Is the Child Support Grant associated with an increase in teenage fertility in South Africa?

Evidence from national surveys and administrative data

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Summary

In this paper we outline the results of an analysis of teenage fertility trends and age patterns of Child Support Grant beneficiaries to examine whether the CSG is exerting a perverse effect by increasing teen pregnancy.

From the analysis we conclude that there is no relationship between teenage fertility and the CSG. We base this on three findings:

Firstly, while teenage pregnancy rose rapidly during the 1980's, it had stabilized and even started to decline by the time the CSG was introduced in 1998.

Secondly, only 20 percent of teens who bear children are beneficiaries of the CSG.

Thirdly, observed increases in youthful fertility have occurred across all social sectors including amongst young people who would not qualify for the CSG on the means test.

We note that debates about perverse effects of welfare and proposals for punitive exclusion and withdrawal have occurred in other countries. The issue is one that attracts strong personal, moral and cultural opinions. While the data we have analysed, we conclude there are no grounds to believe that young South African girls are deliberately having children in order to access welfare benefts. However, the issue can only be settled conclusively by a specially designed study.

Introduction

In many parts of the world teenage pregnancy is conceptualized as a social problem. There are many factors that lead to this perception. Firstly, teenage pregnancy is associated with physiological harm to the teenage mother and that of the child (see, for example, Hoffman et al., 1993). In this respect, it is helpful to differentiate between childbirth among pre-teen and very young teen mothers, a group at high risk of physiological problems, and birth during the late teen years, that has a low association with harmful physical consequences.

The second perceived problem of teenage fertility is the tendency for early childbirth to initiate a trajectory of lifetime poverty for the young mother and her child/ren (for example, Geronimus & Korenman, 1992). Poverty may, however, be the result of mediating factors, such as expulsion or exclusion from education and lack of material and social support (Ojwang & Maggwa, 1991).

Thirdly, most teen fertility occurs outside wedlock. Objections to out-of-wedlock fertility arise from various quarters – moral precepts, religious beliefs, cultural rules, and pragmatic concerns such as poor support from the father of the child. The fourth issue, often raised by demographers, is that early childbearing is generally associated with a higher overall fertility rate in societies with low use of contraception.

In many social democratic countries, an increase in teenage fertility has been found to be associated with the existence of an elaborated welfare system. For example, in the United States, it has been reported that approximately one-half of teen mothers go on welfare within 1 year and 77% within 5 years (Burt et al, 1984; Rodriquez & Moore, 1995). Welfare grants are thought, by some, to have a perverse incentive for teenagers because they receive financial support when they bear children. A corollary of this assertion is that child grants result in higher teenage fertility in societies in societies that offer welfare benefits for children (see, for example, Bullen & Kenway, 2000). The second view, is that even if no such perverse incentive is found, some form of punitive withdrawal of welfare from unwed teenage mothers should be instituted as a signal of disapproval of teenage and out-of-wedlock fertility. For example, both USA and Britain have seen strong proposals to exclude sections of teenage mothers or withdraw grants from teen mothers on this ground (Bullen & Kenway,

2000; Geronimus, 1997). While this line of thinking underpins most negative sentiments towards the Child Support Grant (CSG) in South Africa, the analysis presented here only tests the validity of the first claim, that is, the association between higher teenage fertility and the CSG.

Debates on teenage fertility and welfare in developed countries

In the United States, the United Kingdom and other liberal democracies, where there is an elaborated social welfare benefits system, teenage fertility is perceived to be a significant social problem because of its fiscal implications. In these countries, the debate and controversy surrounding teenage sexual activity in general, has been dominated by attempts to claim moral high ground. In common with other social welfare issues, the line between scientific knowledge on teenage pregnancy and personal values is often blurred, making scientific knowledge, and its impact on policy inconclusive at best.

Studies that have been conducted in these countries can be summarized under the rubric of two main schools of thought. Those emanating from a conservative position have generally found a positive association between social welfare benefits and teenage pregnancy, as well as other non-normative family patterns including divorce, single-parenthood and female headship of households. From the point of view of these studies, availability and access to social welfare benefits is the cause of the rise in teenage pregnancy or their sustained rate.

On the other hand, studies based within a liberal framework have generally argued that the rise in teenage pregnancy is associated with structural features of society such as job discrimination, racial oppression and general social exclusion. This school of thought highlights the role of low self esteem, intra-family conflict, educational failure, poor work opportunities and health service barriers to contraceptive use in teenage pregnancy (for example, Tabberer et al, 2000). According to this view, teenage pregnancy can be reduced by raising standards of education in schools in poor communities and of health services for young people, and a general reduction in inequality in society (Darling, 1999).

The Child Support Grant and teenage pregnancy in South Africa

The introduction of the CSG in South Africa has stirred up similar issues and the recurrent debate regarding welfare. A school of thought has

developed in South Africa which claims that the CSG has some perverse incentives, one of which is to encourage women to have more children, especially teenagers.

It is widely acknowledged in South Africa that teenage fertility is relatively high. About half of all young people between 15 and 19 years of age, slightly more men than women, report having had sex. By 19, close to 80 percent of South African women have had sex, and about 37 percent have been pregnant. (Department of Health, 1998; Pettifor et al, 2004; Reddy et al, 2003; Shisana et al, 2002). In comparison to the 1998 Demographic and Health Survey, in which 16 percent of young women reported using a condom during their last sexual encounter, by 2002, the rates reported in national surveys was 48 percent (Pettifor et al, 2004; Shisana et al, 2002).

Methodology

Whether or not the CSG is influencing teen pregnancy is best answered through a specially designed study on this question. The current analysis makes use of existing national data sets to arrive at a preliminary assessment of the issue.

To assess relationship between South African teenage fertility trends and the CSG, data on fertility and CSG access are presented and evaluated with the aim of determining whether there is an association between them. We also compare South African fertility trends with those reported in other parts of the world.

Evidence that would supports a perverse effect of the CSG on fertility includes concurrence between the introduction of the CSG and an increase in overall fertility and teenage fertility, in particular. Further, one needs to ask whether the sub-population in any trends in teenage fertility coincides with the sub-population that is eligible for the CSG. Lastly, discordance between South African fertility trends with those found internationally may suggest that the CSG could be one of a number of factors having an impact on South African fertility.

The datasets used in this study are the 1995 and 1998 October Household Surveys, 1998 South African Demographic and Health Survey, and the 2001 Census.

The 1995 and 1998 October Household Surveys

The 1995 October Household Survey (OHS) was carried out on a national sample of 30 000 households drawn from 3 000 enumeration areas. Ten households were selected from each enumeration area. The sample was stratified by province, urban and non-urban areas and population group. Detailed methodological information is provided by Hirschowitz and Orkin (1996). The survey collected birth histories from women younger than 55 years of age and this information can be used to examine age-specific fertility rates.

The 1998 October Household Survey was similar in design to the 1995 survey except that the sample size was reduced to 20 000 households. As in the 1995 survey, the 1998 survey collected birth histories from women younger than 55.

The 1998 South African Demographic and Health Survey (SADHS)

The 1998 SADHS was the first nation-wide study of its kind to be conducted. Fieldwork was conducted between late January and September 1998, during which time 12 247 households were visited, and 17 500 people across the nine provinces were interviewed. The study included questions on birth histories of women.

The 2001 Population Census

The 2001 population census was the second post-Apartheid census in South Africa that attempted to canvass the entire country. One of the fertility questions in the 2001 census for women aged between 12 and 50 years at the time of the census was: *If (the person) has ever given live birth: when was (the person's) last child born?* Used appropriately in conjunction with other variables, the answer to this question can be employed to examine age-specific fertility rates.

Social Pension Fund Grant System (SOCPEN)

The data used to estimate the national CSG distribution was obtained from SOCPEN, an state electronic system that records government welfare transactions. Data from the SOCPEN system are available from the year 1999. When the CSG was initiated in 1998, it was in the form of a monthly cash transfer payable to a poor primary caregiver of a child aged 0-7 years. Since 2003, the eligibility for the grant has been extended to age 14, phased in over a period of three years until 2005/6.

Methods of fertility estimation

Retrospective reporting of fertility in surveys and censuses are often marred reporting errors, and therefore age-specific fertility rates directly computed from such data may be biased. Thus, there is a need for appraisal and adjustment for such errors using indirect methods. One such method is the Relational Gompertz Model (RGM). The RGM has been chosen for this analysis because it is a sufficiently rigid model to reveal error deviations but flexible enough to follow the significant features of the observation. (Brass, 1981). Details of the method are given in Appendix 1.

The appropriate variables for the evaluation and indirect estimation of age-specific fertility rates were extracted from each of the data sets listed above and then appraised using the Relational Gompertz Model. Estimates of age-specific fertility rates for the years 1995, 1998 and 2001 were computed based on the estimated Gompertz parameters for these periods. For the year 2000, the values were obtained by linear interpolation while for the year 2005, they were obtained through extrapolation by linear regression.

Age-specific fertility rates have several related utilities ranging from the purely demographic to providing insights into the evaluation of policies and programmes related to fertility. The rates are defined as the number of births in a specified year per thousand women in specified reproductive groups at mid-year. From a purely demographic stand point, they constitute one measure of the level of fertility. Since they control for the age-sex composition of populations, and any variation in fertility within the reproductive age group, they may provide insight into the impact of policy interventions and programmes relating to fertility, that is, where such interventions have been made and appropriate data are available.

Results

The results for teenage fertility are presented, followed by information on beneficiaries of the CSG.

Comparative teenage fertility rate from different parts of the world

Table 1 shows teenage fertility in different parts of the world**.**

Table 1 Comparisons of teenage fertility from different parts of the world

Region	2000-2005

Sub-Saharan Africa	127
Middle East/North Africa	39
South Asia	56
East Asia/Pacific	18
Latin America/Caribbean	71
U.S.A.	61
World	50
South Africa	**66**

Source: United Nations Population Division (2000)

As can be seen in Table 1, the South African teenage fertility rate is low compared to the overall rate for sub-Saharan Africa and comparable to many middle-income countries, which in turn is considerable higher than most European countries. Although South African fertility is lower than that of sub-Saharan Africa, a major point of difference is that teenage childbearing happens mostly outside marriage in South Africa, whereas in most parts of sub-Saharan Africa, teen fertility occurs in the context of early marriage. Within developed countries, those that have large income disparities, such as the United States of America, generally have higher teenage fertility, almost equal to that of middle income countries. It must be noted, though, that despite the narrowing fertility gap between more and less developed countries, the adolescent fertility gap remains high.

Trends in teenage fertility

Trends in teenage fertility in South Africa are shown in Figure 1.

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Figure 1: Trends in teenage fertility 1980-2000

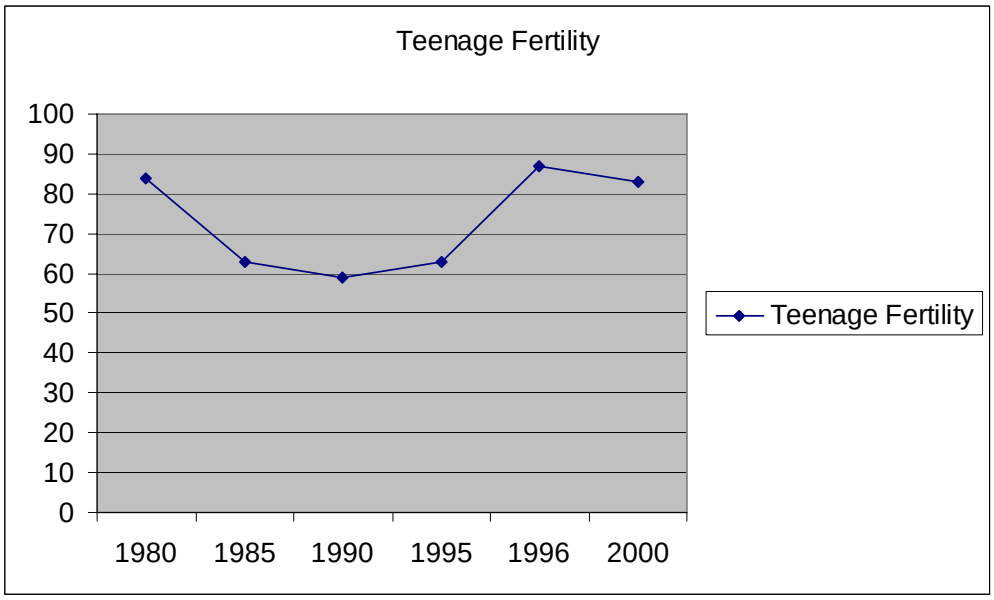

Figure 1 shows that teen fertility declined rapidly from 1980 onwards, a decline that ended in 1996 when a dramatic upsurge occurred. After that time, teen fertility appears to level off. The exact pattern of teenage fertility from early 2000 to presently is not known with any accuracy, because of the lack of recent reliable fertility data. Unadjusted fertility data from the Demographic and Health Survey 2003[1] suggest that no further increase in teenage fertility was experienced for the few years after the 2001 census.

Teenage fertility by race

Race is used here in accordance with the historical classification of South African society, i.e. Africans (people of African descent), Whites (European descent), Indian (Asian descent) and Coloureds (mixed descent). Of major interest, are trends in teenage fertility within the different fertility regimes that are displayed by different race groups.

Fertility levels of White South African women mirror fertility trends in more developed countries where the transition from high to low fertility has been completed. The Indian and Coloured population groups are nearing completion of the fertility transition. Although fertility levels of the African population group has been higher than that of other population groups,

[1] The DHS 2003 is not yet publicly available.

they have recently experienced the highest rate of fertility decline. It is with this background that the age-specific fertility rates of different population groups is examined below.

Table 2 below shows the estimated trends in Total Fertility Rate (TFR) and Age-Specific Fertility Rates (ASFR) for teenagers, by race, in 1995 and 2000.

Table 2: TFR and ASFR 15 to 19 years, by race, 1995 and 2000

	1995		2000	
	ASFR 15-19 yrs	**TFR**	**ASFR 15-19 yrs**	**TFR**
African	45	3.6	65	3.01
Coloured	54	2.8	56	2.54
Indian	28	2.49	27	2.4
White	6	1.99	20	1.8

Total fertility rates in South Africa have been declining over the past few decades (see Chimere-Dan, 1993, for example), and is demonstrated here between 1995 and 2005. Udjo (2003) estimated that the total fertility rate in South Africa declined from about 4.9 in 1970 to about 3.2 in 1998.

In contrast, teenage fertility has increased in all race groups, except Indians. This suggests that overall fertility has been accompanied by a shift in childbearing towards younger women. As Sibanda et al. (1999) noted, African women tended to have higher childbirth rates at later ages, notably between the ages 30-34. Furthermore, although the total fertility rate was higher in 1995 compared to 2000, the contribution to total fertility by younger women (aged 15-29), relative to older women (aged 30-49), was lower in 1995 than in 2000. This means that the fertility age pattern has shifted to the younger years. In 1995, women aged 15-29 contributed an estimated 44% to total fertility. This increased to 55% in 2000. In addition, whilst the overall fertility of Africans has been declining over the period, births to teenage women have been increasing.

It is noteworthy that in spite of the total fertility rate being low and relatively stable amongst White and Indian women, significant shifts in age-specific fertility towards younger women are observable amongst Whites.

The biggest shift has been observed among Africans where the increase in youthful fertility has been accompanied by a decline in the fertility rates of older women.

Child Support Grant beneficiaries

Table 3 shows the estimated proportion of children who received grants in each province in 1999 and 2005. The proportion was compiled by dividing the number of children who received the grant in March 1999 by the projections from Stats SA (2005) of the number of children in the age group 0-7 at mid-year 1999, and for 2005 estimates, the number of recipients were divided by the number of children in the age group 0-14.

Table 3 Percent of children (0-14) in receipt of the CSG in each province, 1999 and 2005

Province	Percent of children, March 1999 (%)	Percent of children, March 2005 (%)
Eastern Cape	0.30	52.08
Northern Cape	0.82	60.66
Western Cape	0.27	30.80
Mpumalanga	0.08	50.86
Gauteng	0.12	34.63
KwaZulu-Natal	0.26	46.65
North West	0.18	43.70
Free State	0.28	43.06
Limpompo	0.82	52.24
TOTAL	0.27	44.86

It is estimated that about 45 percent of all children in South Africa received the child grant in March 2005. The coverage improved each year, from a low of .27 percent in 1999. The proportion of children who receive the grant differs significantly according to the province in which they reside. The lowest proportion of children who receive the grant are found in the metropolitan areas of South Africa, namely the Western Cape and Gauteng. The highest proportion is found in Limpopo and the Eastern Cape.

Table 4 below shows the estimated age distribution of CSG beneficiaries in 1999 and 2005.

Table 4: Estimated age distribution of CSG beneficiaries in March, 1999 and March, 2005

Age group	Beneficiaries (%) in March, 1998	Beneficiaries (%) in March, 2005	Percentage fertility contribution of different age groups
15-19	1.64	2.69	15
20-24	14.86	16.61	28
25-29	21.90	21.62	23
30-34	19.24	19.35	17
35-39	18.43	15.11	10
40-44	11.90	10.66	4
45-49	5.87	5.82	0.5
50-54	2.29	3.13	-
55-60	1.93	2.01	-
60+		2.95	-

Since 1999 fewer than 3 percent of teenagers have been recipients of the CSG, and no change in the pattern of grant beneficiaries in this age range has occurred during the period of existence of the CSG. In contrast, 15 percent of all births in the same year were to mothers in their teen years. What is noteworthy is that below age 30, there are fewer CSG beneficiaries than women who gave birth in the year, whereas for those above age 30 there are more beneficiaries. This is in line with patterns of child care in South Africa, where older persons take on the care of children of young women and thus qualify to receive a CSG in respect of those children

Discussion

As stated above, the aim of the analysis was to assess teenage fertility trends in South Africa, and ascertain whether the introduction of the CSG is having an impact on the trends.

The main finding with respect to teenage fertility trends is that after progressive decline in teenage fertility in the eighties, there was an upsurge in the early nineties. Tentative evidence shows that teenage fertility has levelled off since 2000. These trends in teenage fertility occurred in a context of consistent decline in overall fertility throughout the period.

The second finding relates to the nature and the scope of the increase in teenage fertility:

- The increase in teenage fertility is found in all race groups, bar Indians. That is, teenage pregnancies have increased among White, Coloured and African women.
- There has been a shift in African fertility rates towards the younger age groups. This has occurred as a result of both an increase in fertility rates among young women and a decline of fertility rates among older women

The third finding concerns the pattern of CSG beneficiation. The main findings are:

- The CSG was introduced in 1998, and its coverage has increased dramatically between 1998 and 2005. In contrast, teenage fertility peaked in 1996 and since that time appears to be levelling off and even declining.

- More older women are direct recipients of the CSG than those who are child bearers and, by contrast, among young women there are more women who are child bearers than are direct recipients of the grants. That is, younger mothers are not benefiting directly from the CSG in the same proportion as older caregivers.

This study concurs with various studies which have shown that fertility rates have been declining in South Africa in the past few decades (for example, US Census Bureau, 2005). Fertility decline is often accompanied by changes in the fertility distribution as well as changes in the timing of fertility. As fertility rates decline, the fertility distribution often becomes narrower, while the location or timing of fertility tends towards younger ages - as has shown to be the case in this study.

As Sibanda et al. (1999) noted, generally fertility rates are affected by three phenomena - the start of child bearing, spacing between children, and the cessation of childbearing at later ages. This study has confirmed that reduction of family size, as shown by older women stopping childbirth earlier than before, is the major driver in the South African fertility decline. Youth fertility rates have, overall, increased during the period of study.

There is a widespread public perception, arising largely from moral and cultural concerns, that the increase in youthful fertility is a result of the provision of the CSG. Young women are thought to have children in order to access the CSG, presumably preferring short-term gains to long-term costs, and also because they don't comprehend the size of the grant in comparison to the cost of raising a child.

The evidence presented from this analysis shows that the rate of youthful fertility increase is not associated with the introduction of the Child Support Grant, for a number of reasons.

- First, the upsurge in teenage fertility predates the introduction of CSG. If anything, it coincides with the major political changes that were taking place in South Africa.
- Secondly, throughout the eight years of existence of the CSG, the direct beneficiaries of the grant who were teenagers has been below 3 percent, compared to a 15 percent contribution to fertility. If young women were bearing children in order to benefit from the grant, one would expect a higher proportion of teenagers to take advantage of the grant. The data presented shows, by contrast, that persons 35 years and older, whose fertility has been declining, are more likely to be direct beneficiaries of the CSG.
- Thirdly, the increase in youthful fertility has occurred across the board, including in sections of the society who do not qualify for the means-tested CSG.

An alternative explanation is that the rising share of births to young women is visible in most countries of the world. The general trend, worldwide, is that where fertility rates are lower, the share of births to young women is among the highest. In line with this trend, as the rate of fertility in South Africa declines, so the rate of fertility among young women is increasing.

Based on the data analysed in this study, we see no association between teenage fertility in South Africa and the Child Support Grant. As indicated earlier, specifically designed studies are needed to address this issue conclusively.

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Appendix 1: The use of the Relational Gompertz Model in estimating total fertility and age-specific fertility rates

The relational Gompertz model has been developed as a means of evaluating and adjusting for errors in fertility distributions obtained from reports of births in the year before the census/survey, vital registration and/or children ever born (Zaba, 1981). It is a sufficiently rigid model to reveal error deviations but flexible enough to follow the real significant features of the observations; that is, to fit good data well but bad data badly (Brass, 1981). The model is an improvement over the original Brass (1968) P/F ratio method in the sense that not only does it reveal error deviations in the data if present, but can also be used to estimate fertility where fertility has been subject to marked trends in recent years. This is because it is not necessary to assume that fertility has been constant in recent years or that reporting error does not vary with the age of the respondent as is the case in the P/F ratio method.

The relational Gompertz model for fertility proposed by Brass (1974) and expressed by Brass (1981) as

$$F(x)/F = A^{Bx}$$

where F(x) is the cumulated age-specific fertility rates up to age x, and F is the total fertility rate. A and B are constants for a particular set of rates that lie between 0 and 1. Taking natural logarithms on both sides, the equation can be rewritten as

$$F(x) = F.\, e^{-e^{-[\alpha + \beta Ys(x)]}}$$

and Ys(x) is defined as -ln [-ln {Fs(x)/F}] and Fs(x) is a standard cumulative fertility up to age x. α and β are parameters derived from A and B above and measure the location and spread of the fertility distribution for the particular population. The standard series of Fs(x) values have been computed by Booth (1979).

Brass also notes that for most applications, F is not known. Working under the guidance of Brass, Zaba (1981), using a linear transformation, has shown how F can be separated from the estimation of α and β using a Taylor series expansion with β =1. On the basis of Basia's work (often referred to as the

ratio method), the equation for fitting the relational Gompertz model to current fertility is given as:

$z(x) - e(x) = \alpha + 0.48\,(\beta - 1)^2 + \beta g(x)$

where z(x) is defined as; $-\ln [-\ln \{F(x)/F(x+5)\}]$.

F(x) is cumulated age-specific fertility rate up to age x and e(x) and g(x) are tabulated standard values while 0.48 is a constant.

Similarly, for mean parities and z(i) defined as

$-\ln [-\ln \{P(i)/P(i+1)\}]$

the equation is

$z(i) - e(i) = \alpha + 0.48\,(\beta - 1)^2 + \beta g(i)$

where P(i) is the mean parity in the age group 1, and, e(i) and g(i) are tabulated standard values while 0.48 is a constant (see Brass. 1981).

In the application of the model to evaluate and adjust fertility distributions, the z(x) – e(x) or z(i) – e(i) are plotted against the g(x) or g(i) in the case of current and life time fertility respectively. α and β are then calculated from the graph or determined algebraically. If β is not close to 1, the correction term involving $0.48\,(\beta-1)^2$ is applied, thus,

α = intercept – $0.48\,(\beta-1)^2$

The α and β values are then applied to the standard series of z values to obtain proportional parities and estimates of F. The "best" series of F are averaged to obtain a single estimate of F. The estimated F together with the α and β values applied to the standard fertility cumulants, can then be used to smooth the age pattern of fertility (i.e. the reported age-specific fertility rates) when errors are present in such distributions.