(0.03)	(-0.55)	(-0.99)	(-0.11)	(-0.69)	(-3.44)
Informal dwelling	-0.045*	0.000	0.001	-0.024	-0.003	0.001
	(-1.63)	(-0.04)	(0.16)	(-0.93)	(-0.44)	(0.32)
Hungry adult	-0.013	-0.006*	-0.002	-0.027**	-0.003	-0.002
	(-0.83)	(-1.58)	(-0.73)	(-1.84)	(-1.18)	(-1.16)
pseudo R-squared	0.2	0.136	0.068	0.181	0.147	0.166
N	1870	2590	3414	1899	2593	3429
Impact of the CSG on School Attendance						
Treatment.year	-0.0107	-0.0216*	0.0034	-0.0383	-0.0257*	0.0118
Standtard Error	0.0366	0.0150	0.0088	0.0360	0.0169	0.0108
Z statistic	-0.3653	-1.3673	0.3699	-1.1212	-1.3533	0.9356

Note: z-statistic are in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Columns (1) and (4) are the estimates for the age group of 7-8 years, (2) and (5) correspond to the age group of 9-10 years and (3) and (6) to the age group of 11-13 years.

Source: Author's calculations from the GHS 2002-2005.

Figure 9: Impact of the Child Support Grant: Fathers as Caregivers

	Fathers as caregivers
	Boys
	Age group 11-13 years
Treatment	0.000
	(0.20)
Year	0.549***
	(17.88)
Treatment.year	-0.728***
Father Characteristics	
Age	
0-30 years	-0.068***
	(-3.51)
31-45 years	0.000
	(-0.81)
Employment	
Not Econ. Active	0.000
	(1.00)
Not Employed	0.000**
	(2.05)
Household Characteristics	
Urban	0.000*
	(1.45)
Toilet not conn. to sewer	0.002*
	(1.61)
Wages/Remittences	0.000
	(0.06)
Pensions/Grants	0.000
	(0.40)
Lighting elec.not from main supply	-0.001*
	(-1.46)
Caregiver total salary	0.000
	(-0.12)
Hungry adult	0.000*
	(-1.46)
pseudo R-squared	0.271
N	260
Impact of the CSG on School Attendance	
Treatment.year	-0.0544011
Standtard Error	0.0575834
Z statistic	-0.691115

Note: z-statistic are in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Source: Author's calculations from the GHS 2002-2005.

accounting for a increase of 0.2 percentage points on the probability of attending school.

For children in the age group of 9-10 years, the effect is contrary. Children in KwaZulu-Natal have a lower impact of the grant, namely a decrease of 3.5 percentage points of the probability of attending school. For the rest of the provinces, this effect is negative but somewhat higher than for KwaZulu-Natal, for this group the probability of attending school decreases by 2.5 percentage points.

Table 12 presents the effect of the CSG for the urban and non urban areas. As in the KwaZulu-Natal and other provinces distinction, a higher effect in non urban areas suggests that the program is reaching more impoverished children. The results are consistent with this expectation for the age groups of 7-8 and 11-13 years. For the first group, in urban areas the CSG has a negative and significant effect, reducing the probability of attending school in 4.39 percentage points, while in non urban areas the effect is positive and has a magnitude of 0.5 percentage points.

For the age group of 11-13 years the effect of the CSG in urban areas is a reduction in the probability of attending school in 0.2 percentage points, while in non urban areas the CSG has a positive and significant effect, increasing the probability of attending school in 1 percentage point.

In general, the CSG is reaching poor children, however the effect is small and insignificant. A higher effect of the program may be attained if the grant is conditioned on children attending school.

5.2 Robustness Checks

To asses whether the estimated impacts of the grant on children's school attendance is driven by the small period between the implementation of the increase in the grant's age eligibility and the time when the survey was performed, I estimate the effects of the grant for the same age groups allowing for a year in between the pre and post periods. For the age group of 7-8 years the treatment group is now evaluated at the year 2004

instead of the year 2003. For the age group of 9-10 years the post policy year is now 2005, instead of 2004. The 11-13 age group could not be included in the robustness check due to the fact that the GHS is only available until 2005.

The results for the entire population and Africans have the same sign when the exact year of the policy is taken as the post policy period then when the subsequent year is analyzed as the post policy period. For the latter, however the effect is lower for the age group of 7-8 years for both the entire population and Africans and higher for the age group of 9-10 years.

Estimated results for when only the mother resides in the household are of the same sign when the post policy year is the same where the policy took place then when the subsequent year is taken. For the age group 7-8 the effect is now a reduction in the probability of attending school in 8.2 percentage points and the effect is significant at the 1% level. For the age group of 9-10 years the effect is somewhat higher but insignificant. The results for when only the father is in the household are not comparable with the ones previously obtained, given that they could only be estimated for the age group of 11-13 years. The results however are worth to be mentioned when the subsequent year of the policy is taken as the post period. For the age group of 7-8 years the impact of the CSG increases the probability of attending school in 0.3 percentage points and for the age group of 9-10 years it decreases the probability by 1.9 percentage points. Both effects are insignificant.

The estimated effects separately for boys and girls are also similar to the effects estimated before. The only difference is in the age group of 7-8 years. When the effect is evaluated at the exact year of the policy, the effect for this group is positive and insignificant. The impact when the effect is evaluated at the year after the policy took place the CSG reduces the probability of attending school in 8.3 percentage points for boys in the age group of 7-8 years. The effect is significant at the 1

The estimated effects for boys and girls when only mother in household and only the

father is in household are of the same sign and similar magnitudes than those evaluated taking the same year of the policy as the post period.

The reported effects for the province of KwaZulu-Natal and the rest of South Africa are of the same sign and similar magnitudes for the age group of 9-10 years. For the age group of 7-8 years the estimated results evaluated at the year after the policy took place are lower then when the year of the policy is used as the post period.[7]

6 Summary and Conclusion

The increase of the age eligibility in the Child Support Grant implemented in South Africa has not led to considerable improvements in children's school attendance. The overall effect of the grant in children's school attendance is significantly negative for eligible children between 7 and 10 yearrs and insignificant for children between 11 and 13 years. The impact of the grant for boys has been decreasing as they got older, this impact however is not significant. Girls experience the contrary. The impact of the grant has been increasing, and it is significant for the younger groups. This suggests that for boys the opportunity cost of attending school rises as they get older, given that they are more suitable to join the labour force compared to girls. The results also imply that for older boys, the amount received by the grant is not enough to forgo the perceived income of their labour activities.

Grants received by women have a higher impact on children than when a man is the caregiver of the child. For the age group of 11-13 years the impact of the grant is positive when only the mother is present in the household and negative when only the father is in the household. This suggests that the efficiency of the program may vary with the gender of the caregiver. Mothers spend more in activities that enhance the well-being of the child than fathers do.

Grants received by women improved the probability of attending school for girls be-

[7]The tables for robustness check are available upon request.

tween 11 and 13 years in 1.2 percentage points, and for boys of the same age group the estimated impact was of 0.3 percentage points. The higher impact on girls when mothers are the sole caregivers compared to the impact on boys where only the mother is in the household may lead to believe that there is a gender preference for girls. However, the different impacts on boys and girls cannot be solely attributed to gender preference. For the smaller age group, the balance is inclined to the boys when the mother is the sole caregiver, as the age rises the impacts becomes positive and higher for girls than for boys. The different effects for the older group may also be reflecting higher opportunity costs of attending school for boys. Therefore, is not necessarily that the mother prefers girls; it might be that the household cannot forgo the perceived income from boys labour activities.

The most important finding of this paper is that this large cash transfer program had no statistically significant positive impact on children's school attendance. The grant is able to reach poorer areas, but in general the effect on school attendance is negative or very small. Moreover, the program is not able to surpass the opportunity costs of attending school for children. Making the Child Support Grant conditional on specific behaviour may lead to higher impacts in children's well being.

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