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**Revisiting the impact of direct taxes and
transfers on poverty and inequality in South
Africa**

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Abstract: This paper uses a recent household survey and the CEQ framework to revisit and extend previous research on the impact of fiscal policy on income redistribution, and poverty in South Africa. We find, in accordance with previous research, that direct taxes and cash transfers are overall progressive and reduce inequality and poverty. Our disaggregated analyses, however, reveal that medical and interest tax benefits are regressive. We also find that certain social transfers provided to some minority population groups are not particularly well targeted. Periodically reviewing the effectiveness of fiscal policy at disaggregated levels would help to further improve the effectiveness of fiscal policy.

Keywords: fiscal policy, fiscal incidence, direct taxes, social grants, inequality, poverty

JEL classification: D31, H22, H23, I38

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1 Introduction

South Africa has an infamous history of high inequality, with a strong racial dimension to that inequality (Leibbrandt et al. 2010a). Despite South Africa's being classified as an upper-middle-income country, poverty continues to persist alongside prosperity long after the transition to democratic rule. Progress towards greater income equality has proven to be elusive, despite a succession of macroeconomic plans aimed at delivering shared economic growth.

The one dimension of South African policy-making that is generally regarded as having been relatively successful is that of direct redistribution via the fiscal system. A recent study by Inchauste et al. (2015) shows that fiscal policy is overall effective in redistributing income and reducing poverty in South Africa. In fact, in comparison with other middle-income countries for which distributional studies were conducted using the same (Commitment to Equity or CEQ) methodology pioneered by Lustig (for a description, see Lustig 2017), South Africa's tax and benefits system achieved the greatest income redistribution and poverty reduction impact. However, even after considerable reductions in the Gini coefficient and poverty head count rates, inequality and poverty remain higher in South Africa than in other countries at a similar stage of development.

This paper revisits some of the findings of Inchauste et al. (2015) using a more recent household survey—the 2014/15 Living Conditions Survey (Statistics South Africa 2017)—to assess the robustness of the earlier results. We re-estimate the income distributions, including the Gini coefficient and poverty rates using the CEQ market income concepts. While Inchauste et al. (2015) reviewed the impact of the entire tax and benefits system (including both direct and indirect taxes as well as social cash transfers, indirect subsidies, and in-kind benefits), in this paper we focus on two key elements of the fiscal system, namely the personal income tax regime and the cash transfer system, and look more deeply into how these two components of the fiscal system impact on poverty and inequality.

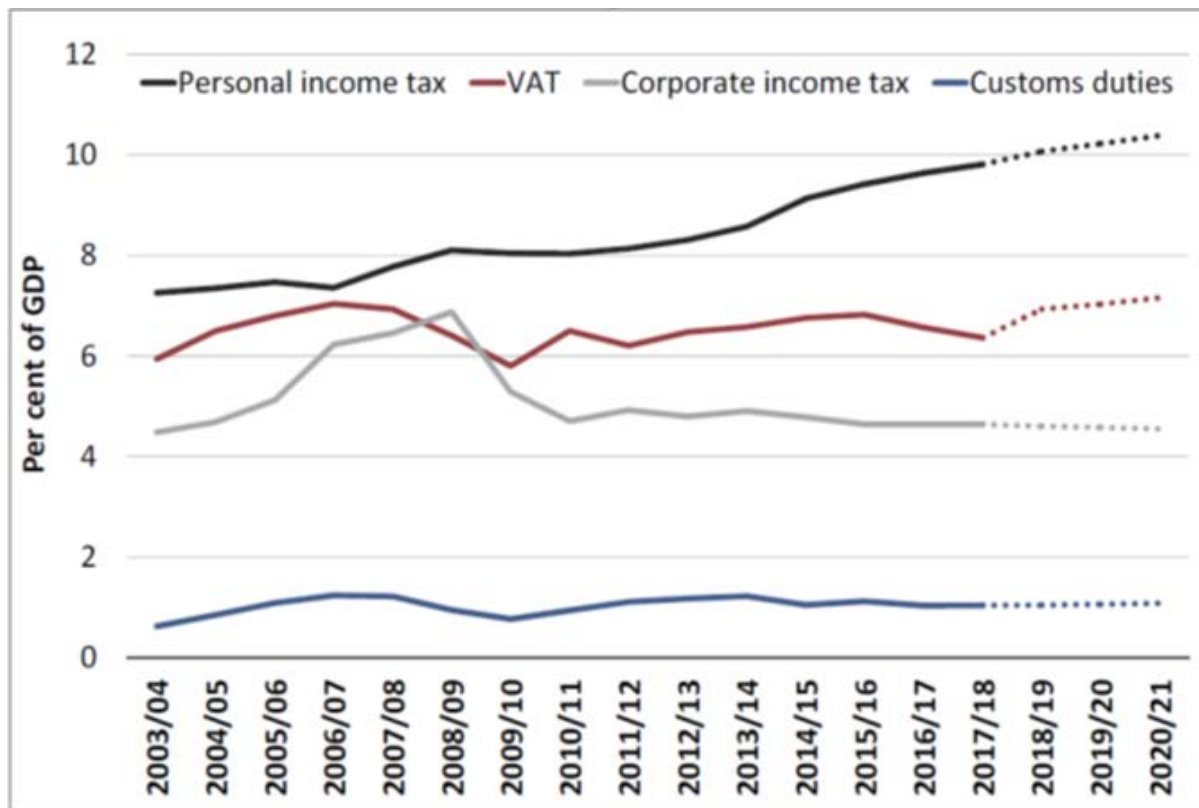
Our study then extends the earlier work in two ways. First, it estimates the distribution of selected allowances within the personal income tax regime, namely the medical tax credit and the (partial) exemption of interest income. These forms of allowances (or 'tax expenditures' as they are termed when viewed from the standpoint of the fiscal authorities) are widely used across the world; yet their fiscal and equity impacts are not always clear and their effectiveness and efficiency as a policy instrument need to be carefully evaluated. This is especially so in a context of constrained public finances such as that in South Africa. Tax expenditures might in some cases distort economic incentives and make the tax system less transparent and/or regressive from a social viewpoint. The second major contribution of this paper is that it drills down into the poverty impact of direct taxes and transfers on different groups, disaggregated by race, gender, and age.

2 Description of the personal income tax and cash transfer systems in South Africa

Personal income tax (PIT) is a tax levied on a person's taxable income (gross income less exemptions and allowable deductions). In South Africa, capital gains are also included as part of gross income. Individuals generally receive most of their income as salaries and wages; pension and retirement annuity payments; and investment income (largely comprising interest and dividends). Some individuals, such as sole proprietors and partners, may also have business income which is taxable as part of PIT. As shown in Figure 1, PIT is (increasingly) South Africa's largest

source of revenue. In the 2014/15 fiscal year (the year on which our analysis is based), it netted R353 billion (or 36 per cent of gross tax revenue).

Figure 1: Tax mix for South Africa, 2003/04–2020/21



Source: National Treasury (2018).

The South African system is admirably simple, transparent, and certain. Filing is done individually and the system does not distinguish between married and unmarried persons or provide deductions to taxpayers with children. There is, however, a small additional tax rebate for persons over the age of 65 and a further additional rebate for persons over the age of 75. All formal sector employees must be registered by their employer for PIT and the employer is responsible for calculating and withholding the PIT payable by employees. In 2014/15 the tax threshold (i.e. the taxable income below which no PIT was payable) was R70,700 (about US\$12,700 PPP¹) for individuals below the age of 65. The top marginal tax rate was 40 per cent and kicked in at R673,101 (about US\$122,000 PPP) per annum.

2.1 Other forms of direct personal taxation

Two earmarked payroll taxes exist:

- The Skills Development Levy: employers contribute 1 per cent of total payroll towards a levy used to fund training facilitated through the Sector Education and Training Authorities.

¹ PPP refers to purchasing power parity.

- The Unemployment Insurance Fund (UIF): employers and employees each contribute 1 per cent of earnings (up to a cap) towards a fund which provides income protection for up to 236 days in the event that an employee becomes unemployed.

We include the Skills Development Levy as a payroll tax in our analysis. In keeping with the CEQ methodology, we assume that the full burden of the tax is shifted onto the employee. We do not model the UIF, as we argue that it can be regarded as a form of compulsory ‘insurance’, since only contributors can claim from the Fund and the system is fully funded, i.e. no transfers are made from the general revenue pot to the Fund. Moreover, the survey that we use for the analysis (the 2015 Living Conditions Survey) does not allow the identification of UIF beneficiaries. It would be conceptually incorrect to model the contributions to the Fund but not the benefits paid out.

2.2 Tax expenditures within the personal income tax system

Despite the simplicity of the PIT system, some allowances are provided in order to promote certain behaviours or to provide specific relief to certain groups of taxpayers. These allowances are recorded by the National Treasury as ‘tax expenditures’, i.e. ‘the transfer of public resources that is achieved by reducing tax obligations with respect to a benchmark tax, rather than by a direct expenditure’ (OECD 2003). Such expenditure can be measured as a deviation from the benchmark of a ‘standard’ tax legislative framework, in which no allowances are provided. These preferential tax treatments are granted to specific individuals or categories of households and aim at achieving social and economic goals such as poverty and inequality reduction or employment promotion. In the PIT system, the major tax expenditures are for retirement contributions, medical tax credits, and interest exemptions. Overall, allowances, deductions, and credits cost the equivalent of 16 per cent of PIT revenue in 2014/15 in terms of forgone revenue (National Treasury 2018). This is similar to the average of estimates for OECD countries and much smaller than those in Latin America, where deductions are extensive (OECD 2015).

A certain level of interest income (R23,800 p.a. for persons below 65 in 2014/15) is tax-exempt in an effort to promote personal saving. As shown in Table 1, this reduced PIT revenue by just over R2 billion in the year of analysis.

Table 1: Cost of tax expenditures within the PIT system, 2014/15 fiscal year

Tax expenditure	Cost in R million
Interest exemption	2,106
Medical tax credits	18,493
Retirement fund contributions	25,915

Source: National Treasury (2017).

South Africa has recently reformed the tax treatment of medical expenses within the PIT system. Prior to the 2012/13 fiscal year, taxpayers could deduct their contributions to registered medical schemes or funds with similar provisions, subject to monthly caps that were adjusted annually. Such contributions could be for the benefit of the taxpayer, her or his spouse, and any other dependant as defined in the Medical Schemes Act of 1998. Employer contributions to employee medical schemes were added to the taxable income of the employee as a fringe benefit. Taxpayers could claim a deduction of medical scheme contributions up to the capped amounts, irrespective of whether these contributions were made by the employee or by the employer on their behalf. Taxpayers who did not belong to a medical scheme could deduct qualifying out-of-pocket medical expenses to the extent that such expenditure exceeded 7.5 per cent of taxable income. This relief was also available to medical scheme members, to the extent that the aggregate of the disallowed medical scheme contributions and out-of-pocket qualifying medical expenses exceeded 7.5 per cent of taxable income. (The tax treatment for persons aged 65 and over was different and more

generous, but for simplicity we do not discuss this further here.) In effect, this system of medical expense deductions resulted in better-off individuals receiving larger tax breaks (in absolute Rand terms) because of the progressive nature of the PIT system. This inequity was a driving force in the decision to replace this system with a system of medical tax credits. The medical tax credit is a fixed monthly amount which increases according to the number of dependants. Thus, the same tax relief is provided to all taxpayers (with the same number of dependants) that belong to a medical scheme, regardless of their tax bracket. In addition to being more equitable than the previous arrangement, this system has the advantage of being administratively simple and highly transparent. The medical tax credit is a form of tax expenditure. As shown in Table 1, in the 2014/15 tax year the cost to the fiscus amounted to more than R18 billion (National Treasury 2018). In effect, this is the contribution of the state towards the health care costs of taxpayers in the private health care system.

The largest tax expenditure within the PIT system relates to the deduction of retirement fund contributions from taxable income, up to a cap of R350,000 per annum. It is not unusual to allow retirement contributions to be made out of pre-tax income, as governments across the world wish to incentivize citizens to make adequate provision for their own retirements. Owing to data limitations, we are unable to model the impact of this particular tax expenditure but nevertheless make some comments at the end of the paper as to the expected fiscal impact of this provision.

2.3 The cash transfer system

South Africa has a very large system of cash transfers. At 3.1 per cent of GDP (or 10.2 per cent of total consolidated government expenditure) in 2014/15, spending on social assistance in South Africa is very high by international standards. In 2009, the World Bank reported that South Africa's spending was roughly twice the median spending across developing economies (Woolard and Leibbrandt 2009). This is in line with the mandate spelled out in Section 27 of the South African Constitution, which states that:

- Everyone has the right to have access to [...] (c) social security, including, if they are unable to support themselves and their dependants, appropriate social assistance; and
- The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of each of these rights.

Social grants are targeted at categories of individuals who are unlikely to be able to provide for their own needs, namely the elderly, the disabled, and children. Over the decade prior to the year of analysis, the number of social-grant beneficiaries had grown by 75 per cent from 9.4 million in 2004/05 to 16.5 million in 2014/15 (National Treasury 2015), largely due to the change in the age eligibility rules of the child support grant. By 2014/15, roughly one in three South Africans was in receipt of a cash transfer.

Table 2: Cash transfers, 2014/15 fiscal year

	Monthly value of grant (R)	Number of beneficiaries (thousands)	Annual expenditure (R millions)
Child support grant	315	11,677	43,428
State old age pension	1,350 (1,370 if over 75)	3,070	49,422
Disability grant	1,350	1,133	18,957
Foster care grant	830	478	5,851
Care dependency grant	1,350	138	2,259

Source: National Treasury (2015).

The old age pension is means-tested at a high threshold; thus, it reaches about 70 per cent of age-eligible individuals. The disability grant is paid to working-age people who are unable to work because of chronic illness or disability.

The cash transfer system includes three child grants. The child support grant (CSG) is the main poverty-oriented child grant available to all primary caregivers who pass a means test. The care dependency grant (CDG) is provided to caregivers of severely disabled children with intensive care needs. The foster child grant (FCG) is available to foster parents of children who have been found by the courts to be in need of ‘care and protection’ in terms of the Children’s Act.

3 Methodology

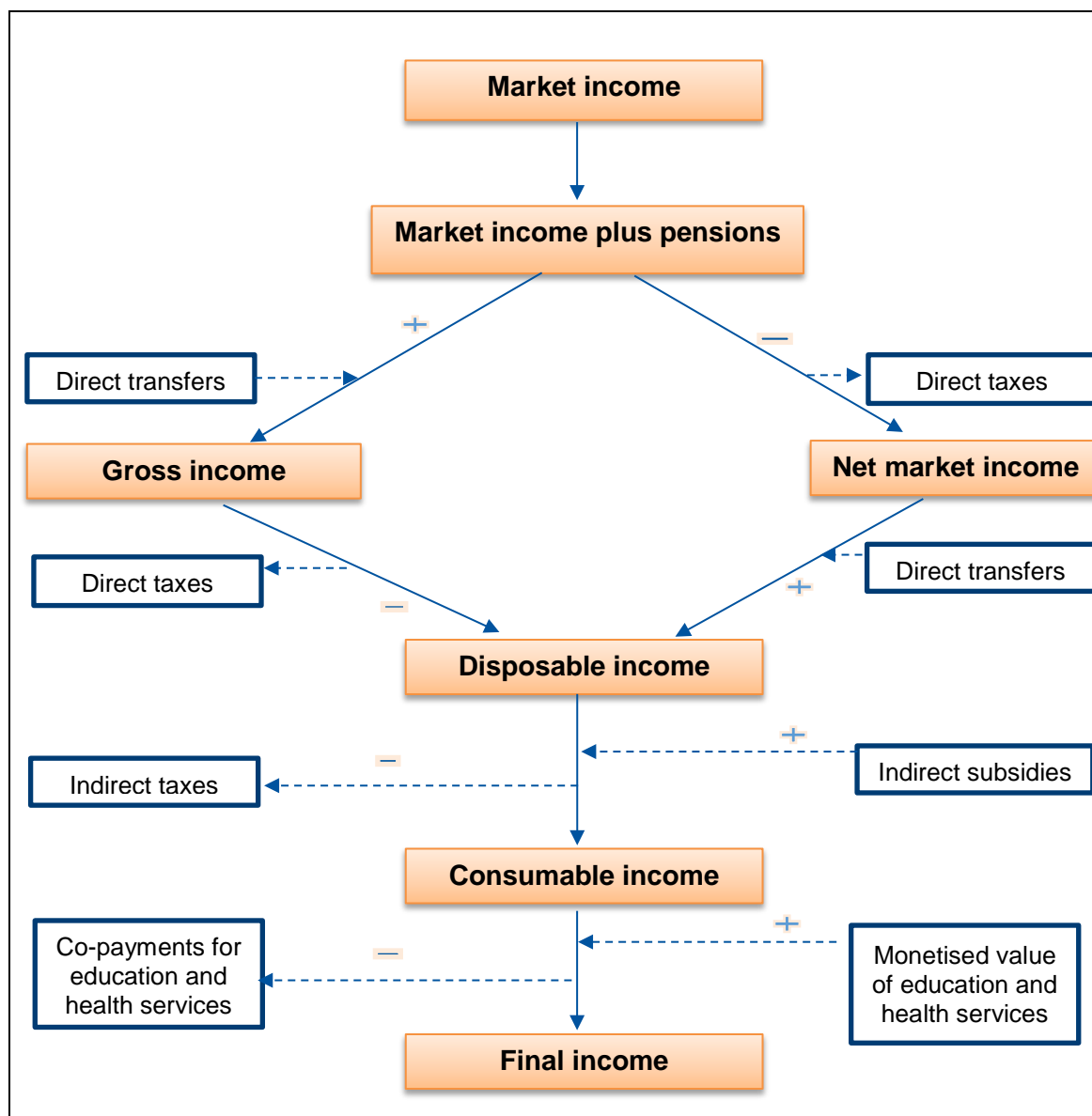
In this paper, fiscal incidence analysis is used to assess the distributional impacts of direct taxes and transfers. Essentially, fiscal incidence analysis consists of allocating taxes (personal income tax and payroll tax in this case) and public spending (direct transfers in this case) to households or individuals so that one can compare incomes before taxes and transfers with incomes after taxes and transfers. To be more precise, we use the 2014/15 South African Living Conditions Survey (LCS) (Statistics South Africa 2017) and apply the Commitment to Equity (CEQ) methodology developed by Lustig (2017) as the framework for allocating direct personal taxes and transfers to South African individuals and households. To examine the amount of redistribution accomplished and therefore the impact of the fiscal system on poverty and inequality, various income concepts are constructed according to the CEQ framework. Figure 2 summarizes the construction of these income concepts.

As indicated earlier, our study considers only the direct taxes on individuals and direct cash transfers. Therefore, consumable and final income as indicated in Figure 2 are not included in the analysis. Below are the broad definitions of the CEQ market income concepts used in this study:

- Market income comprises pre-tax wages, salaries, and income earned from capital assets (rent, interest, or dividends) and private transfers.
- Gross income is constructed by adding direct cash transfers to market income.
- Net market income subtracts direct taxes, viz. personal income tax (PIT) and the Skills Development Levy from market income.
- Disposable income is constructed by adding direct cash transfers to net market income. (This measure is closest to household consumption, on which the Gini coefficient in South Africa is usually constructed.)

We use the 2014/15 LCS (Statistics South Africa 2017) for the analysis. The 2014/15 LCS was conducted by Statistics South Africa (Stats SA) between 13 October 2014 and 25 October 2015. The 2014/15 LCS had two primary objectives, namely to provide detailed household expenditure data to inform the updating of the consumer price index (CPI) basket of goods and services, and, second, to establish poverty levels and the distribution of poverty. Information was collected from 23,380 households across the country over a period of 12 months. The survey used a combination of the diary and recall methods. Households were required to document their daily acquisitions in diaries provided by Stats SA for a period of two weeks and to answer a variety of questions from the household questionnaire administered by a Stats SA official over a four-week period.

Figure 2: CEQ income elements and fiscal policy components



Source: Lustig (2017).

4 Distributional analysis

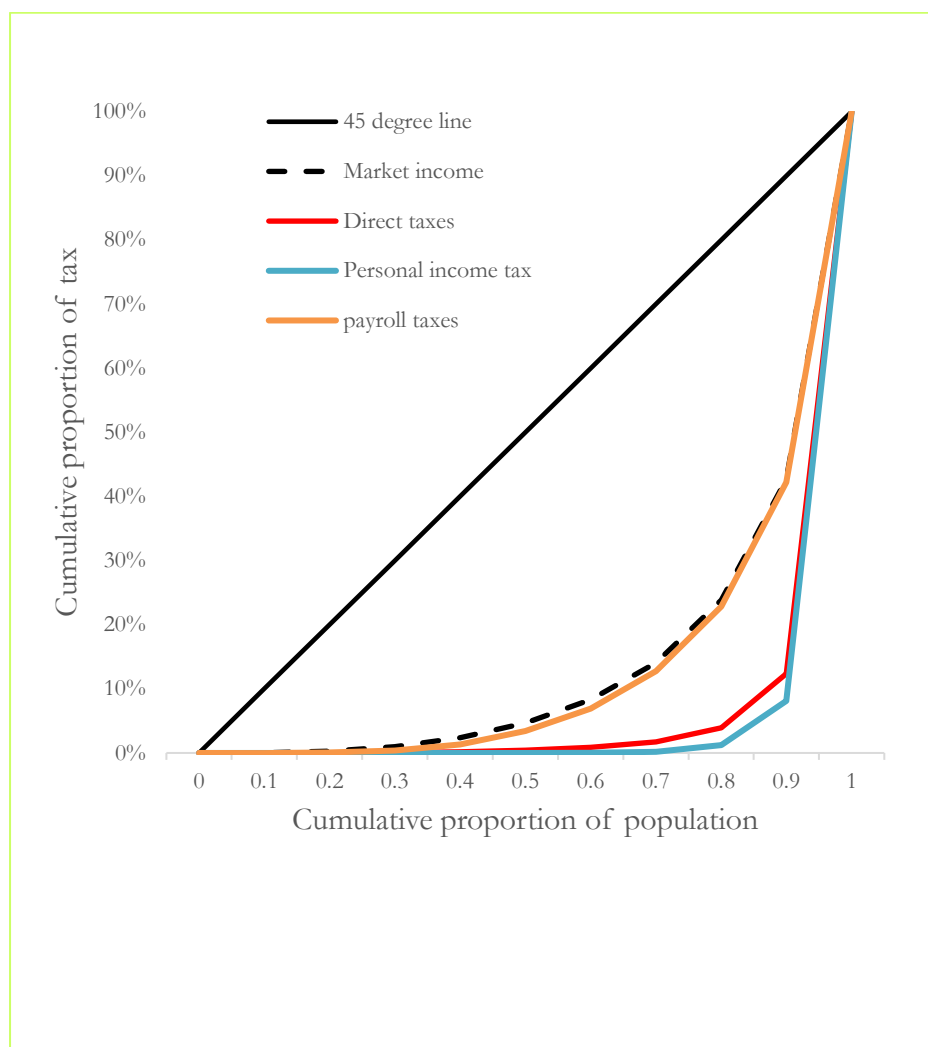
This section reviews the distributions and concentration curves of selected direct taxes and social cash transfers across South African households.

4.1 Distribution of market income, taxable income, and personal taxes by decile

Table A1 (in Appendix A) shows the distribution of selected PIT components by market income. As can be seen, most of the market income and therefore taxable incomes and personal income taxes are concentrated among the top two deciles of the market incomes distributions. More than 75 per cent of the total of market incomes accrues to the richest 20 per cent, emphasizing the stark picture of income inequality in South Africa. Correspondingly, the top two deciles also accrue 77 per cent of total taxable incomes and pay over 90 per cent of total direct taxes in South Africa. To

assess the overall progressivity of the direct taxes, we plot concentration curves for the estimated direct taxes in Figure 3.

Figure 3: Concentration curves for direct taxes



Source: Authors' estimates based on the 2014/15 LCS.

As can be seen in Figure 3, total direct taxes are overall progressive.² This is mainly driven by the highly progressive PIT in which the richest 20 per cent contribute over 98 per cent of the personal income taxes. These findings are very similar to those of Inchauste et al. (2015), who found that the top 20 per cent were estimated to contribute more than 97 per cent of PIT collections.

To gain insight into the gender disparities in market income and personal taxes, we break down the overall income distribution above by the gender of the household head. Table A2 shows wide

² A tax (transfer) whose concentration curve lies everywhere below (above) the Lorenz curve for market income is globally progressive. A transfer whose concentration curve lies everywhere above the diagonal (that is, the per capita transfer decreases with income) is globally progressive in absolute terms. An absolutely progressive transfer is frequently called 'pro-poor' (Inchauste et al. 2015).

variations in the distributions and relative contributions of male- and female-headed households to incomes and personal taxes in South Africa.

The results show that, on average, male-headed households contribute significantly more to market income, taxable incomes, and total direct taxes than female-headed households. For example, male-headed households contribute an estimated 84 per cent of top decile total market incomes and direct taxes. Comparing these numbers with the bottom decile estimates by gender, it is clear that household welfare is strongly correlated with the gender of the household head in South Africa. As indicated in Leibbrandt et al. (2010b), the relatively poor education and labour force outcomes and low business sector participation rates among female South Africans is likely to be at the core of the observed wide disparities by gender in South Africa.

Given the history of apartheid, racial distributions of income and taxes remain important in policy analysis in South Africa. In Tables A3 and A4, we present both the distributions and relative contributions of incomes and direct taxes by population. The disaggregation of incomes and taxes by race shows interesting patterns. In general, we note that the concentration of incomes and taxes varies by race group. In particular, over 97 per cent of the market income contributions among Whites come from the wealthiest 20 per cent of the White population, compared with only about 60 per cent, 70 per cent, and 85 per cent from the top two deciles in the African, Coloured, and Indian/Asian population groups, respectively. Correspondingly, the wealthiest 20 per cent contribute about 99 per cent, 90 per cent, 93 per cent, and 98 per cent of total direct taxes within the concerned population groups, respectively.

To gain more insight into the relative contributions of the various race groups to overall incomes and taxes in South Africa, we present the relative contributions by race in Table A4. Overall, we see that Africans make the largest contribution to total market incomes (49 per cent), followed by Whites (36 per cent), Coloureds (10 per cent), and Indians (5 per cent). However, in terms of contributions to total direct taxes, the White population group makes the largest overall contribution at 46 per cent, followed by Africans at 28 per cent and then the Coloured and Indian/Asian groups at 6 per cent and 5 per cent, respectively. The observed patterns could be largely explained by the fact that the White population has the highest concentration of taxable incomes in the top deciles, and is therefore able to contribute relatively more taxes to the PIT system than the other race groups.

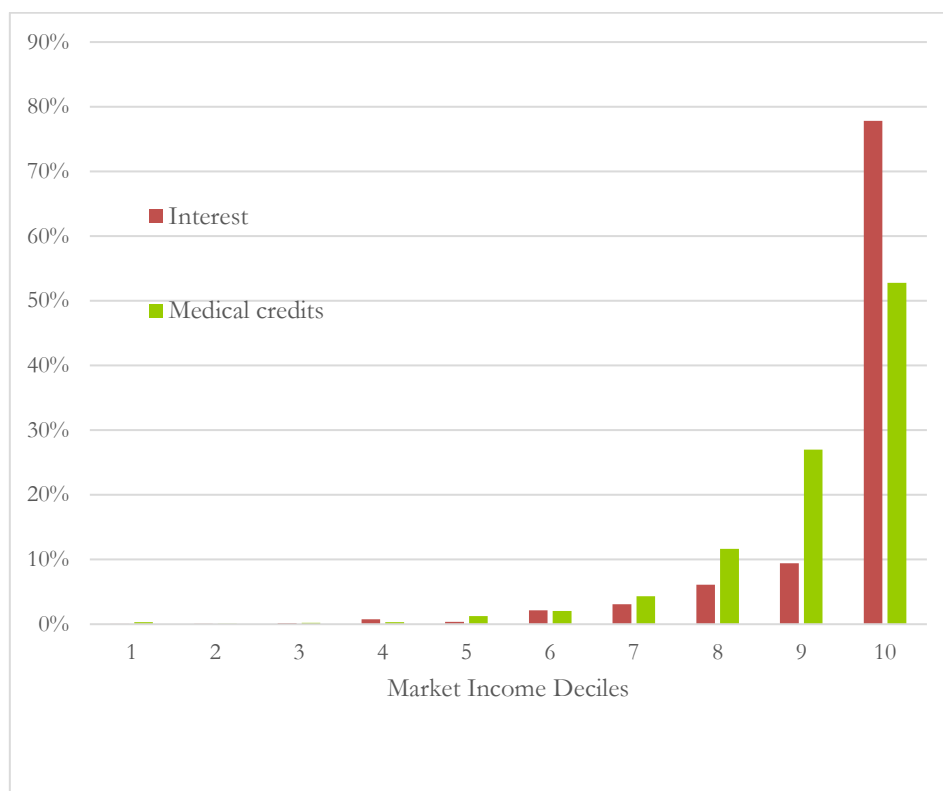
4.2 Distribution of selected fiscal benefits in South Africa

Next, we explore the distributions of selected fiscal benefits and fiscal exemptions offered under the South African PIT system. As indicated earlier, we estimate the fiscal benefits from the 2014/15 LCS household survey. In this analysis, we consider the distribution of medical credits and interest deductions. Although the distribution of such fiscal benefits is best done using actual tax records, these distributions would still provide reasonable estimates of the likely overall distributions of the above selected fiscal benefits.

As can be seen from Figure 4, the tax expenditures that we simulate are highly regressive in South Africa. Nearly all the interest deductions are received by the top three income deciles. This is, however, not surprising since capital income such as interest are typically concentrated among the wealthiest income groups. Similarly, the medical tax credit system is regressive. Over 90 per cent of the medical tax credits are concentrated among the top three income deciles, compared with less than 5 per cent going to the bottom half of the income distribution. This observation is also not surprising, given that membership of and subscription to medical schemes in South Africa are associated with higher income groups, which can afford the monthly contributions often required

to access the benefits. The majority of the poorest 50 per cent of the population access health care in free or subsidized public health facilities.

Figure 4: Distribution of selected fiscal benefits



Source: Authors' estimates based on the 2014/15 LCS.

Table A5 unpacks this further by showing the distribution of medical scheme membership by decile and race. Overall, we find that about 15 per cent of individuals are covered by medical schemes, a figure that is consistent with earlier estimates (Ajam and Woolard 2017). It is noteworthy that even in the top decile only about 70 per cent of all individuals belong to medical aid schemes, with a large racial disparity even within this top decile.

To get a better understanding of who gains from the fiscal benefits, we present detailed distributions of interest exemptions and medical tax credits by decile and by race. Table A6 shows the detailed distribution of the fiscal benefits within each population group, while Table A7 shows the distribution of shares of total benefits by race.

First, we note that the fiscal benefit distributions by race follow the same pattern as the overall concentration of fiscal benefits among the top three income deciles already noted. Interest exemptions are more highly concentrated in the top two deciles among the White and Indian populations, while somewhat less regressive among the African and Coloured groups. The distribution of medical tax credits is largely uniform across the race groups: in all cases, the top three deciles accumulate at least 85 per cent of the benefits. The picture emerging from Table A6 is clear: all fiscal benefits are highly regressive in South Africa.

From Table A7, which presents the distribution of the shares of total fiscal benefits that accrue to the different race groups, we note that, overall, Whites get the highest shares of interest benefits (more than 80 per cent of the total). Africans and Whites get the largest and second largest shares of medical tax credit benefits at 44 per cent and 39 per cent of the total medical tax credit benefits,

respectively. These benefits are, however, unequally shared across the race deciles, with the majority of the benefits typically concentrated among the top two or three income deciles.

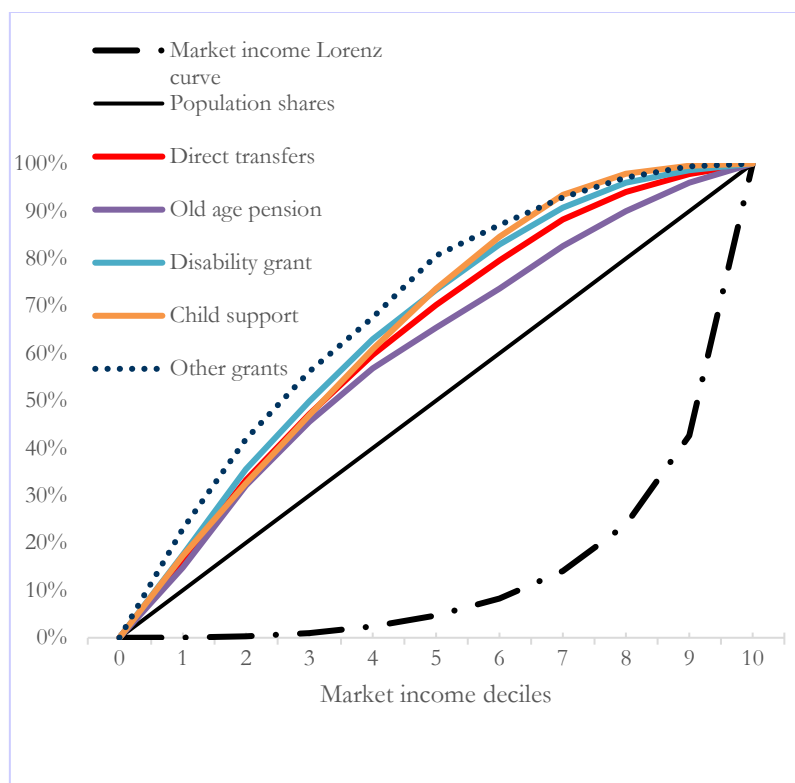
4.3 Distribution of social cash transfers

Next, we describe the distribution of social cash transfers in South Africa. We explore the distribution and targeting of the main social cash transfer programmes, namely the child support grant, old age pension, and disability grant. The distributions and concentration of the direct transfers are presented in Table A8.

Consistently with the earlier findings in Inchauste et al. (2015), we find that social cash transfers in South Africa are quite well targeted and progressive. Overall, the poorest 50 per cent of the population receive more than 70 per cent of the total direct transfer benefits. In terms of the main social cash transfer programmes, we find that the child support grant benefits an estimated 74 per cent of the poorest half of the population, while the disability grant and old age pension benefit about 73 per cent and 65 per cent, respectively. The relatively small grants (war veterans' grant, foster care grant, and other types of social assistance) also appear quite well targeted, with 81 per cent of these grants collectively accruing to the poorest 50 per cent of the population.

The progressivity of each of the three main social cash transfers in South Africa is presented in Figure 5.

Figure 5: Concentration curves for social cash grants in South Africa, by decile



Source: Authors' estimates based on the 2014/15 LCS.

As can be seen in Figure 5, all the social cash transfer programmes in South Africa are progressive. In fact, given the fact that the concentration curves for all the grants are ranked above the 45 degree line of equality, the social cash transfers are progressive in absolute terms. These results

and the rest of the distributions of the social cash transfers are consistent with the findings in Inchauste et al. (2015).

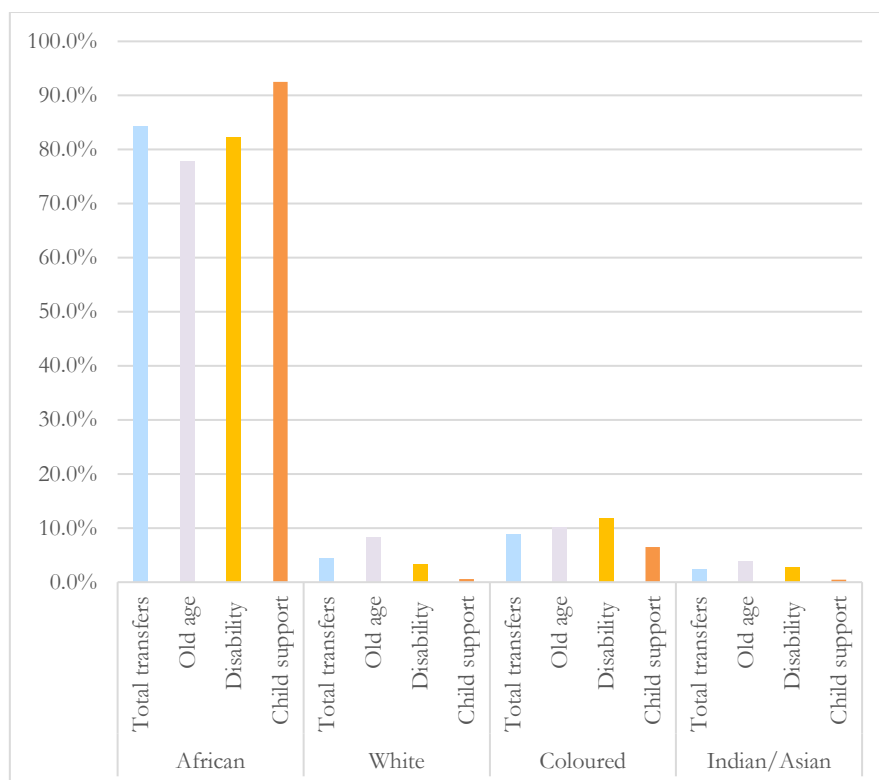
To understand who benefits from the social cash transfers, we present detailed distributions of total social grant receipts by gender of household head, by household with children and elderly people, and by geographical location of grant recipients in Table A9.

Consistently with the overall progressive distribution of the social cash transfer programmes, Table A9 shows that social grants remain progressive in desirable ways even when disaggregated by various demographic groups. For example, while the total grants are progressive regardless of household headship by gender, we find that social grants are more concentrated and better targeted in female-headed households (76 per cent receipts among the bottom five deciles) than in male-headed households (64 per cent receipts among the bottom five deciles). Furthermore, the results in Table A9 show that the social transfer system commits more resources in households where children live and in those located in informal urban and rural areas than in households without children and in those located in formal urban areas.

These results in Table A9 suggest that social cash transfers not only are well targeted on aggregate, but also flow to households that are likely to be vulnerable and therefore more in need of social assistance.

We next discuss the percentage shares of the main social transfer programmes that accrue to various racial groups in South Africa. Figure 6 summarizes the shares.

Figure 6: Shares of social grants received by population group



Source: Authors' estimates based on the 2014/15 LCS.

As can be seen, at least 84 per cent of the social cash transfer expenditures accrue to African individuals. This is as expected, given the high population proportion of Africans and the fact that

a relatively high proportion of Africans live in households below the poverty line and are therefore likely to be eligible for various social cash transfer programmes. Coloured, White, and Indian/Asian households receive about 9 per cent, 4 per cent, and 2.4 per cent of the social cash transfer budget in South Africa, respectively. These results also correlate with various socio-economic factors, such as unemployment and poverty by race groups.

In Table A10 we present detailed distributions of total social assistance receipts by race groups to assess how progressive the major social grants are by race group. We find mixed results on the progressivity of the main cash transfers by population group.

In particular, we find that the major cash transfer programmes are particularly well targeted among Africans, with at least 75 per cent of the transfer budgets under each of the main programmes going to the bottom five deciles of the African population. However, we find that all the major social cash transfers among the Whites are regressive. In particular, we find that the majority of the benefits (at least 65 per cent) under the old age pension, disability grant, and even the child support grant go to the richest five deciles of the White population. We find a similar trend among the Indian/Asian group. We also find that the old age pension among the Coloured population group is regressive, while the disability and child support grants among Coloured households are barely progressive in absolute terms.

These results suggest that while the grant system is absolutely progressive overall, there is a need to better target and improve the progressivity of social grants, particularly among the minority groups in South Africa.

5 The income redistribution and poverty effects of the personal income tax and social cash transfer systems

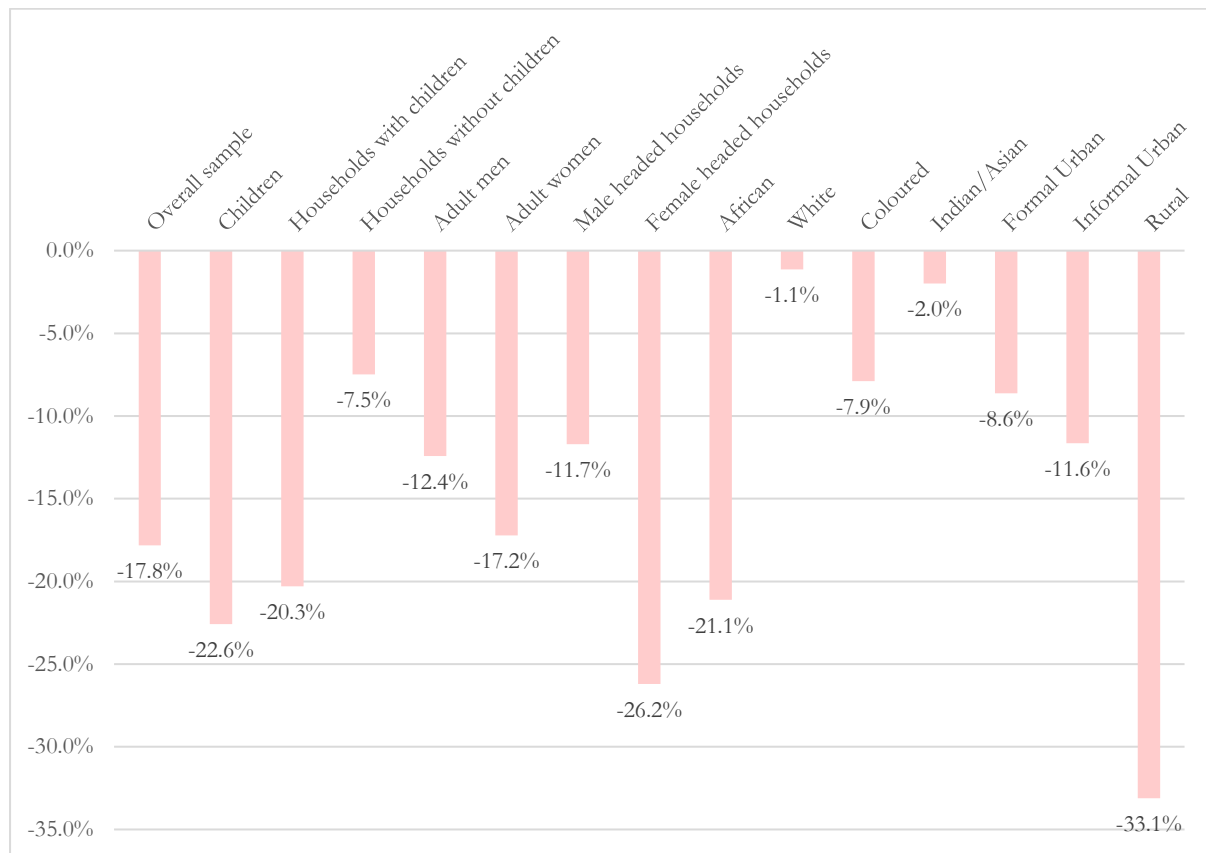
This section discusses the income redistribution and poverty reduction effects of the direct taxes and social grants discussed above. Table A11 shows the Gini coefficient and headcount poverty rates for each main CEQ income concept.

Overall, we find a significant drop in the market income Gini from 0.73 to 0.66 after taking into account the impact of the selected fiscal tools (direct taxes and social grants) analysed in this paper. Fiscal policy is therefore quite effective in redistributing income using direct taxes and cash transfers in South Africa. Furthermore, by comparing the market income Gini with the gross income (0.679) and the net market income (0.715) Gini coefficients, we can assess the separate impacts that social cash transfers and direct taxes have on income redistribution. From that comparison, we first find that cash transfers and direct taxes separately reduce inequality in South Africa. The direct transfers, however, cause a larger reduction in market income Gini, likely due to the combination of very good targeting and the high levels of per capita social transfers that beneficiary households receive in South Africa.

Table A11 also shows significant reductions in poverty across all the poverty lines used in this study. Using the US\$1.25 PPP per day poverty reference line, South Africa's social cash transfers reduce extreme poverty very significantly. As can be seen, the incidence of extreme poverty reduces by 68 per cent (from 26 per cent to 8 per cent) after accounting for social transfers. The size of the reduction in poverty is similar to that observed in Inchauste et al. (2015), where extreme poverty reduced by about two-thirds, from 34 per cent to 12 per cent, after taking into account the impact of social cash transfers.

To understand where some of the reductions in poverty are taking place, we assess the impacts of fiscal policy on poverty among selected individuals and households below. Figure 7 shows the percentage reductions in market income poverty by selected household types and among children.

Figure 7: Reductions in poverty due to fiscal policy (US\$1.25 PPP int'l poverty line)



Note: Poverty estimates are based on the US\$1.25 PPP per day poverty line. Figures B1 to B5 in Appendix B show the reductions in poverty at other poverty lines.

Source: Authors' estimates based on the 2014/15 LCS.

As can be seen from Figure 7, the greatest poverty reduction happens in households and among individuals that may be particularly vulnerable to poverty in South Africa. For example, we note that social cash transfers significantly improve welfare among children and in households with children compared with those without children. Female-headed households, which are more likely to suffer high unemployment and have lower incomes, have a greater improvement in welfare than male-headed households. Furthermore, we find that social cash transfers significantly improve welfare among African households compared with other population groups. Finally, we find that rural and informal urban households have larger increases in welfare than households located in formal urban areas. The above patterns in poverty reduction reveal an interesting insight: that social grants are well targeted to the most vulnerable and at-risk individuals and households in South Africa and help in poverty reduction.

6 Conclusion

This paper has assessed the distribution of direct taxes and social cash transfers in South Africa using the recently released 2014/15 Living Conditions Survey (Statistics South Africa 2017) and

the CEQ framework. The study also evaluated the impact of the above fiscal tools on income distribution and poverty and compared the overall effects with an earlier study by Inchauste et al. (2015).

Consistently with that study, we find that direct taxes are highly progressive, with the direct tax burden almost entirely borne by the top three deciles. Collectively, one-third of individuals live in households that contribute 96 per cent of direct personal taxes in South Africa. A more detailed look into the sources of direct personal taxes shows that nearly 44 per cent and 21 per cent of the direct taxes come from the top 10 per cent of the White and African household income groups, respectively. The richest Coloured and Indian/Asian deciles contribute about 5 per cent each to direct taxes in South Africa.

On the expenditure side of the Budget, we find that nearly 50 per cent of the entire social cash transfer budget goes to the three poorest deciles in South Africa. The cash transfer programmes as a whole are absolutely progressive, with grants well targeted and benefiting the most vulnerable households. A detailed breakdown of who actually benefits among the vulnerable groups paints a favourable picture: female-headed households, households with children, and households located in rural and informal urban areas receive significantly more than their counterparts. The analysis by demographic group, however, shows that while the major social grants are progressive among Africans, the distribution of the transfers is not particularly well targeted among Whites, Coloureds, and Indian/Asians.

The net impact of the South African tax and transfer system is to significantly reduce income inequality and poverty. In particular, inequality as measured by the Gini is reduced by 0.06 points, while poverty (when measured in terms of the very low international poverty line of US\$1.25 PPP per person per day) is reduced by two-thirds once we take account of the effects of the direct taxes and direct social transfers.

In this paper we have shown that tax breaks for medical aid membership, interest income, and retirement fund contributions reduce the overall progressivity of the personal income tax system. While concurring with the OECD (2015) that tax revenues can be increased by ‘selectively reducing allowances, deductions, credits and exemptions’, we recognize the possible unintended consequences of disincentivizing saving for retirement and providing for private health insurance. Rather, we propose that the National Treasury regularly review the effectiveness of these measures in meeting its policy goals and continue with its policy of adjusting the nominal values of the allowances/credits by less than inflation in order to gradually erode those values.

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Appendix A

Table A1: Distribution of income and personal taxes by decile (%)

Decile	Market income distribution and concentration shares					Cumulative distribution and cumulative concentration shares				
	Market income	Taxable income	Direct taxes	Personal income tax	Payroll taxes	Market income	Taxable income	Direct taxes	Personal income tax	Payroll taxes
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.3	0.1	0.0	0.0	0.1	0.3	0.1	0.0	0.0	0.1
3	0.7	0.3	0.0	0.0	0.3	1.0	0.4	0.0	0.0	0.4
4	1.4	1.0	0.1	0.0	1.0	2.4	1.3	0.2	0.0	1.3
5	2.3	2.1	0.3	0.0	2.1	4.7	3.4	0.4	0.0	3.4
6	3.6	3.5	0.5	0.0	3.5	8.3	6.9	0.9	0.0	6.9
7	5.8	5.8	0.9	0.1	5.8	14.1	12.8	1.7	0.2	12.8
8	9.8	10.1	2.2	1.1	10.1	23.8	22.9	3.9	1.2	22.9
9	18.8	19.3	8.4	6.9	19.3	42.7	42.2	12.4	8.1	42.2
10	57.3	57.8	87.6	91.9	57.8	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on the 2014/15 LCS dataset.

Table A2: Distribution of income and direct taxes by gender (%)

Decile	Male-headed households					Female-headed households				
	Market income	Taxable income	Direct taxes	Personal income tax	Payroll taxes	Market income	Taxable income	Direct taxes	Personal income tax	Payroll taxes
1	37.7	12.7	12.7	0.0	12.7	62.3	87.3	87.3	0.0	87.3
2	40.1	48.9	48.9	0.0	48.9	59.9	51.1	51.1	0.0	51.1
3	42.0	45.2	45.2	0.0	45.2	58.0	54.8	54.8	0.0	54.8
4	50.2	55.4	55.4	0.0	55.4	49.8	44.6	44.6	0.0	44.6
5	56.3	59.2	59.2	0.0	59.2	43.7	40.8	40.8	0.0	40.8
6	60.6	63.6	63.8	66.0	63.6	39.4	36.4	36.2	34.0	36.4
7	64.4	66.1	61.0	31.4	66.1	35.6	33.9	39.0	68.6	33.9
8	71.7	73.2	69.5	64.4	73.2	28.3	26.8	30.5	35.6	26.8
9	74.9	75.3	70.2	68.2	75.3	25.1	24.7	29.8	31.8	24.7
10	83.4	84.2	84.0	84.0	84.2	16.6	15.8	16.0	16.0	15.8

Note: Gender is that of the household head.

Source: Authors' estimates based on the 2014/15 LCS.

Table A3: Distribution of income and direct taxes by population group (%)

Decile	African				White				Coloured				Indian			
	Market income	Taxable income	Total direct taxes	PIT	Market income	Taxable income	Total direct taxes	PIT	Market income	Taxable income	Total direct taxes	PIT	Market income	Taxable income	Total direct taxes	PIT
1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	1.3	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
4	2.6	1.8	0.3	0.0	0.0	0.0	0.0	0.0	0.9	0.7	0.1	0.0	0.4	0.2	0.0	0.0
5	4.2	3.7	0.7	0.0	0.0	0.0	0.0	0.0	2.3	2.1	0.4	0.0	0.3	0.2	0.0	0.0
6	6.1	5.7	1.1	0.1	0.2	0.2	0.0	0.0	4.9	5.0	1.0	0.0	2.1	1.6	0.2	0.0
7	9.4	9.5	2.1	0.4	0.4	0.3	0.0	0.0	8.5	8.5	1.8	0.2	3.3	2.4	0.3	0.0
8	14.9	15.4	5.3	3.0	2.2	2.2	0.3	0.1	12.1	12.0	3.1	1.0	8.6	8.7	1.4	0.4
9	22.9	23.8	16.3	14.8	11.4	11.0	3.1	2.3	24.5	25.0	12.7	9.2	20.6	21.2	8.2	7.3
10	38.0	39.4	74.0	81.7	85.7	86.2	96.6	97.5	46.4	46.6	80.9	89.6	64.8	65.7	89.8	92.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on the 2014/15 LCS.

Table A4: Distribution of the relative contributions to income and direct taxes by population group (%)

Deciles	African				White				Coloured				Indian			
	Market income	Taxable income	Total direct taxes	PIT	Market income	Taxable income	Total direct taxes	PIT	Market income	Taxable income	Total direct taxes	PIT	Market income	Taxable income	Total direct taxes	PIT
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	1.3	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5	2.0	1.8	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
6	3.0	2.9	0.3	0.0	0.1	0.1	0.0	0.0	0.5	0.5	0.1	0.0	0.1	0.1	0.0	0.0
7	4.6	4.8	0.6	0.1	0.1	0.1	0.0	0.0	0.8	0.8	0.1	0.0	0.2	0.1	0.0	0.0
8	7.4	7.7	1.5	0.9	0.8	0.8	0.1	0.1	1.2	1.2	0.2	0.1	0.4	0.5	0.1	0.0
9	11.3	11.9	4.6	4.5	4.1	3.8	1.4	1.3	2.4	2.5	0.7	0.6	1.1	1.1	0.4	0.4
10	18.7	19.7	20.9	25.0	30.8	30.0	44.2	56.0	4.5	4.6	4.5	5.4	3.4	3.5	4.4	5.4
Total	49.2	50.0	28.2	30.6	35.9	34.8	45.8	57.4	9.7	9.8	5.6	6.1	5.2	5.3	4.9	5.9

Source: Authors' estimates based on the 2014/15 LCS.

Table A5: Medical aid membership distribution by race and decile (%)

Decile	Total coverage	African	White	Coloured	Indian/Asian
1	1	0	-	0	-
2	1	1	-	1	0
3	1	1	-	0	0
4	2	1	3	3	3
5	3	2	14	4	0
6	4	3	35	5	14
7	8	8	23	9	12
8	20	17	39	25	17
9	42	36	59	40	49
10	71	60	80	70	74
Total	15	9	66	20	35

Note: Blank cells indicate very small sample sizes that make estimates unreliable.

Source: Authors' estimates based on the 2014/15 LCS dataset.

Table A6: Distribution of selected fiscal benefits by race (%)

Decile	African			White			Coloured			Indian		
	Taxable income	Interest	Medical credits	Taxable income	Interest	Medical credits	Taxable income	Interest	Medical credits	Taxable income	Interest	Medical credits
1	0	0	0	0	0	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0	0	0	0	0
4	2	5	0	0	0	0	1	0	1	0	0	0
5	4	2	2	0	0	0	2	0	2	0	0	0
6	6	9	3	0	1	1	5	0	3	2	0	4
7	10	18	8	0	0	1	8	1	5	2	0	3
8	15	12	17	2	5	5	12	3	17	9	0	9
9	24	17	32	11	7	21	25	30	27	21	94	30
10	39	35	38	86	87	72	47	65	44	66	6	54
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Authors' estimates based on the 2014/15 LCS.

Table A7: Relative shares of selected fiscal benefits by race (%)

Decile	African			White			Coloured			Indian		
	Taxable income	Interest	Medical credits	Taxable income	Interest	Medical credits	Taxable income	Interest	Medical credits	Taxable income	Interest	Medical credits
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	1	1	0	0	0	0	0	0	0	0	0	0
5	2	0	1	0	0	0	0	0	0	0	0	0
6	3	2	1	0	1	0	0	0	0	0	0	0
7	5	3	3	0	0	0	1	0	1	0	0	0
8	8	2	7	1	4	2	1	0	2	0	0	1
9	12	3	14	4	5	8	2	1	3	1	0	2
10	20	6	17	30	70	28	5	2	5	4	0	3
Total	50	16	44	35	81	39	10	2	11	5	0	6

Source: Authors' estimates based on the 2014/15 LCS.

Table A8: The distribution and concentration of the direct transfers, by decile (%)

Decile	Distribution of cash transfers and concentration shares					Cumulative distribution of cash transfers and cumulative concentration shares				
	Direct transfers	Old age pension	Disability grant	Child support grant	Other grants	Direct transfers	Old age pension	Disability grant	Child support grant	Other grants
1	16.5	14.8	17.5	17.3	23.0	16.5	14.8	17.5	17.3	23.0
2	16.7	17.3	18.0	15.2	18.9	33.2	32.1	35.5	32.6	41.9
3	13.9	13.4	14.3	14.4	14.2	47.2	45.5	49.9	46.9	56.1
4	12.5	11.3	13.1	13.9	11.4	59.7	56.8	62.9	60.8	67.6
5	10.6	8.6	10.4	12.8	13.0	70.2	65.4	73.4	73.6	80.6
6	9.4	8.3	9.6	10.9	6.5	79.6	73.6	82.9	84.6	87.1
7	8.6	9.0	7.8	8.9	5.8	88.2	82.6	90.7	93.4	92.8
8	5.9	7.4	5.2	4.4	4.2	94.0	90.0	96.0	97.9	97.1
9	3.8	6.0	2.7	1.7	2.4	97.8	96.0	98.6	99.6	99.4
10	2.2	4.0	1.4	0.4	0.6	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimates based on the 2014/15 LCS dataset.

Table A9: Distribution of social cash transfers by gender of household head, presence of child household members, and household location (%)

Decile	Male-headed	Female-headed	With children	Without children	Formal urban	Informal urban	Rural
1	14	19	18	12	9	14	24
2	14	19	18	12	9	14	24
3	12	16	15	11	11	14	16
4	12	13	13	10	12	14	12
5	11	10	12	6	12	15	9
6	11	8	9	10	12	11	6
7	10	7	8	12	13	11	4
8	7	5	5	10	9	5	3
9	5	3	2	9	7	2	1
10	3	1	1	7	4	0	0
Total	100	100	100	100	100	100	100

Source: Authors' estimates based on the 2014/15 LCS.

Table A10: Distribution of the main social cash transfers by race (%)

Decile	African				White				Coloured				Indian/Asian			
	Total transfers	Old age	Disability	Child support	Total transfers	Old age	Disability	Child support	Total transfers	Old age	Disability	Child support	Total transfers	Old age	Disability	Child support
1	18	17	18	18	13	11	28	0	9	9	12	9	6	3	13	6
2	19	21	21	16	1	1	0	0	7	7	7	7	0	0	1	0
3	15	16	15	15	1	1	3	2	9	7	13	9	3	1	6	6
4	13	13	14	14	3	3	0	14	11	10	13	10	8	6	12	11
5	11	9	11	12	1	0	2	11	15	12	13	19	4	3	5	8
6	9	7	9	10	5	5	5	9	16	14	15	20	17	17	13	20
7	7	7	6	8	13	13	20	3	15	15	18	16	24	27	18	19
8	5	6	4	4	16	15	21	15	9	12	5	6	18	16	21	30
9	2	3	2	1	24	27	9	14	6	8	4	4	13	15	10	1
10	1	1	1	0	22	23	12	32	4	7	0	0	8	11	0	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Authors' estimates based on the 2014/15 LCS.

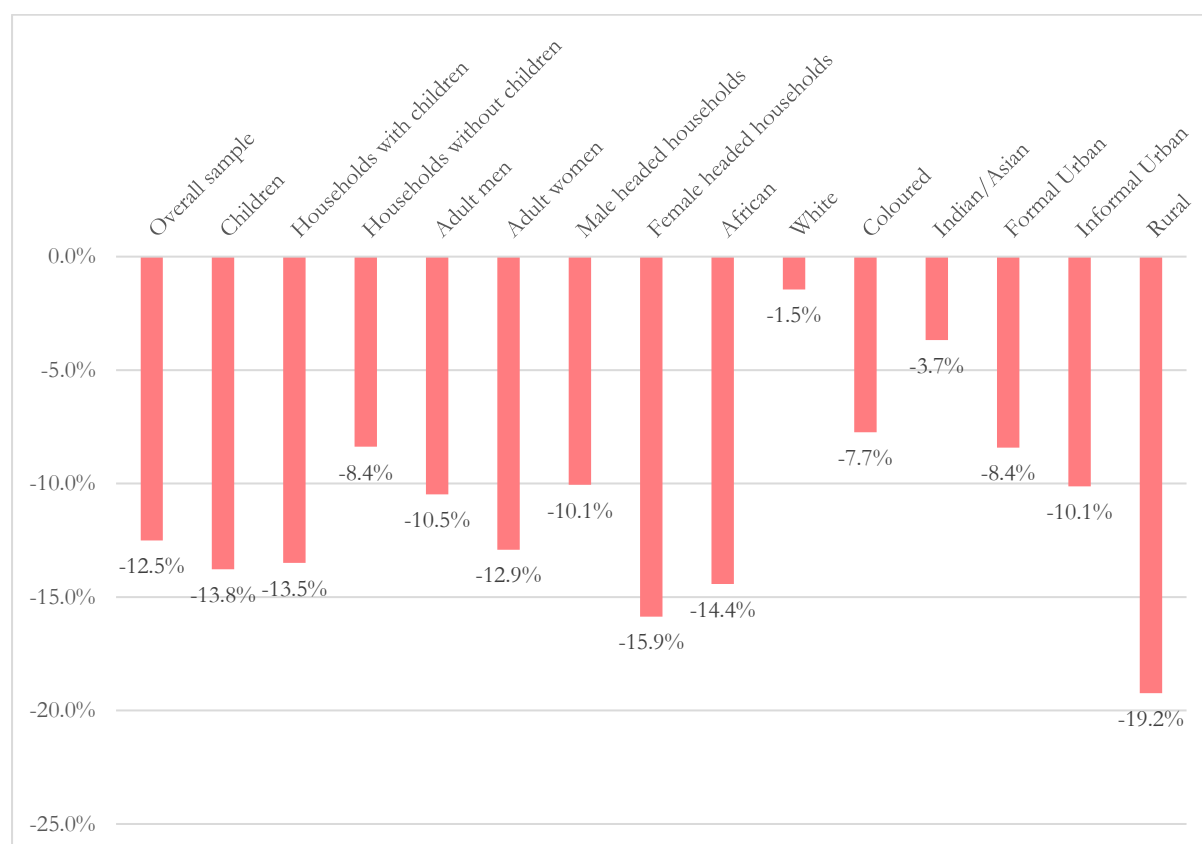
Table A11: Poverty and inequality at each income concept

	Market Income (1)	Gross Income (2)	Net market income (3)	Disposable income (4)
		<i>(2)=(1) + cash transfers</i>	<i>(3) = (1)- direct taxes</i>	<i>(4)=(3) - cash transfers</i>
Inequality Indicators				
Gini coefficient	0.727	0.679	0.715	0.664
Theil	1.048	0.921	0.988	0.859
90/10	242.7	32.4	232.0	31.2
Headcount poverty indicators				
National food poverty line	35.3%	21.7%	35.4%	21.7%
National lower bound poverty line	42.5%	33.1%	42.7%	33.2%
National upper bound poverty line	51.6%	46.0%	51.8%	46.2%
US\$1.25 PPP per day	26.1%	8.3%	26.2%	8.3%
US\$2.50 PPP per day	36.6%	24.0%	36.7%	24.1%
US\$4.00 PPP per day	46.1%	38.1%	46.2%	38.2%

Source: Authors' estimates based on the 2014/15 LCS.

Appendix B

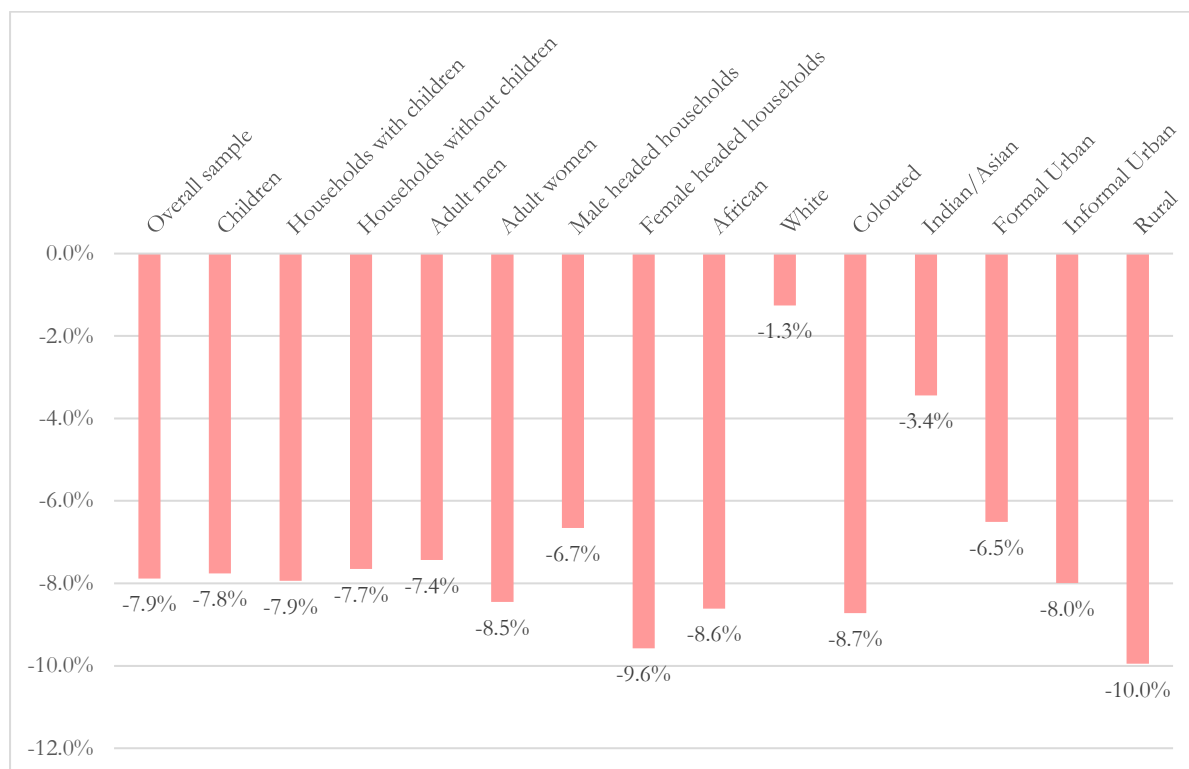
Figure B1: Reductions in poverty due to fiscal policy (US\$2.50 PPP int'l poverty line)



Note: Poverty estimates are based on the US\$2.50 PPP per day poverty line.

Source: Authors' estimates based on the 2014/15 LCS.

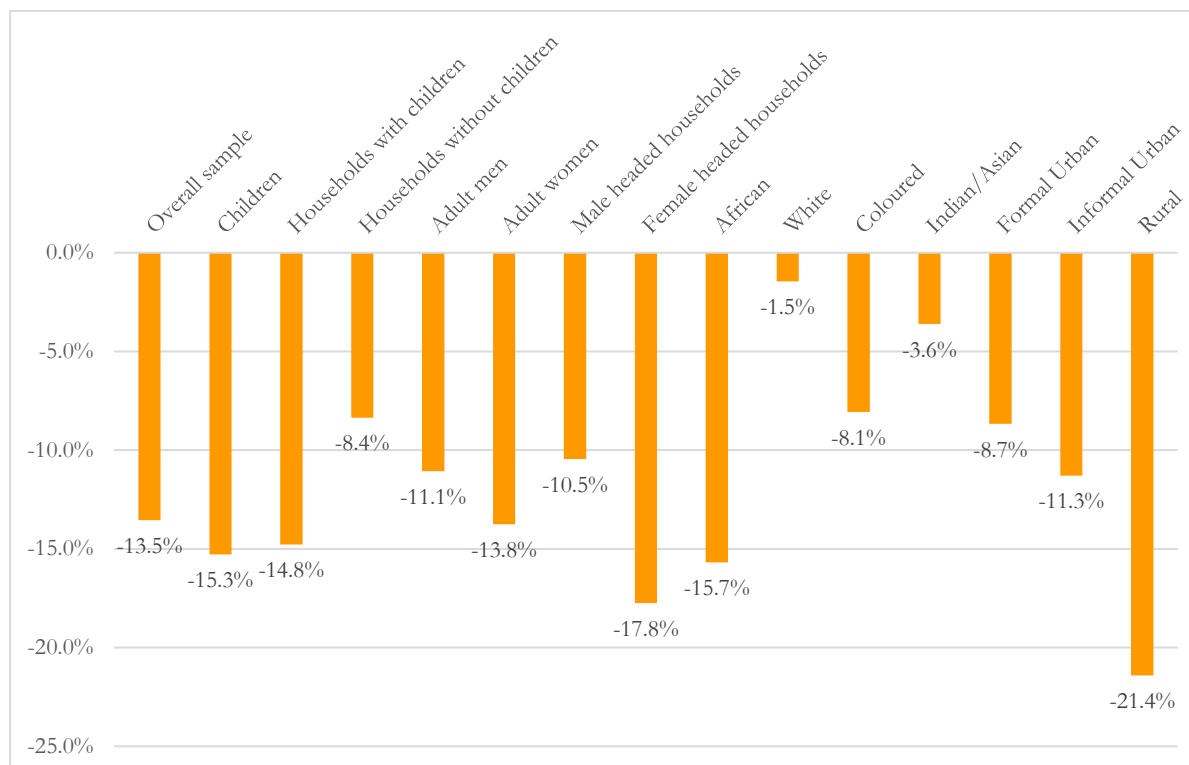
Figure B2: Reductions in poverty due to fiscal policy (US\$4.00 PPP int'l poverty line)



Note: Poverty estimates are based on the US\$4.00 PPP per day poverty line.

Source: Authors' estimates based on the 2014/15 LCS.

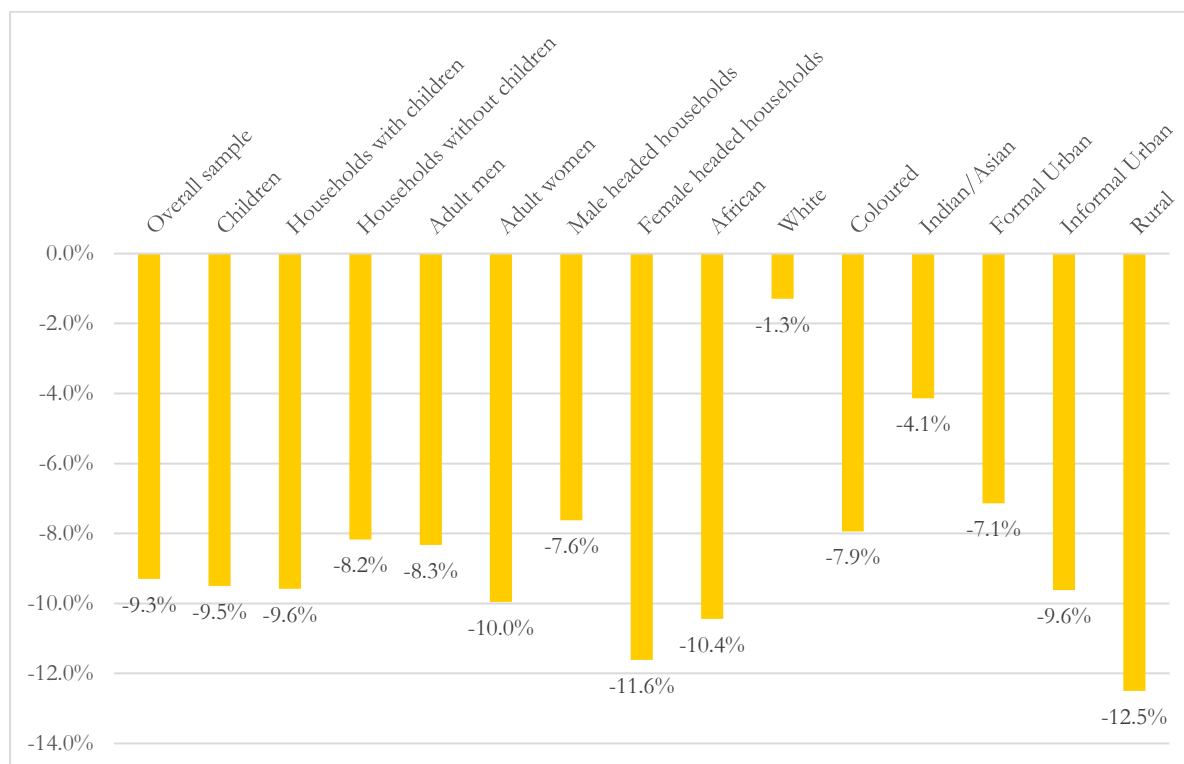
Figure B3: Reductions in poverty due to fiscal policy (National Food Poverty Line)



Note: Poverty estimates are based on the R441 per capita per month food poverty line.

Source: Authors' estimates based on the 2014/15 LCS.

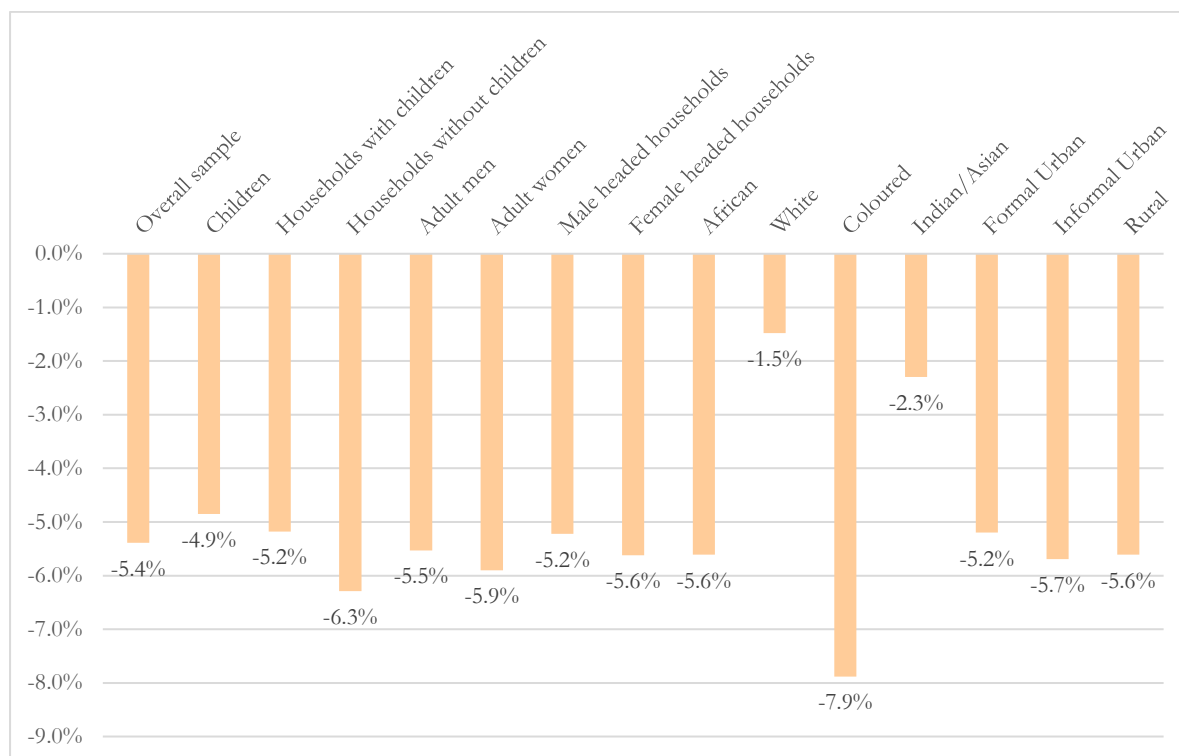
Figure B4: Reductions in poverty due to fiscal policy (National Lower Bound Poverty Line)



Note: Poverty estimates are based on the R647 per capita per month lower bound poverty line.

Source: Authors' estimates based on the 2014/15 LCS.

Figure B5: Reductions in poverty due to fiscal policy (National Upper Bound Poverty Line)



Note: Poverty estimates are based on the R992 per capita per month upper bound poverty line.

Source: Authors' estimates based on the 2014/15 LCS.