



The Centre for the Analysis of
South African Social Policy



The impact of taxes and transfers on child poverty in South Africa

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Summary

The research described here considers the impact of tax and transfer policy on the situation of children in South Africa. Given that the government has made explicit legislative commitments to children and that poverty rates are higher for children than for any other age group it might be expected that children would be a priority in policy reforms. The microsimulation model SAMOD is used to simulate certain policy reforms announced in the 2008 budget and implemented during 2008 and explore the impact of these reforms on children and other age groups across the income distribution. A budget-neutral policy reform is also considered to determine the extent to which policy could do more to support children without adversely affecting other poor groups.

1. Background

In 1994 South Africa began its transition to democracy following several centuries of racial discrimination and oppression of the black¹ majority. The newly elected Government of National Unity set to work drafting a new constitution and dismantling the remnants of the apartheid regime. More than a decade later, whilst legislation supports a free and just society without discrimination, many people still face limited opportunities as a result of extreme poverty. In South Africa in 2006 around 29% of households lived on less than R800 per month², this equates to approximately \$4 per household per day (Statistics South Africa, 2007a). Child poverty is similarly a pressing issue. Around 55% of children aged under 18³ (approximately 10 million children) lived in 'ultra-poor' households (households with expenditure less than R800 per month) in 2005. In other words, these children were living in households unable to afford even the most basic necessities (Monson *et al.*, 2006).

The exceptionally high rates of child poverty in South Africa are rooted within the country's history and trajectory since the end of the apartheid era. Leatt *et al.* cite the "systematic disenfranchisement and underdevelopment of the black majority", the "rapid emergence of the South African economy into the global marketplace" and the HIV/AIDS pandemic as the three major causes of child poverty (Leatt *et al.*, 2005:3). Further contributing factors include unequal access to land, unequal access to education and large numbers of working age men

¹ Throughout the text the terminology used to describe population groups in South Africa follows the definition used by Statistics South Africa whereby the population is classified into five groups according to common characteristics of descent and history, these are: black African, coloured, Indian, Asian, white and other. The term 'black' is used to refer to all groups who are non-white. (see: Statistics South Africa (2004), *Census 2001 Concepts and Definitions*, Pretoria, Statistics South Africa).

² A poverty line of R800 per month is used by the government to denote an 'indigent' household and is seen as a measure of ultra-poverty.

³ Unless otherwise specified, children are defined throughout as persons under the age of 18.

and women migrating in search of work. The latter contributed to the break up of families leaving either single-parent households or households with no working age adults in rural areas (Lund et al., 2007:11).

Various research studies have measured child poverty in South Africa using different data and definitions. There is consensus that child poverty rates in South Africa are high with estimates of the percentage of children living below internationally recognised poverty lines ranging from 60-80%. Most recently, data from the 2006 GHS indicated that 68% of children lived in households with an income of less than R1,200 per month (Proudlock et al., 2008), Streak *et al.* used the 2005 Income and Expenditure Survey to estimate a child poverty rate of 65.5% based on a per capita poverty line of R545 per month (Streak *et al.*, 2008) and Barnes estimates a child poverty rate of 81% based on a per capita poverty line of R818 at 2007 prices (Barnes, forthcoming).

South Africa faces further challenges alongside the high incidence of income poverty. Crime is highly prevalent, affecting both the rich and the poor, unemployment is high, many people work in the informal sector and many areas lack any sort of economic activity (Hoogeveen and Ozler, 2004). HIV prevalence is increasing, as is the proportion of people who will die from HIV/AIDS each year, leaving increasing numbers of children without adult care-givers or caring for sick parents and siblings (AVERT, 2008). Huge inequalities exist between and within race groups; it is estimated that the richest 10% of the population earn 50% of the total income (Skweyiya, 2008) and estimates of the Gini⁴ coefficient in 2001 range from 0.56 to 0.77 (Gelb, 2003; HSRC, 2004). The trends in inequality since 2001 are unclear as there is a lack of consistent data; however, it is suggested that, overall, inequality has not decreased significantly since 2001 and may even have increased (Ramokgopa, 2008).

The focus on examining the impacts of policy on child poverty and inequality is in part driven by the extensive literature supporting the need for interventions on child poverty, both generally and within South Africa specifically (Adam and Brewer, 2004; Bennett, 2006; Guthrie *et al.*, 2003; Guthrie *et al.*, 2000; Hirsch, 2005, 2006; Leatt *et al.*, 2005; Mehrotra, 2004; Proudlock *et al.*, 2008; Streak, 2000; UNICEF, 2000) and in part due to the fact that the South African government has made explicit commitments to addressing child poverty as a priority. The commitments relate to both child protection and child rights enacted through the Bill of Rights in the Constitution of the Republic of South Africa (Republic of South Africa, 1996) and the Children's Act (Republic of South Africa, 1996, 2005) and by ratification of various international treaties and conventions (Casseim and Streak, 2002).

⁴ The Gini coefficient is a measure of income inequality ranging between 0 and 1. A value of 0 implies perfect equality where the wealth of a nation is equally spread amongst the whole population, a value of 1 indicates perfect inequality where one individual holds all the wealth and the rest of the population have nothing.

The Bill of Rights, included within the South African Constitution, stipulates certain social rights to all people as well as specific rights for children. Section 27 of the Bill of Rights states that "Everyone has the right to have access to...social security, including, if they are unable to support themselves and their dependents, appropriate social assistance." However, the statement contains the final caveat that "The state must take reasonable legislative and other measures, *within its available resources*, to achieve the *progressive realisation* of these rights." (my emphasis) (Republic of South Africa, 1996: Sec 27 1 and 2). The Bill of Rights also contains a separate section relating specifically to the rights of children. Section 28 provides that "Every child has the right to basic nutrition, shelter, basic health care services and social services" (Republic of South Africa, 1996: Sec 28 1.c). Whilst these rights do not differ greatly from the rights afforded to everyone, the clause relating to "available resources" and "progressive realisation" is not included suggesting that the realisation of children's rights is not subject to limitations on available means and therefore must be prioritised over the weaker rights of adults. As Seekings comments: "...international conventions signed by South Africa and South Africa's own constitution not only require the government to provide for the basic needs of South African children but they further seem to suggest that children have the first claim on state resources i.e. that children's needs should be met before those of older people" (Seekings, 2002: 25).

In addition, the Convention on the Rights of the Child (CRC) which came into force in 1990, and was ratified by South Africa in 1995, states that governments will take measures to ensure the economic, cultural and social rights of children "to the maximum extent of their available resources" (UNICEF, 1990:2). The 'rights' that governments should aim to provide include the right to social security and the right to a standard of living sufficient to provide adequate physical, mental, moral, spiritual and social development. Although it is not stated exactly how 'available resources' should be defined and measured, the CRC implies that this should be done in some way. In South Africa a national plan was established to ensure the realisation of children's rights, including monitoring and evaluation of progress. In 1996 a steering committee comprised of representatives from government departments and UNICEF set out a framework for the actions that the South African government would take in order to meet its commitments to children (National Programme of Action Steering Committee, 1996). The National Programme of Action for Children (NPA) was finally launched in 1999 with the aim of creating a "holistic programme that works to promote and protect the rights of children in South Africa" (National Programme of Action, 2000).

As well as expressing a commitment to children through legislation, the South African government has also provided tangible support to children through cash transfers. Since

1998, the government has provided direct financial support to carers of children through the Child Support Grant: a monthly cash benefit for children under the age of 14⁵. The introduction of the Child Support Grant has resulted in improved outcomes for children, both financially and for other aspects of child well-being (Aguero *et al.*, 2005, 2006; Goldblatt, 2004; Williams, 2007). However, slow take-up of the grant and other factors such as high levels of unemployment have meant that, although the grant has undoubtedly had an impact on the income of poor households with children, absolute child poverty rates have not fallen significantly since 2000 (Proudlock *et al.*, 2008; Streak *et al.*, 2008).

In 1994 policy makers in South Africa faced competing challenges of high rates of poverty, high levels of income inequality and high levels of government debt. The nature of the relationship between growth and development and the policy response required to achieve both has been a source of considerable debate. In 1994 the strategy of the first post-apartheid government – implemented through the Reconstruction and Development Program (RDP) – had a strong focus on poverty alleviation and redistribution and viewed children as central to the development process (Mokate and Morgan, 1996). The RDP aimed to rapidly reduce poverty and inequality through large-scale government investment in a range of public sector programmes that would provide both jobs and services to the poor. These ambitious targets were, however, not without constraints. The 1994 RDP White Paper clearly argues that poverty reduction and redistribution can only be achieved if government debt is reduced – fiscal restraint, rather than poverty reduction, was the highest priority (Republic of South Africa, 1994). Following the RDP programme came the Growth, Employment and Redistribution programme (GEAR) in 1996 and then the Accelerated and Shared Growth Initiative of South Africa (ASGISA) in 2006. GEAR has been described as “more firmly rooted in the neo-liberal economic paradigm” (Streak and Wehner, 2004:71) and both programmes have been criticised for prioritising macro-economic aims and economic growth over poverty alleviation and for promoting growth which is not ‘pro-poor’ (Bell, 2006; Bhorat, 2006; McGrath and Akoojee, 2007; Weeks, 1999).

In particular, critics have accused the government of not doing enough to address poverty amongst especially vulnerable groups, including children, and relying too heavily on markets to generate growth and poverty reduction (Leatt *et al.*, 2005; Streak, 2000; Streak and Wehner, 2004; Triegaardt, 2005). van Rensburg claims that it is clear that the South African government “is not fulfilling its constitutional or international duties towards the social security rights of the child” (van Rensburg, 2005: 33). There have also been calls for more explicit analysis of the impact of budgetary decisions on children and for the monitoring and

⁵ The CSG was initially available to children under the age of 7. The age range has since been gradually extended. In 2008 the grant was available to children aged 0 to 13 and it will be extended to children under the age of 15 in January 2009.

evaluation of government progress towards fulfilling its commitments on child poverty (Coetzee and Streak, 2004; Streak, 2000). The United Nations Committee on the Rights of the Child, commenting on South Africa's compliance with the CRC, expressed concern about the "insufficient efforts made to ensure the adequate distribution of resources allocated for children's programmes and activities" (United Nations Committee on the Rights of the Child, 2000:Sec 15) and that the "current data collection mechanism is insufficient... in order to monitor and evaluate progress achieved and assess the impact of policies adopted with respect to children" (United Nations Committee on the Rights of the Child, 2000:Sec 14). The NPA seems not to have fulfilled its intended role as a champion of children's rights and it is not clear how, or even if, children are considered within the budgetary process. Creamer claims that "nowhere in the budget process are government's socio-economic rights obligations in general, or its socio-economic rights obligations to children in particular, explicitly taken into account and planned for" (Creamer cited in Streak and Wehner, 2004:73). The role of monitoring and evaluation has been carried out outside of government, for example, the Children's Budget Unit at the Institute for Democracy in South Africa produces regular reports highlighting the mismatch between government commitments on children's rights and the life circumstances of children in South Africa with the aim of encouraging discussion around how the budget should be used as a tool to alleviate child poverty (Casseim and Streak, 2002).

Claims that the government is not prioritising children in budgetary decisions have been supported by empirical analysis. Analyses of social security beneficiary data by Guthrie in 2001 highlighted the fact that whilst children comprised 44% of the population in 2001, only 14% of the social security budget was targeted towards children: older people received 62% of the total budget share and only represented around 7% of the population (Guthrie, 2001:7). Since 2001, the expenditure on social transfers for children have increased as take-up of the CSG has increased (Noble *et al.*, 2005), the amount of the grant has been increased and the maximum age until which children can receive the grant has been extended from 6 to 13 years. However, social security expenditure has also increased for other groups, for example, the elderly and disabled, and taxpayers have also benefited from numerous reductions in income tax. Thus, although support for children has been expanded, it is difficult to determine if children have been *prioritised* over other groups.

This research examines certain reforms to tax and transfer policy announced in the 2008 budget and implemented throughout 2008. Crucially for children, the 2008 budget saw the first increase in the means test for receipt of the Child Support Grant since its introduction in 1998. Prior to 2008 the Child Support Grant had a lower income threshold of R9,600 per year for carers living in formal housing in urban areas and a higher threshold of R13,200 per year

for carers living in rural areas or in informal housing. The fact that these income thresholds had remained unchanged since 1998 had been a source of significant criticism as they have failed to keep up with the growth in incomes and in the cost of living (Budlender *et al.*, 2005; Delany *et al.*, 2008). In 2008 the urban/rural and formal/informal distinctions were removed and a single means-test was implemented with income thresholds of R50,400 for a couple with one or more children (and R25,200 for a single person). This change resulted in an increase in the number of children eligible to claim the Child Support Grant from 7.7 million to 10.3 million⁶, and therefore clearly represented a significant move towards reducing child poverty. However, other policy reforms also benefited other groups. The income thresholds for all other cash transfers were also revised upwards and the amount of the transfers increased. In addition, revisions were made to taxation policy; whilst the 2008 budget promised an extra R12 billion over the next three years to extended social security provision (Manuel, 2008) it also returned more than R10 billion in just one year to taxpayers (SARS, 2008).

This paper analyses the position of children in relation to other groups in South Africa before and after these policy reforms. The South African Microsimulation Model (SAMOD) is used to simulate tax and transfer policy in the two time periods. In addition, SAMOD is used to explore the extent to which a hypothetical budget-neutral policy reform could improve the situation of children without being disadvantageous to other poor groups. Microsimulation is a technique that is commonly used in policy analysis. It involves using micro-data on small units of analysis, in this case individuals in households, to examine the impact of different policy scenarios on those households. The individual level results are generally grossed up using weights to the national level. Thus, the technique provides information about micro-level impacts, such as the change in household income and macro-level impacts, such as the overall cost of a policy reform. The following section of the paper describes the microsimulation model SAMOD and the data used in the simulations. The results of the simulations are presented in section 3.

2. The South African Microsimulation Model (SAMOD)

In 2007 the Centre for the Analysis of the South African Social Policy (CASASP) at the Department of Social Policy and Social Work at the University of Oxford was commissioned to build a microsimulation model for South Africa, which could be used by analysts in the National Government Department of Social Development in the Republic of South Africa. This

⁶ Assuming 100% take-up.

two-year project was funded by the UK Department for International Development Southern Africa as part of its Strengthening Analytical Capacity for Evidence-based Decision-making programme (SACED)⁷. The model, SAMOD, was completed in March 2009. SAMOD is a static microsimulation model which has been developed using the EUROMOD platform⁸ (Wilkinson, 2009; Wilkinson *et al.*, 2009). EUROMOD is a multi-country tax benefit model covering all 15 pre-2004 European Union member states and four new accession states (Lietz and Mantovani, 2006; Sutherland, 2001; Sutherland *et al.*, 2008).

Static microsimulation models (like EUROMOD and SAMOD) are the simplest and most transparent type of microsimulation model and they are widely used in academia and government. They are sometimes criticised as being overly simple and restrictive because they ignore behavioural responses. However, Mitton *et al.* (2000) argue that the model design really depends upon the policy question to be addressed and both static and the more complex behavioural response models have uses in differing applications. Bourguignon and Spadaro (2006) also suggest that static models are perfectly adequate in evaluating changes in individual and social welfare, as, in most cases, behavioural changes can be assumed to be insignificant. However, they do warn that static models may not be entirely reliable in predicting government budget constraints when strong behavioural responses are predicted.

In the case of South Africa it is difficult to develop good behavioural response models from cross-sectional data and there are no national longitudinal studies currently available in South Africa from which it might be possible to develop reliable models of behavioural responses to policy changes⁹. In addition, as many households in South Africa have incomes which are at or below a basic subsistence level and unemployment rates are extremely high due to a severe shortage of jobs, it could be argued that the impacts on labour supply due to a change in household income is likely to be small, at least in the short term. Most individuals do not have the choice to opt in to or out of work if their income changes: many people are desperately looking for work and those who do have jobs are keen to keep them (Noble *et al.*, 2008; Surender *et al.*, 2007). As the aim here is to examine the impact of a policy change in the short term, the use of a static model seems appropriate. However, behavioural response models have been built for South Africa and these might be considered more

⁷ The SAMOD project team comprised Professor Michael Noble (Principal Investigator for the project and Director of CASASP), Kate Wilkinson (Research Fellow at CASASP and main researcher on the project) and Dr Gemma Wright (Senior Research Fellow and Deputy Director of CASASP). Consultants on the project were Professor Holly Sutherland (University of Essex), Dr Ingrid Woolard (University of Cape Town), Dr Martin Evans (University of Oxford) and Dr Charles Meth (acting in a personal capacity).

⁸ SAMOD is jointly owned by The University of Oxford, The Department of Social Development of the Government of the Republic of South Africa and The University of Essex 2008. SAMOD was developed using the EUROMOD framework (based on Version D17 of EUROMOD). The author and all other members of the SAMOD team are grateful to Professor Sutherland and her team at The University of Essex for granting access to EUROMOD and allowing it to be modified to build SAMOD, and for their help and support during the project.

⁹ The first wave of a national household panel study "The National Income Dynamics Study" was undertaken in early 2008 so longitudinal data will be available in South Africa in future years.

suitable for evaluating the long term impact of reforms (see for example Adelzadeh (2007) and Hérault (2005)).

SAMOD is a single country model with a user interface in Excel. The actual model calculations are carried out by an 'engine' written in C++ but this never has to be viewed or amended by the model user. Aside from preparing the data in a format suitable to be read into the model, all policy specifications and parameterisations are carried out within Excel. The model allows a variety of different policy systems and datasets to be incorporated, this allows the user to build up a cross-section of policy changes over time and undertake 'policy swapping' exercises. SAMOD simulates the majority of national tax and transfer schemes that have a significant and direct impact on household incomes. The main exclusions from the simulations are private pensions and capital gains tax. The former are recorded in the data and the latter are excluded due to lack of data.

The data underlying SAMOD are drawn from various household surveys. The main data source is the 2000/1 Income and Expenditure Survey which is supplemented by the 2000 Labour Force Survey, the 2005/6 Income and Expenditure Survey, the 2006 Labour Force Survey and the 2007 Community Survey. The 2000/1 Income and Expenditure Survey data were used as the 'base data'. They were then updated to mid-2007. This involved updating household weights to reflect 2007 population estimates¹⁰, updating income and expenditure values using the Income and Expenditure Surveys in 2000 and 2006, and, modelling the prevalence of certain key characteristics that impact upon the receipt of social transfers. These factors included: disability, foster child status and the propensity to contribute to social insurance schemes. The resulting data set used in SAMOD therefore replicates, as far as possible, the population of South Africa in mid-2007¹¹. Changes in household composition and employment status have not, however, been taken into account. These data have been used in the simulations which are discussed in the following sections. Thus, the data represents a mid-2007 population and the policy time points analysed relate to policy reforms announced in February 2008 and implemented throughout 2008. It should be noted that, in common with many analyses produced using microsimulation, the aim is to simulate the effect of a policy reform whilst keeping household income and expenditure and population characteristics constant. Thus, the actual poverty rates and inequality measures observed in South Africa in 2007 and 2008 will differ somewhat from the results presented here due to the differences between household characteristics in 2007 and 2008 and the assumptions

¹⁰ 2007 population estimates were generated using the ASSA2003 Aids and Demographic model developed by the Actuarial Society of South Africa. These estimates were used as they were the only estimates for which a breakdown of population totals by age and race could be obtained.

¹¹ For further details on the method used to create the 2007 data set see Wilkinson, K (2009), Adapting EUROMOD for use in a developing country – the case of South Africa and SAMOD, Centre for the Analysis of South African Social Policy, Working Paper.

that are made regarding take-up of social transfers and tax evasion. In all cases benefit take-up is assumed to be 100% and there is no tax evasion. Whilst these assumptions are not realistic they are not overly problematic as the aim is to compare policies under an 'ideal' scenario i.e. 100% take up and no tax evasion.

3. Policy simulations and findings

3.1 Policy reforms in the 2008 budget

The main form of support available to poor households in South Africa is through a system of social transfers. These are provided to children, the elderly and the disabled. There is currently no support available for the non-disabled working age poor apart from very limited contributory unemployment insurance scheme. Table 1 below summarises the social grants and social insurance schemes available, any applicable income tests and the amount at which each transfer is paid. The data in Table 1 relate to the policy rules in mid-2007.

Table 1: Social grants available in South Africa, mid-2007

Name of transfer	Target population	Income test	Amount per month
Child Support Grant	Children (0-13)	R9,600 per annum for main carer and spouse if in urban area and formal housing R13,200 per annum for main carer and spouse if in rural area or informal housing	R200
Foster Child Grant	Foster children (0-17)	R14,880 per annum for the child	R620
Care Dependency Grant	Children (0-17) requiring full-time care due to disability or illness	R48,000 per annum for the main carer and spouse R20,880 per annum for the child	R870
Disability Grant	Adults unable to work due to certain long term illness or disability. Women (18-59) and men (18-64).	R21,612 per annum for a single person, R40,092 for a couple.	From R100- R870 per month
Old Age Grant	Women aged 60 and over and men aged 65 and over.	R21,612 per annum for a single person, R40,092 for a couple.	From R100- R870 per month
Grant-in-Aid	Old Age Grant and Disability Grant recipients who require full-time care.	As per Disability Grant and Old Age Grant	R200 per month
Unemployment Insurance Fund	Unemployed	Must have made sufficient contributions.	Up to R4,416 per month

Source: South African Social Security Agency, Department of Labour

The other main policy of relevance is personal income tax. The tax system in South Africa is progressive with six tax bands ranging from 18% to 40%. No tax is paid on incomes below R43,000 per annum for those under 65 and R69,000 for those over 65. Although tax concessions are provided for certain types of expenditure (for example contributions to private health care and pension schemes) there are no tax concessions directed specifically at children.

Table 2 summarises the main policy reforms announced in the 2008 budget and implemented during 2008. In relation to child poverty, the key policy change is the significant increase in the income threshold for receipt of the Child Support Grant. As previously mentioned this resulted in an additional 3 million children becoming eligible to receive the grant.

Table 2: Policy reforms announced in the 2008 budget

Policy	Policy reforms in 2008
Child Support Grant	Income test increased to R50,400 per annum for the main carer and spouse or R25,200 for a single parent, grant increased to R210 per month.
Foster Child Grant	Income test for children removed, grant increased to R650 per month.
Care Dependency Grant	Carer income test increased to R225,600 per annum for a couple and R112,800 per annum for a single person, income test removed for children. Grant increased to R940 per month.
Disability Grant	Income test increased to R53,856 per annum for a couple and R26,928 for a single person. Grant increased to R940 per month.
Old Age Grant	Income test increased to R53,856 per annum for a couple and R26,928 for a single person. Grant increased to R940 per month.
Grant-in-Aid	Grant increased to R210 per month.
Unemployment Insurance Fund	Maximum amount increased to R4,742 per month.
Income tax	All tax band thresholds revised upwards. Minimum income for paying tax increased to R46,000 per annum (under 65) or R74,000 per annum (over 65).

Source: South African Social Security Agency, Department of Labour

3.2 Income pooling, equivalence and poverty lines

The approach taken here is to first consider the pre tax and transfer incomes of South African households then to progressively add in each policy, beginning with social transfers and finishing with income tax, in order to analyse the impact that each policy has on various poverty and inequality metrics. Three key assumptions are particularly important in the interpretation of the analyses to follow, these are: the intra-household allocation of

resources, the choice of equivalence scale and the choice of a poverty line. These three issues are discussed below.

As a large number of households in South Africa live on incomes close to or below the subsistence level it is often the case that household income may be pooled in order to provide the household with basic necessities. This means that a social transfer may not always be used solely by the person for whom it is intended (Case, 2001; Guthrie, 2002; Sagner and Mtati, 1999). Intra-household allocation is extremely difficult to determine and it has been argued that in a country like South Africa even the concept of a household as a unit of income pooling is inappropriate as the household also interacts with the wider community (Bozalek, 1999). However, given that little is known, or can be assumed, about the distribution of income within households, household income is considered to be pooled in the analyses which follow. This means that income received from a social grant directed at an elderly person, for example, is allocated between all household members. The income of each person in the household is then calculated using an equivalence scale. The choice of an appropriate equivalence scale is a key consideration in the research.

A number of methods have been used to compare household incomes in South Africa and there is little consensus about which is most appropriate although current trends seem to be moving towards a simple per capita approach (Barnes, forthcoming; Streak *et al.*, 2008; Woolard and Leibbrandt, 2006). The choice of scale clearly influences household income levels and measures of poverty and inequality although it has been shown by Woolard and Leibbrandt (2006) that most of these statistics for South Africa are not especially sensitive to the choice of equivalence scale. It has been noted that the choice of scale should be appropriate to the type of analyses being carried out. Proponents of the simple per capita scale argue that this is suited to measuring poverty because poor households spend little on the type of goods that can generate economies of scale in larger households (for example furniture or electrical appliances) and spend most of their income on items such as food where economies of scale are minimal. In addition, attempts to derive empirical scales have demonstrated that for poor households it is often found that the costs of children are very similar to the costs of adults (Deaton, 1997).

However, there are also drawbacks with per capita scales as they do not allow for economies of scale. Economies of scale will no doubt vary across the income distribution and may be more likely to occur in wealthier households; however, as the aim of the research is not just to identify households in poverty but to examine the *relative* income levels of households across the income distribution it is important to select a scale that does allow for some economies of scale. The approach taken in these analyses is to calculate the number of adult

equivalents in a household following the method used by Cutler and Katz (1992). The number of adult equivalents (A) in a household is calculated using an equation with the following form where α is the total number of adults in the household (aged 16 and over) and β is the total number of children:

$$A = (\alpha + (c \times \beta))^{\theta}$$

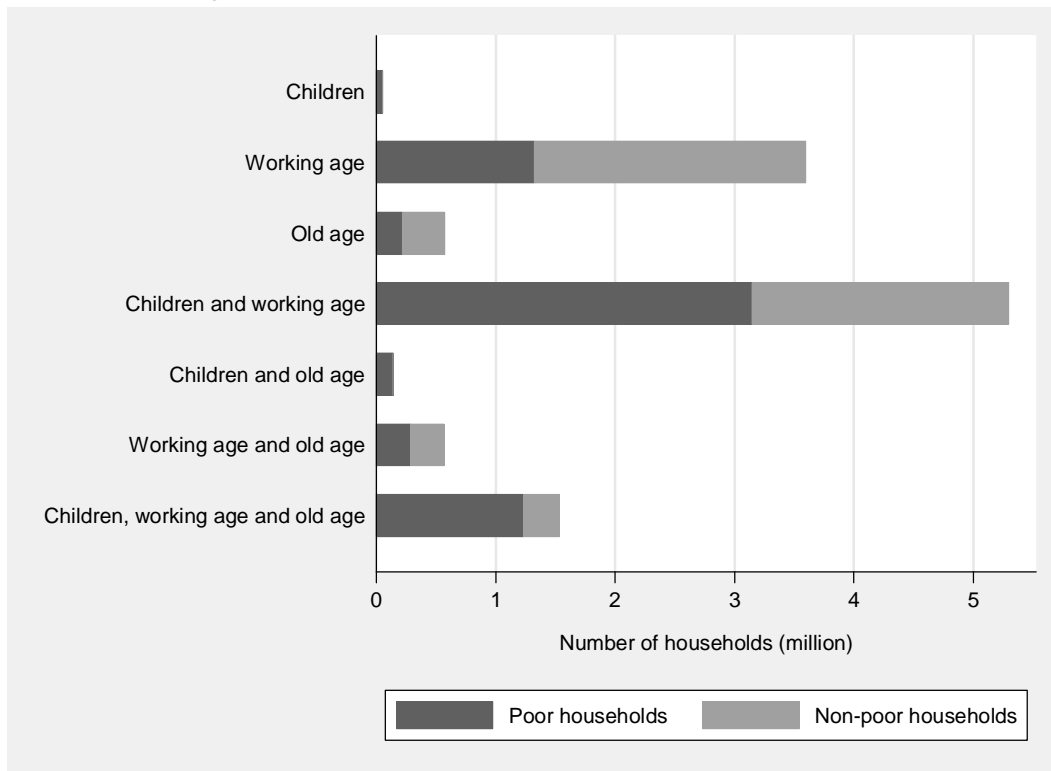
Values of $c=0.75$ and $\theta=0.86$ are selected; these represent the ratio of the cost of a child to the cost of an adult and the household economies of scale respectively. These align with the implicit equivalence scales derived by Potgieter (Woolard and Leibbrandt, 1999) using the Household Subsistence Level approach and also represents an approximate mid-point in the range of scales that have been used in South Africa.

The final key parameter is the poverty line. South Africa does not have an official poverty line at present. The poverty line used here (R851 per month) is based on the upper bound of the poverty line used by Hoogeveen and Özler (2004) and also recommended by Statistics South Africa and the National Treasury (Statistics South Africa, 2007b). The poverty line was calculated using a 'cost-of-basic-needs' approach. The value used by Hoogeveen and Özler (R593 per capita in 2000 Rands) was updated from 2000 to 2007 prices using the average consumer price index for 2007.

3.3 Household structures and pre tax and transfer incomes

An understanding of typical household compositions in South Africa helps to illustrate the potential for overlap of social transfers within particular types of households. Figure 1 shows the number of each type of household where household type is defined according to the age of the household members. Households are classified as 'poor' or 'non-poor' depending upon their pre tax and transfer equivalised income. The poverty line used throughout the analyses is R851 per month as discussed above.

Figure 1: Number of 'poor' and 'non-poor' households of each household type – based on an equivalised poverty line of R851 per month



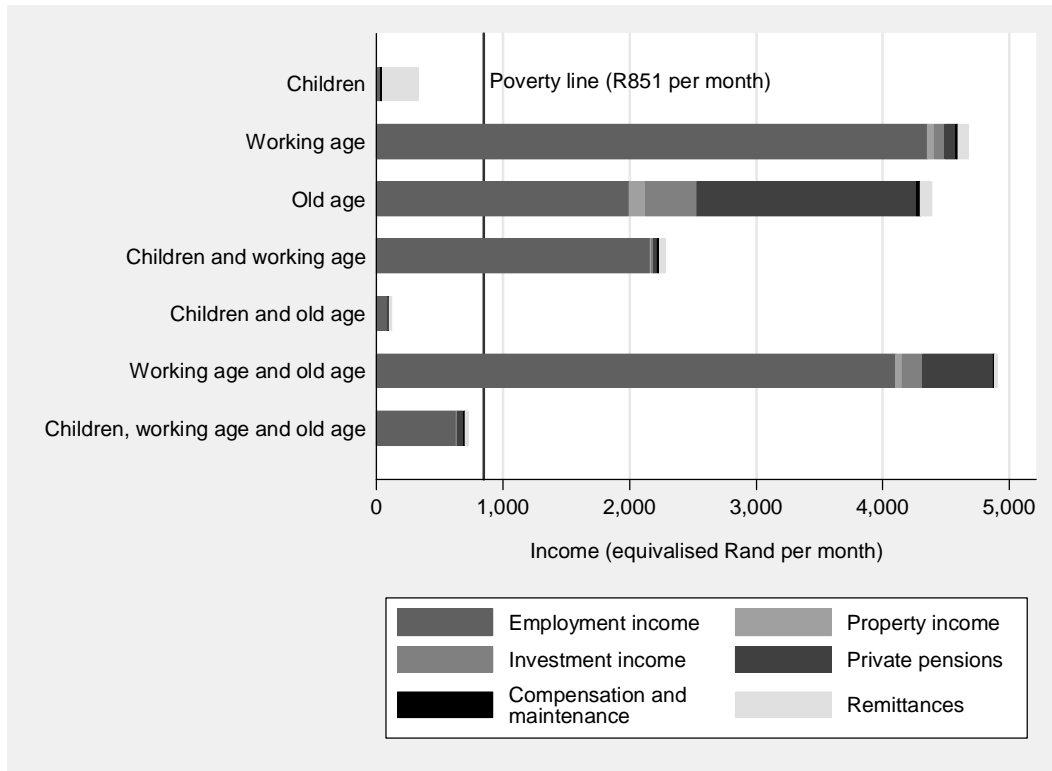
Ninety-eight¹² per cent of children in South Africa live with working age adults (adults aged 18-59). However, there are also a large number of households containing three generations and a relatively smaller number containing children and old age adults. Child-headed households are not common but their existence is certainly concerning, particularly as these households are generally unable to access social transfers. It is notable that households containing children are more likely to be poor than households without children and child-only and child and old age households are almost exclusively poor households.

Figure 2 shows the sources of income for each household type. Again it is clear that households containing children have lower pre tax and transfer incomes, on average, than other types of households (average income is R1127 for households containing children and R1879 for households without children). Households containing children and old age adults have the lowest average income of all household types. Comparing these households with child-headed households it is clear that child-headed households derive most of their income from remittances, whilst households containing children and old age adults have very little pre tax and transfer income. These households will be entitled to claim both a Child Support

¹² From own calculations based on the Income and Expenditure Survey.

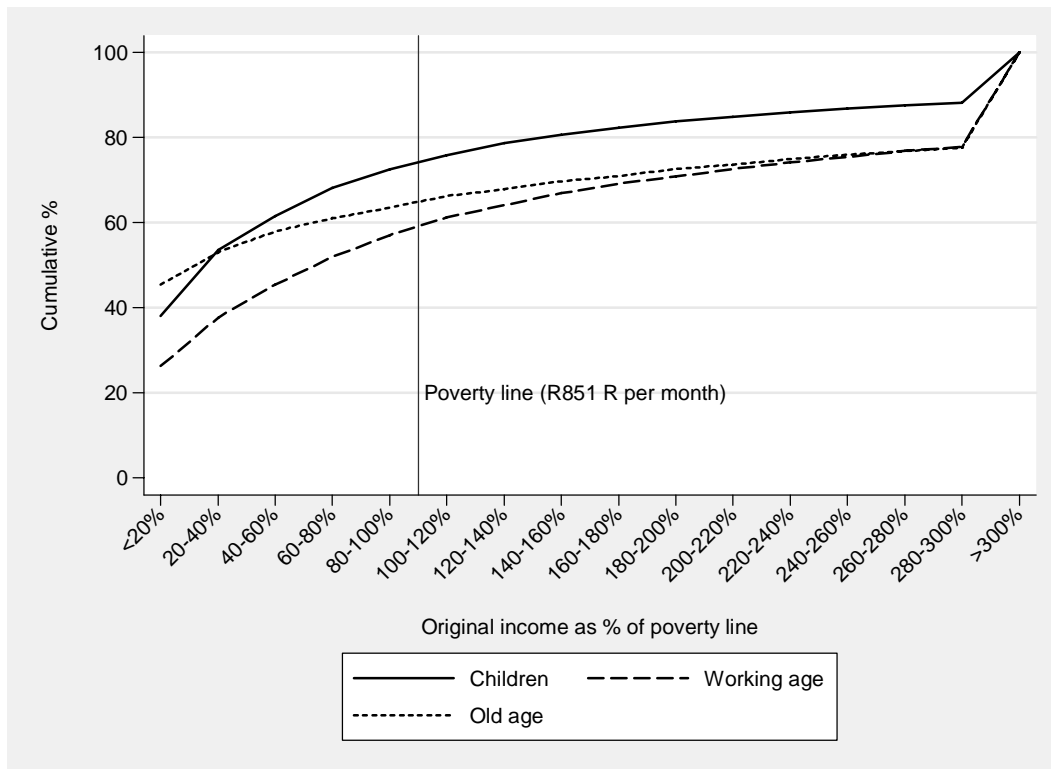
Grant and an Old Age Grant (whereas a child-headed household is often not entitled to any type of social grant), thus, the post transfer incomes of these households will be higher.

Figure 2: Sources of income for different household types (pre tax and transfer)



Finally, Figure 3 shows the cumulative distribution of children, working age and old age adults across the income distribution. Children have the highest poverty rates (for pre tax and transfer) income of all groups, although, a higher proportion of older people have pre tax and transfer income less than 20% of the poverty line (i.e. less than R170 per month).

Figure 3: Cumulative distribution of children, working age adults and old age adults according to pre tax and transfer income



In summary, the analysis of pre tax and transfer incomes indicate that children are concentrated at the lower end of the income distribution and households containing children are more likely to be poor before the impact of taxes and transfers is considered.

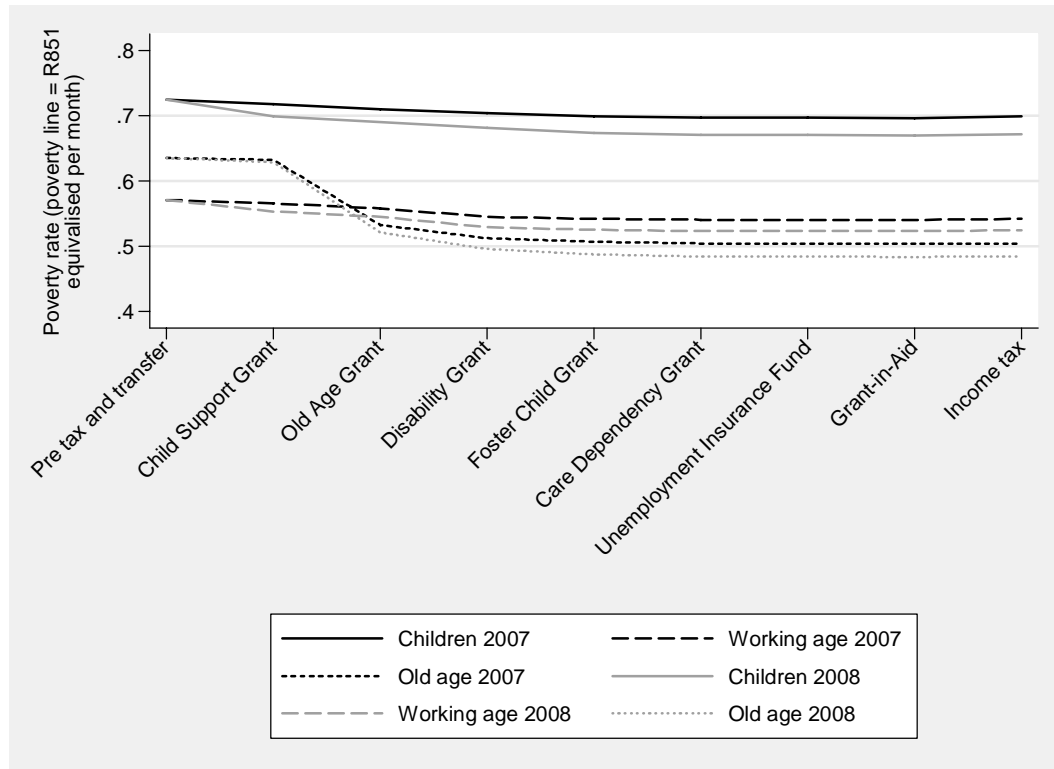
3.4 The impact of taxes and transfers

The results presented in Figures 4 to 7 show the impact of progressively adding each social transfer to household income and then finally subtracting income tax liabilities. The impact is shown separately for children, working age adults and old age adults and for 2007 and 2008 policies (after the 2008 budget reforms).

Figure 4 shows the change in poverty rates – the results for the 2007 policy scenario are shown in black and the 2008 policy scenario is shown in grey . The poverty rate for children is higher than for all other groups and adding social transfers to household income does little to reduce the overall poverty rate. Although the poverty rate for the working age population is much lower, transfers also have little impact here. By contrast, there is a reduction in the poverty rate for old age adults of around 10 percentage points following the introduction of the Old Age Grant. This difference can be explained by considering the relative size of the

Child Support Grant and the Old Age Grant. At R870 per month, the Old Age Grant is sufficient to raise individual income above the poverty line, whereas the Child Support Grant at R200 per month would only impact upon the poverty rate for an individual who is already close to the poverty line. Despite this, it is clear that the 2008 policy reforms do reduce the poverty rate for all groups as each group has a lower poverty rate following the 2008 policy reforms.

Figure 4: Impact of transfers and taxes on the poverty rate, 2007 and 2008



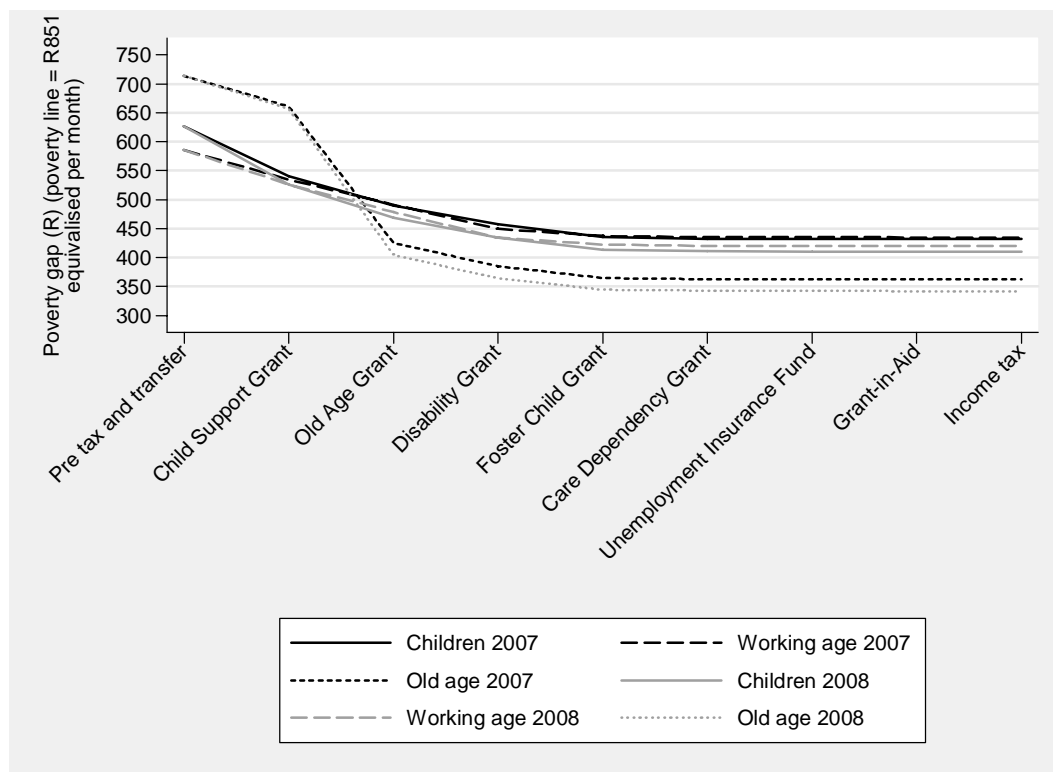
Even though the amount of the Child Support Grant is too small to have very much impact on the poverty line, it does increase the income of the households that receive it. Figure 5 repeats the analyses in Figure 4 showing the change in the poverty gap¹³.

In Figure 5 it is possible to see how each transfer impacts upon household income. The transfers which have the most impact are the Child Support Grant and the Old Age Grant, following that the Disability Grant and Foster Child Grant have a smaller impact and the rest of the transfers do very little. Income tax has no impact on the incomes of poor households as the tax threshold is significantly above the poverty line. Given that income pooling is assumed there is clearly some overlap of transfers and all age groups benefit from the Old Age Grant and Child Support Grant. However, it is noticeable that the Child Support Grant

¹³ The poverty gap is calculated as the average distance from the poverty line for all individuals classified as poor.

seems to have more impact on the old age population than the Old Age Grant has on children. This is a result of household structures and the relatively larger proportions of children compared to older people in the South African population. In 2008 it is estimated that 26% of children eligible for the Child Support Grant lived with an older person who was eligible for the Old Age Grant, whereas 52% of older people claiming an Old Age Grant lived with a child who was eligible for the Child Support Grant. Thus old age adults are more likely to benefit from both the Child Support Grant and the Old Age Grant than children.

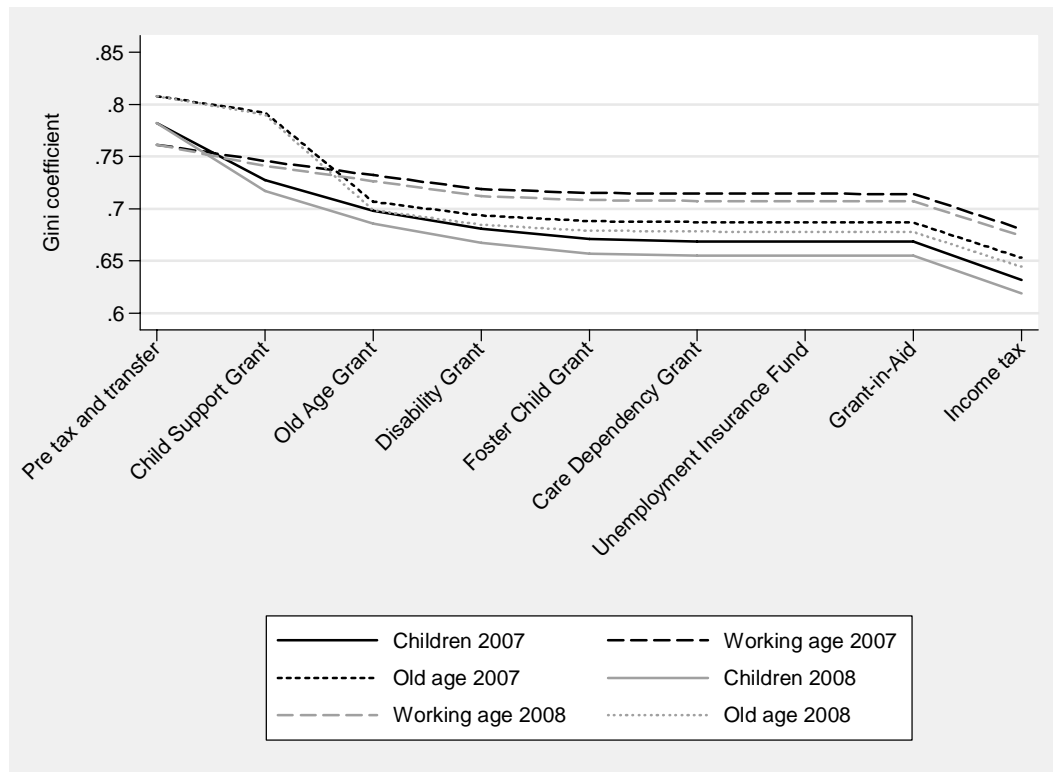
Figure 5: Impact of transfers and taxes on the poverty gap, 2007 and 2008



In Figures 4 and 5 it is clear that income tax has little impact on poverty rates or poverty gaps. Figure 6 shows the change in the Gini coefficient following the introduction of each policy. The Gini coefficient was selected here as it is sensitive to changes in the middle of the income distribution. General entropy measures can also be used to create 'top' and 'bottom' sensitive indices; however, as many of those at the bottom of the income distribution report zero incomes this tends to make bottom sensitive measure very unstable. As the interest here is in examining both the impact of transfers (which affect the lower end of the income distribution), and income tax (which affects the higher end of the income distribution) the Gini coefficient was considered most suitable. Other measures, for example, percentile ratios, could also be considered.

South Africa has one of the highest Gini coefficients in the world. Even after taxes and transfers the Gini coefficient is still over 0.6 for all groups (see Figure 6). Income inequality is actually lowest amongst children (children tend to be concentrated in poor households and very few children live in very wealthy households) and highest amongst the working age population.

Figure 6: Impact of transfers and taxes on the Gini coefficient, 2007 and 2008

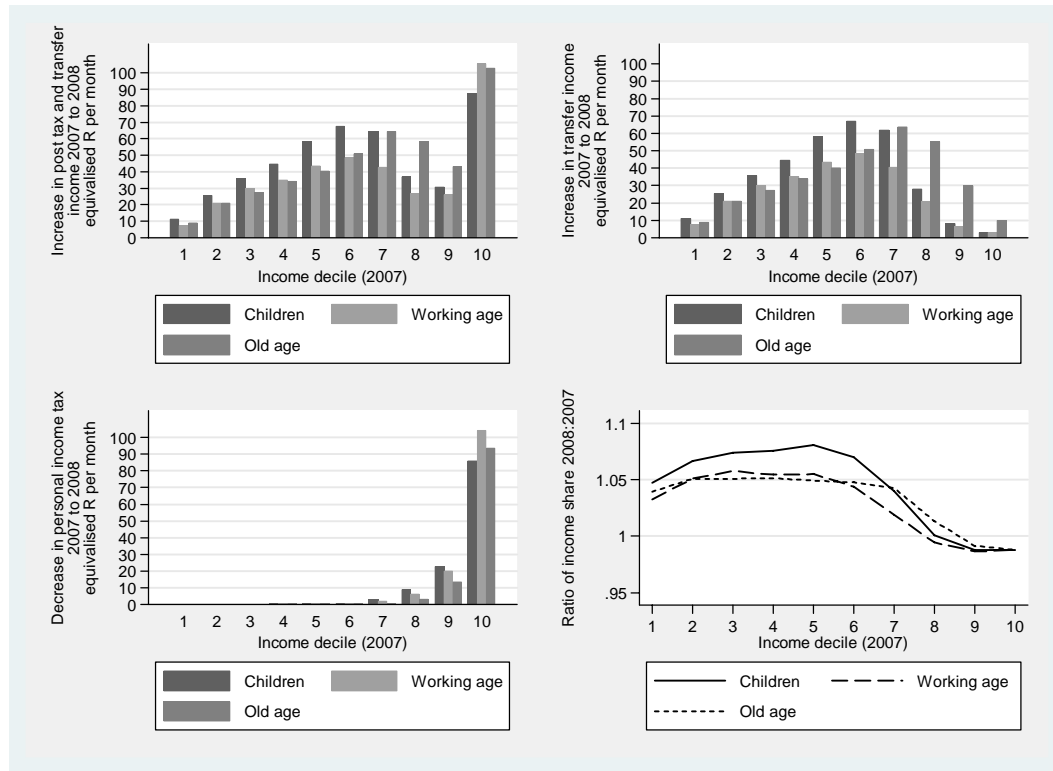


Again, there is a reduction in inequality across all age groups between 2007 and 2008 with the largest reduction in inequality occurring for children. Income tax does have a noticeable impact on income inequality; however, this is perhaps smaller than the combined impact of the Child Support Grant and the Old Age Grant.

The above analyses indicate that between 2007 and 2008 child poverty rates did fall, as did the poverty gap and the Gini coefficient. However, child poverty rates are still higher post transfers and taxes than for any other group. From these findings it is difficult to determine whether or not children have been prioritised in budgetary allocations. This is explored in more detail by analysing the change in average post tax and transfer income between 2007 and 2008 for each age group by 2007 income decile. The results are presented in Figure 7 (top left panel). Figure 7 also shows the breakdown of the change in average incomes between transfers (top right panel) and income tax (bottom left panel). For example, an

increase in household income may be due to an increase in transfer income or a decrease in income tax (or a combination of the two).

Figure 7: Impact of 2007-2008 policy reforms on average post tax and transfer income



The average income of households in every income decile increases between 2007 and 2008. For poor households (approximately deciles 1 to 6), the increase in income increases as household income in 2007 increases, thus, households that were wealthier to start with receive a higher absolute increase in income than poorer households. For households in deciles 7 to 10 the largest increases in income are for the richest 10% of households. In fact the richest 10% of households receive the largest absolute increase in income of all deciles. Considering the breakdown of the increase in income between transfers and taxes, the bottom left panel of Figure 7 shows that the increase in income in decile 10 is largely due to tax reductions.

Considering the relative increases in average household income for the different age groups, children experience the highest absolute increases in deciles 1 to 6 (this roughly represents households below the poverty line). Thus, it seems that children were prioritised amongst the poor to some extent. This is more clearly indicated in the bottom right panel of Figure 7 which shows the ratio of the income share of each group in 2008 to the income share of each group in 2007. Again, this shows that the largest increases in income share are seen for

children in deciles 1 to 6. Above the poverty line, the old age population has experienced the largest increases in income share.

To summarise the findings of the analyses presented above, it seems that poor children have benefited marginally more than other age groups in the policy reforms that took place in 2008. Despite this, however, poverty rates still remain much higher for children than for other age groups. It is also apparent that the largest absolute increases in household income have been experienced by the wealthiest 10% of households due to reductions in income tax. Whilst the marginal increase in the income of these houses is relatively small, this additional income could have made a significant difference to household incomes in the lower deciles particularly as the poorest 10% benefit least from the policy reforms. The next section considers the impact of a budget-neutral policy reform where the income tax are not revised between 2007 and 2008 and the additional revenue (which would otherwise have been 'lost' tax revenue) is used to increase the value of the Child Support Grant for the 10 million eligible recipients in 2008.

3.5 Simulating a budget-neutral reform

As children experience the highest poverty rates of all age groups, the objective of testing the impact of the policy reform described above is to determine if the welfare of children can be improved without adversely affecting other groups below the poverty line. In order to do this the hypothetical reform analysed involves keeping income tax policy consistent between 2007 and 2008 but allowing the reforms to other policies announced in the 2008 budget to take place. In this way the extra tax revenue (that would have been lost tax revenue under the 2008 reforms) can be used to increase the level of support for children by increasing the monthly amount of the Child Support Grant. It is estimated that this reform would allow the Child Support Grant to be increased by R47 per month for every child to R257 per month.

Figures 8 and 9 again illustrate the impact of progressively adding each policy on household incomes. Figure 8 shows the percentage change in poverty rates for each age group comparing the 2008 reform with the 2007 policy scenario (grey lines) and comparing the hypothetical reform with the 2007 policy scenario (black lines). For example, poverty rates for children under the hypothetical reform were around 3.5% lower than they were in 2007 after income from the Child Support Grant is added to pre tax and transfer income. The 2008 reforms only reduce poverty rates for children by around 2.5% after the Child Support Grant is added to pre tax and transfer income. Figure 9 repeats the analyses in Figure 8 for the poverty gap measure.

The hypothetical reform results in a reduction in child poverty rates post tax and transfers of over 5% as shown in Figure 8. Children experience the largest reductions in poverty rates and all groups experience a larger reduction in poverty rates than under the 2008 reforms.

The same is true considering the reduction in the average poverty gap presented in Figure 9. Again, children benefit most (the poverty gap decreases by about 10%), whereas older people actually experience the largest percentage reduction in the poverty gap in the 2008 scenario. Again, all groups do better under the hypothetical reform.

Figure 8: Percentage decrease in poverty rate – 2007 policies compared to 2008 reforms and 2007 policies compared to hypothetical reform

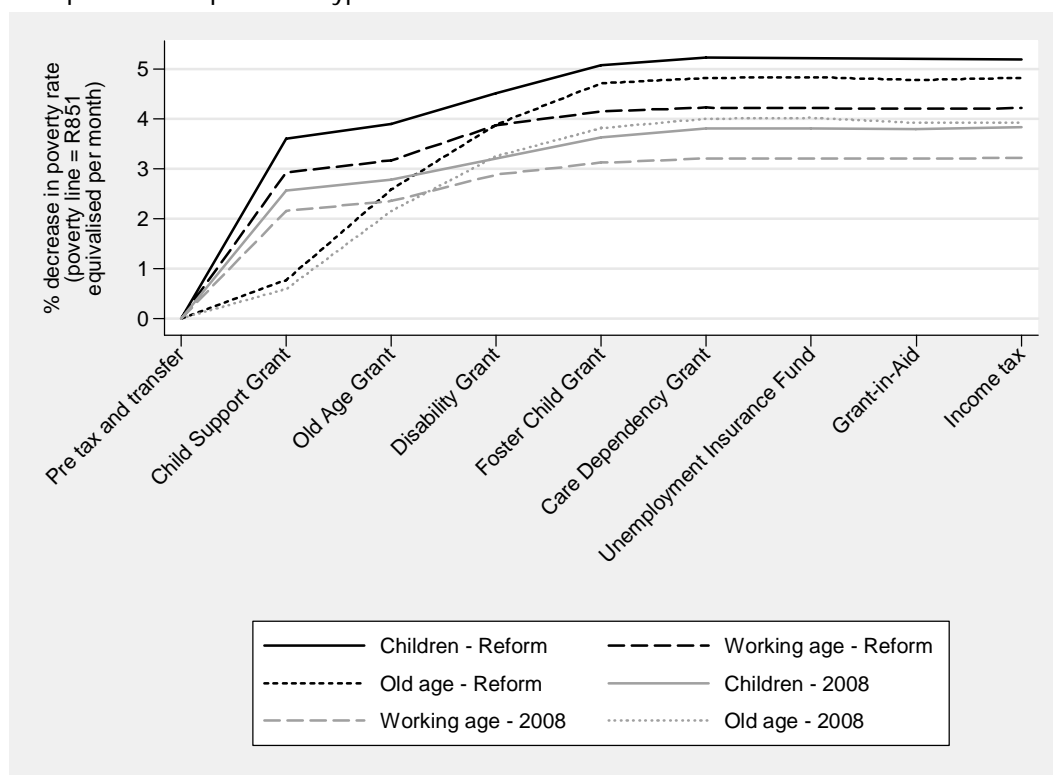
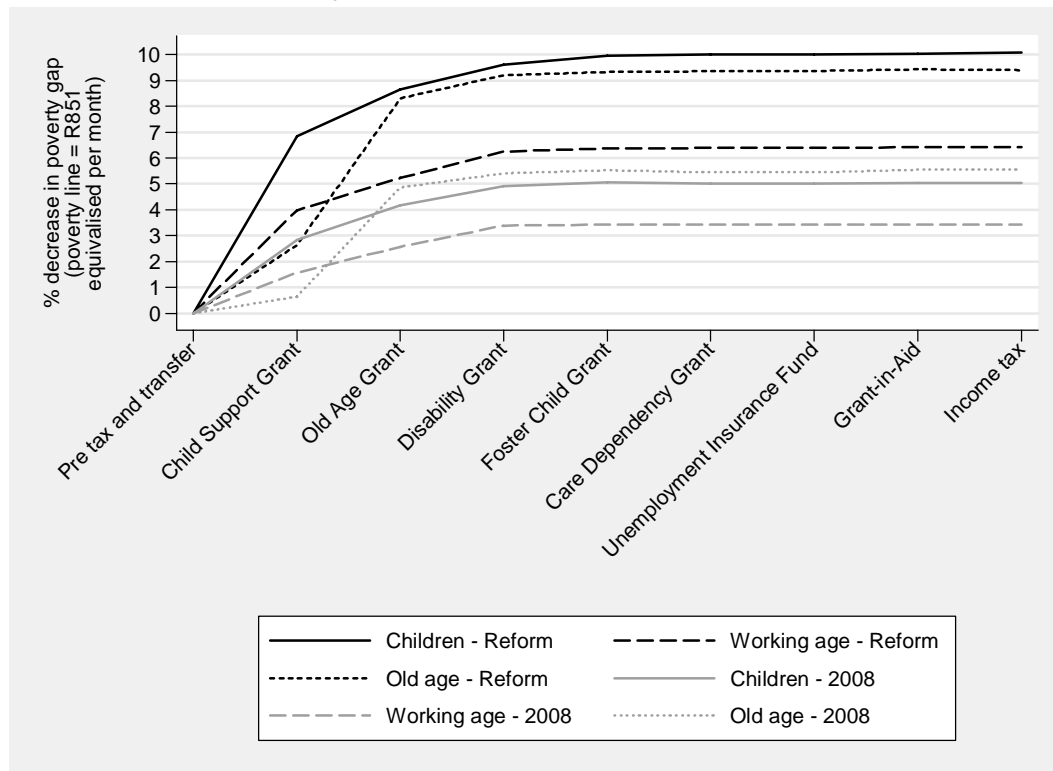


Figure 9: Percentage decrease in poverty gap – 2007 policies compared to 2008 reforms and 2007 policies compared to hypothetical reform



Finally, the analyses presented in Figure 6 are repeated for the hypothetical policy reform. Again, households in all deciles experience an increase in income (on average); however, the increases are now much smaller for households above the poverty line due to the removal of the tax reductions. The largest increase in average income and income share is experienced by children in deciles 1 to 7.

Considering the increase in income share it is apparent that the largest increases go to children in the bottom income decile with the income share ratio gradually decreasing as household income increases. This increase in income share for the poorest group in the poorest income decile represents a move towards a more equitable income distribution as is illustrated in Figure 11. Here the ratio of the 90th income percentile to the 10th income percentile is plotted against the tax and transfer policies (note that the ratio cannot be displayed for the pre tax and transfer scenario as the 10th percentile is zero). The hypothetical reform results in a more equitable income distribution than both the 2007 and 2008 policy scenarios.

Figure 10: Impact of 2007-hypothetical budget neutral policy reforms on average post tax and transfer income and transfer income

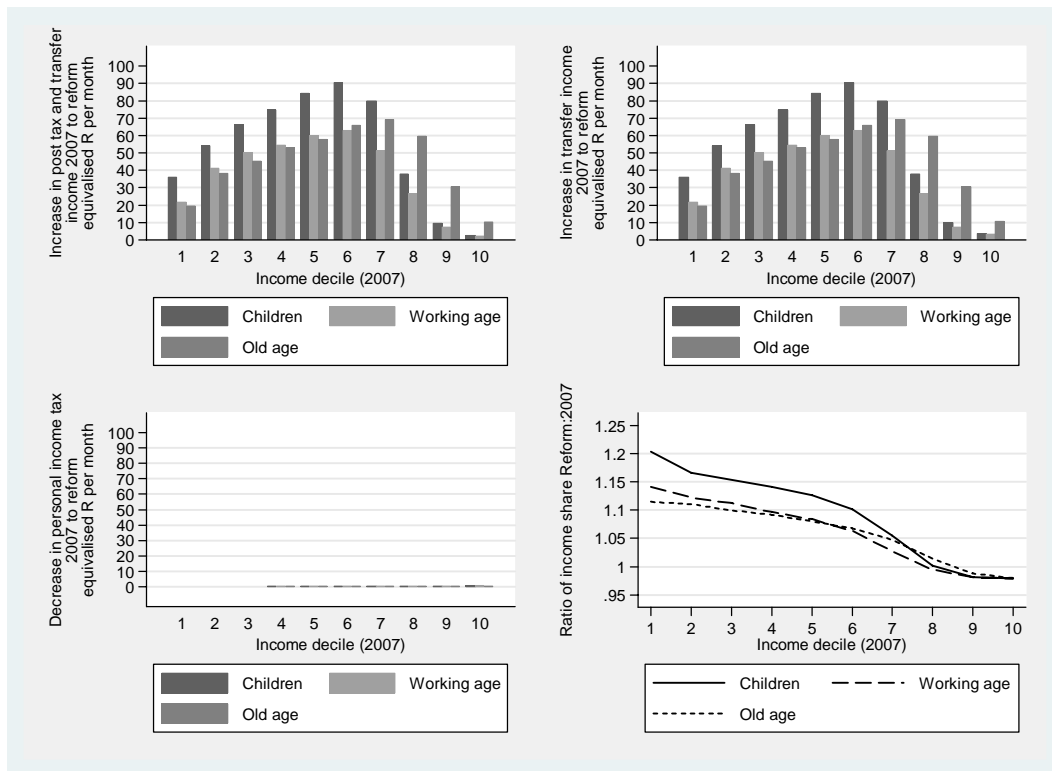
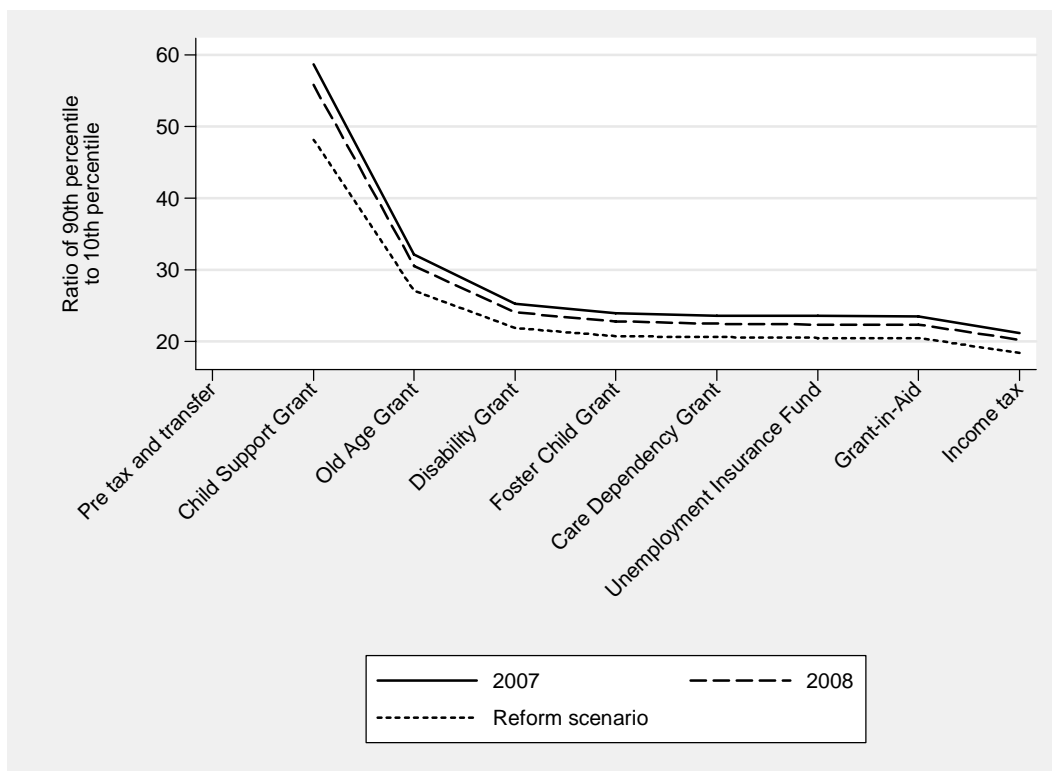


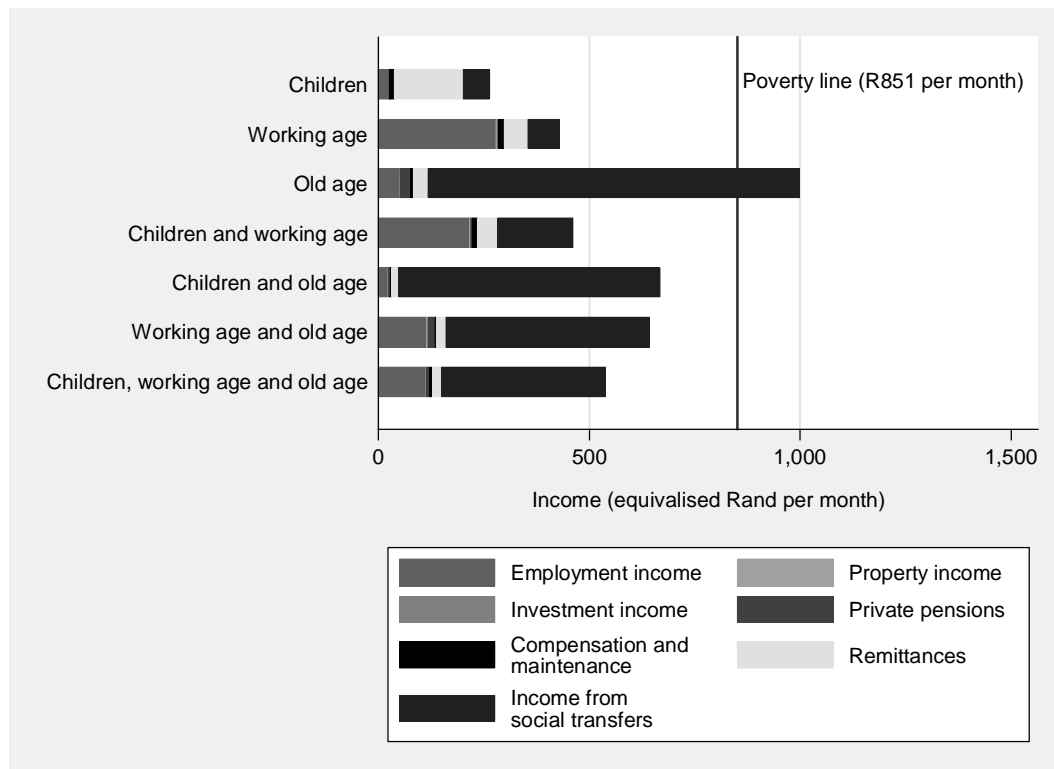
Figure 11: Ratio of 90th to 10th percentiles under each policy scenario



4. Discussion

It could be argued that children were prioritised in the reforms announced in the 2008 budget as the income share for poor children increased proportionally more than the income share of other age groups. However, other groups also benefited from the budget reforms. For the old age population there was a large increase in the value of the Old Age Grant, in addition many recipients of this grant also lived in households with children and were also able to benefit from the expansion of the Child Support Grant. The same was not true of children as only 26% of children eligible for the Child Support Grant lived with older people who were eligible for the Old Age Grant. The majority of children live with working age adults and there is no support available to the working age, despite high rates of unemployment. The result is that for many children the Child Support Grant may be the only cash transfer which is received by a poor family and as result is spread very thinly. To illustrate this Figure 12 returns to the analysis of sources of household income by household type. In contrast to Figure 2, income from social grants (following the 2008 policy rules) is included and the data are shown for 'poor' households only (i.e. households originally classified as poor by having a pre taxes and transfer income of less than R851 equivalised per month).

Figure 12: Sources of income for 'poor' households, including social transfers (2008 policies)



The addition of social transfers has a large impact on the relative wealth of each household type. Households containing only old age adults are the wealthiest, average household income for these households is above the poverty line. Children are better off living with old age adults rather than working age adults (children are worst-off in child-headed households). The fact that children and working age adults in poor households are better off living with old age adults raises concerns over whether the social grant system may have adverse effects on household formation. For example, Klasen and Woolard (2008) find evidence that unemployed adults often have no choice but to rely on the safety net provided by relatives receiving an Old Age Grant. This often results in young families remaining in households in rural areas rather than moving to areas with better employment opportunities.

Finally, it is clear that whilst children may be prioritised amongst the poor, inequality could be reduced by pursuing a strategy of smaller cuts in income taxation accompanied by a redirection of income towards children. This not only benefits children but the majority of lower income groups. The tension between growth and development is clearly visible here as the policy of cutting taxes presumably aims to promote growth. However, this must occur at the expense of those living in poverty. The hypothetical reform illustrated here may not be realistic but it helps to illustrate how government policy could, in theory, be even more pro-poor and provide additional support to children.

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