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Taking stock of South African income inequality

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Abstract: We synthesize the findings from several recent papers on South Africa's very high income inequality. These papers use new datasets—including income tax data—and new empirical methods to investigate the drivers of household income and individual earnings inequality in South Africa. Increased returns to experience and an increased rate of return to tertiary qualifications are key drivers of a widening earnings distribution. Tax data merged with survey data show that those at the top of the earnings and income distributions have done well in both absolute and relative terms, thus increasing inequality. Direct taxes and social grants are progressive, indirect taxes are less progressive, and tax exemptions for health insurance and pension fund contributions are regressive. A significant proportion of the current middle class are vulnerable to falling into poverty. Overall, South Africa has not made progress in reducing its extreme inequality over the last decade.

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1   Introduction

South Africa is widely recognized as one of the most unequal countries in the world. This has been the case since the advent of the post-apartheid era. From that time, this inequality was seen as a clear indicator of a society with a long history of explicitly privileging a small minority of its population and explicitly disadvantaging the vast majority in every aspect of its socioeconomic development.

The contemporary inequality literature is unambiguous about the fact that such extremely high levels of inequality are detrimental to a country's development path and stifle a country's potential. Even though a lot of this literature is recent, in 1994 there was a very intuitive sense of the social and economic sub-optimalities of the embedded spatial inequalities and many inequalities of opportunities that South Africa' history bequeathed to its new democracy. It is hardly surprising, then, that clear evidence of substantial progress in transitioning to a much more equal society has served as the key metric of progress on building a new, inclusive South Africa. Given this, the post-apartheid period has seen substantial policy attention being devoted to addressing this situation and a substantial literature has developed to measure and track progress on inequality reduction.[1]

Against the context of a South African economy that was mostly in a slow but steady growth phase from the mid-1990s until the late 2000s, a number of proactive policies were put in place. As reviewed by Leibbrandt et al. (2010), cash grants were rolled out for millions of pensioners and children; housing, water, and electrification policies saw rapid improvements in access to these assets; and education policies led to levels of educational attainment increasing markedly among younger cohorts.

All these policies are important prongs in any anti-inequality programme. Despite this, there was little or no progress in reducing income inequality. The evolution of the labour market is key to understanding this lack of success. During the growth phase, the number of net new jobs also increased significantly, but labour force participation rates increased faster than the rate at which new jobs were created. Thus, the unemployment rate increased from 14 per cent in 1993 to 23 per cent in 2008 using the narrow definition of unemployment.[2] At the same time, the skills composition of labour demand changed in such a way that unskilled workers saw a net decline in jobs. While unskilled workers were more likely to become unemployed, the returns to a tertiary qualification increased, which resulted in an even wider earnings distribution among those who were employed.

These dynamics had a direct bearing on increasing inequality and led to a situation in which extensive policy efforts did not translate into the equivalent results. Levy et al. (2014) point out that 'relative to other middle-income countries, South Africa has an unusually small fraction of the population that gains directly from sustained economic growth'.

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[1] See Leibbrandt et al. (2016) for a detailed summary of the research work, and Inchauste et al. (2015) for a detailed review of fiscal policy.

[2] This statistic masks the full extent of the unemployment problem, as discouraged workers are excluded from the official unemployment rate. Including discouraged workers in the definition of unemployment raises the 2008 statistic to about 32 per cent.

Table 1 shows that annual growth has slowed significantly since the global financial crisis in 2007–08. The decline in the growth rate limits the freedom for further possible expansion of progressive social spending. Coupled with the previously high levels of fiscal debt and a large fiscal deficit, these macro indicators suggest at most limited room for further expansion of existing fiscal policies to bring about greater redistribution. In order to significantly reduce poverty, unemployment, and inequality, the National Development Plan (National Planning Commission n.d.) planned for an average annual growth rate of 5.4 per cent until 2030. It is clear from Table 1 that recent growth rates have fallen short of this ambitious plan.

Table 1: Real annual growth rates in South Africa since 1990

Year	Growth rate (%)	Year	Growth rate (%)
1995–99	2.59	2011	3.28
2000–04	3.61	2012	2.21
2005–07	5.41	2013	2.49
2008–10	1.56	2014	1.85

Source: Hundenborn et al. (2018b: table 1).

Thus, rather than making progress, the past decade has been a time of economic hardship for many South Africans. The unemployment rate increased to nearly 28 per cent in 2018, up from 22 per cent in 2007. Unemployment has affected young people disproportionately: just over half of all young people are unemployed. This is a much more unfavourable environment in which to have to ramp up a strategy to overcome inequality. Indeed, this most recent decade has seen the introduction of no additional substantial interventions and even some loss of focus and progress on the matrix of policies that were put in place in the 1990s.

This is the socioeconomic context within which the papers were produced for the South African case study within the Giants project.[3] We have sought to make two major contributions through our papers produced for this project. First, we contribute to the descriptive literature on contemporary South African inequality by using new data in best-practice ways. Second, in our analysis we try to push forward from description to understanding the drivers of income and earnings inequality. This is more analytically challenging, but it is these drivers that are the key bridge into policy.[4] This paper synthesizes findings from these papers on South African income inequality as well as other relevant literature on South Africa that has been produced recently.

We start by profiling changes in household income inequality over the post-apartheid period up to the present. Static and dynamic decomposition methods show that there have been a number of changes to labour demand and supply, but that these labour market dynamics continue to dominate and drive South Africa's income inequality. This would have had an even more pernicious effect had it not been for the equalizing effects of the roll-out of our social grants, although the impact of these grants has plateaued over the last decade.

By merging tax data with income and earnings data from household surveys we are able to add analysis of the upper tail of the income distribution. Analysis of this augmented income distribution makes it quite clear that, since the 2008 recession, people at the top end of the income

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[3] There are four core papers, Hundenborn et al. (2018a, 2018b); Maboshe and Woolard (2018); Finn and Leibbrandt (2018).

[4] Many of these exercises are similar to those undertaken in other country studies, thus allowing for comparability of within-country inequality dynamics. See the project's page on the UNU-WIDER website: www.wider.unu.edu/project/inequality-giants.

distribution have experienced much higher growth rates in both real labour market earnings and real household incomes compared to those in the middle or bottom of the income distribution.

This implies a worsening of South African inequality prior to taxes and transfers. We add further detail on the drivers of this market income distribution by modelling changes in earnings inequality. The key drivers of a widening earnings distribution are seen to be increasing returns to experience, combined with an increased rate of return to tertiary qualifications.

Moving to policy, the redistributive impact of the contemporary fiscal system is described through a fiscal incidence study that updates earlier studies of a similar nature and then probes new areas. This work confirms that the substantial system of social grants is well targeted and highly progressive. On the tax side, direct personal income taxes are seen to be highly progressive. However, our research shows that the allowance of certain tax benefits (exemptions) for health insurance and pension fund contributions is clearly regressive in terms of their impact on inequality.

The aggregate conclusion from this systematic stock-take confirms that South Africa has not made progress over the last decade in the fight against its inequality. We probe this further, drawing on research that uses nationally representative panel data to explore social mobility over the last decade.

In concluding, we reflect on further research and potential policy options that are worth considering to undergird more successful strategies to overcome South Africa's inequality.

2   The drivers of post-apartheid income inequality

As a useful framing of how inequality has changed over the post-apartheid period, Hundenborn et al. (2018a) use nationally representative household surveys from 1993, 2008, and 2014 to describe levels of inequality and analyse changes in inequality. The 2008 and 2014 situations are derived from National Income Dynamics Study (NIDS) data, and 1993 is described using data from the Project for Statistics on Living Standards and Development, collected at the dawn of the democracy. Both datasets collect detailed information on different income sources for both households and individuals.

Table 2 draws on these datasets to show that households potentially have multiple sources of income. In South Africa the most prominent sources of household income are labour market income, government grants, remittances, and investment income. Of these, the single largest component (on average) by far is labour market income, followed by government grants. Comparable data for income from subsistence agriculture and rental of property are not available and these sources are omitted from this comparison and all analysis in this paper.[5]

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[5] From periods in which we have decent data for these income sources, it seems that neither contribute substantial sources of household income. That said, it is important to note that, by rental income, we mean income from properties that have been let out for cash. The effects of imputed rental income, i.e. the implicit income derived from living in one's own property, may well be substantial. This income source is also excluded as its measurement cannot be made comparable over time.

Table 2: Income components in per capita terms (real 2014 prices, rand)

Variable	1993	2008	2014
Total household (HH) income			
Mean of HH income	1,328.17	2,062.68	2,398.57
Gini of HH income	0.68	0.69	0.66
Labour income			
Mean of labour income	1,078.18	1,659.86	1,971.98
Share in total HH income (%)	83.6	74.5	73.0
Proportion of HHs receiving labour income (%)	60.5	64.4	72.6
Gini of labour income	0.73	0.76	0.73
Income from government grants			
Mean of government grants	86.17	161.31	187.34
Share in total HH income (%)	3.4	15.6	16.4
Proportion of HHs receiving government grants (%)	23.5	56.3	68.0
Gini of government grants	0.92	0.78	0.76
Income from remittances			
Mean of remittance income	50.56	86.69	93.94
Share in total HH income (%)	4.6	3.6	6.1
Proportion of HHs receiving remittances (%)	22.2	13.9	38.3
Gini of remittances	0.91	0.97	0.91
Investment income			
Mean of investment income	113.28	154.81	145.31
Share in total HH income (%)	8.3%	6.3	4.5
Proportion of HHs receiving Investment income (%)	3.5	5.6	23.3
Gini of investment income	0.99	0.97	0.98
N unweighted	39,180	28,225	37,965
N weighted	39,020,805	49,295,750	54,941,051

Source: Hundenborn et al. (2018a: table 1).

Labour market income is earned as salaries or from self-employment of household members. It accounts for the largest proportion of household income, and the proportion of households who earn some income in the labour market has increased since 1993, from 60.5 per cent of income to 73 per cent. Measured in 2014 real rands per capita, average labour market income in households has increased over this interval from R1,078 to R1,972.

Government grants include the child support and old age grant most notably, but also include a sickness and disability grant, a veterans grant, and a social relief of distress grant. The proportion of households receiving grants has increased from 23.5 per cent in 1993 to 68 per cent in 2014, suggesting a substantial increase in access to grants since the end of apartheid. Moreover, grant income has increased as a proportion of total income, from 3.4 per cent in 1993 to 16.4 per cent in 2014.

Investment income is a source of income for an increasing proportion of households over the period, up from 3.5 per cent of households in 1993 to 23 per cent of households in 2014. Although the average income from this source has increased since 1993, it has declined as a share of overall income. This implies that the returns to other sources of income have grown more rapidly.

The proportion of households who receive remittances has grown from 22 per cent to 38 per cent, although there was a decline in the proportion of households that receive remittances to 14 per cent in 2008. Overall remittances account for a very small share of household income. Nonetheless, the share of household income accounted for by remittances increased from 4.6 per cent to 6.1 per cent by 2014.

Household income is also affected by changes in who resides within the household. Table 3 profiles these changes. While the number of people of working age per household has decreased, the share of working age people per household has increased. This implies that households have become smaller, and that working age persons account for a larger proportion of the household. There has not been any significant change in the number of employed people per household, although the decrease in household size results in an increase in the share of those employed per household.

Table 3: Household composition from 1993 to 2014

Variable	1993	2008	2014
Household size	4.38	3.53	3.21
Number of adults in HH	2.81	2.70	2.59
Number of employed in HH	1.08	0.96	1.02
Share of adults in HH	0.73	0.88	0.95
Share of employed in HH	0.37	0.38	0.46

Source: Hundenborn et al. (2018a: table 2).

Coupled with the changes in income, where the average amount of all sources increased over the period, the changes in household composition result in even greater increases in mean household income per capita. On average, as shown in Table 2, mean household income per capita has grown from R1,328 to R2,399. Inequality decreased slightly between 1993 and 2014, although it remained remarkably high. Income inequality increased from 1993 to 2008, with corresponding Gini coefficients of 0.68 and 0.69. The coefficient then dropped to 0.66 by 2014.

There is a long tradition in South Africa of using static income source decomposition techniques to extend these income profiles in order look at the drivers of inequality.[6] This paper replicates this static analysis for 1993, 2008, and 2014, and affirms the standard results of this literature. From the static decompositions, we estimate that between 1993 and 2014, labour market income is highly correlated with overall inequality and accounts for 84–90 per cent of the overall Gini coefficient.[7] Labour market income was by far the most important determinant of household income inequality.

This replication work was not our primary focus in this paper. Rather, we went on to apply some newly developed dynamic decomposition techniques that allow us to add an understanding of how the various *changes* in income sources explain the *changes* in inequality.[8] These results are reported in Table 4. Given that income per capita is being used as the measure of well-being, these dynamic techniques can separate out the effects of demographic changes—driving the denominator—from the income changes—driving the numerator. While these demographic changes are not always highly influential in and of themselves, separating them from the contributions of the income sources decreases the contributions of these income sources substantially.

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[6] See review in Leibbrandt et al. (2012).

[7] This table is not included in this paper. The estimates are taken from table 3 of Hundenborn et al. (2018a).

[8] This methodology was obtained from Azevedo et al. (2013), and essentially involves piece-wise and cumulative micro-simulations of the effects of observed changes in the various sub-categories of income on the aggregate Gini coefficient.

Table 4: Dynamic decompositions including household composition and re-rankings: 1993 to 2008

Variable	1993 to 2008		2008 to 2014	
	Gini change	Percentage change	Gini change	Percentage change
Share of adults in HH	0.002	0.3	0.006	0.9
Share of employed in HH	−0.025	−3.7	0.007	1.0
One over employed	0.02	2.9	−0.003	−0.4
One over adults	0.007	1.0	0.004	0.6
Labour income				
Ranked by total HH income	0.045	6.6	−0.046	−6.7
Ranked by labour income	0.05	7.3	−0.046	−6.7
Government grants				
Ranked by total HH income	−0.041	−6.0	−0.006	−0.9
Ranked by government grants	−0.044	−6.5	−0.008	−1.2
Remittances				
Ranked by total HH income	0.005	0.7	−0.004	−0.6
Ranked by remittances	0.003	0.4	−0.006	−0.9
Investment				
Ranked by total HH income	−0.016	−2.3	−0.011	−.6
Ranked by investment	−0.02	−2.9	−0.002	−0.3

Source: Hundenborn et al. (2018a: tables 6 and 7)

We turn now to the findings from the dynamic decompositions. The decompositions from 1993 to 2008 and from 2008 to 2014 are presented in Table 4. In the 1993–2008 period there is a very small total change in the Gini, from 0.68 to 0.69. In the 2008–14 period there is a sharper reduction in the Gini, from 0.69 to 0.655.

Despite the fact that the Gini barely changes in the first period, the dynamic decomposition shows that, on their own, labour market changes would have increased the Gini by inequality very strongly, by 6.6 per cent and even 7.3 per cent if allowance is made for the fact that improvements went to those higher up the distribution of labour incomes. After 2008, the dis-equalizing effect of labour market income decreased. This does not mean that they became equalizing. Rather, the reduced impact of wages has a large role (almost half of one Gini point) to play in explaining the reduction in the Gini from 0.69 to 0.66.

Although government grants are a relatively small proportion of overall household income, they have played an important role in reducing inequality. Since 1993, the government has improved how they target grants and extended who is eligible for grants. These improvements in grant access were able to almost exactly offset the inequality-increasing effects of labour market income that took place between 1993 and 2008. This equalizing effect was even larger when allowance is made for the fact that the correlation of grant income with households in the bottom half of the income distribution improved between 1993 and 2008. From 2008 to 2014, grants continued to contribute to the overall decline in inequality, although their impact on further change was much smaller. Again, it is important to state that this does not mean that grants are not a crucial equalizing income source. Rather, it means that they did not become much more equalizing after 2008.

The effects of changes in remittance and investment income sources on inequality are found to be relatively small. Investment income contributed to inequality reductions and this effect was larger from 1993 to 2008 than it was from 2008 to 2014. Although remittances are found to have the potential to reduce inequality because, in South Africa, they are an income source flowing to the bottom half of the distribution, they have a very small overall effect on changes in inequality. Between 1993 and 2008, remittance income actually increased inequality, while from 2008 to 2014

remittance income reduced inequality. This accords largely with the decrease in the share of households with remittance senders over the first period and the reversal of this over the second. The average effect of the full period from 1993 to 2014 was negligible as the positive and negative effects cancelled one another.

Household composition changes also affected overall inequality. The increase in the number of adults in a household increased inequality by a small amount over the full period, while changes in the proportion of employed adults in a household was inequality-reducing from 1993 to 2008 and inequality-increasing from 2008 to 2014.

Nonetheless, the overall changes in inequality are largely driven by changes in the different income sources rather than by the demographic changes. Government grants have been shown to have been very important for dampening the increasing inequality between 1993 and 2008, and have continued to play a role in reducing inequality over the last decade. This recent role has been smaller, corresponding to the fact that the massive roll-out of the child support grant took place in the 2000s and stabilized after that. Both the strong inequality-reducing role of social grants and the plateauing of this role are strongly affirmed in the paper by Maboshe and Woolard (2018), which we discuss later. This suggests that in addressing the intolerably high levels of inequality which remain after grants have been paid, the government will need to investigate policy alternatives beyond these existing cash transfers. As the most prominent contributor to the overall Gini coefficient, the labour market has to be a core focus of policies aiming to reduce inequality. We undertook detailed analysis of these labour market dynamics in this project and discuss this later in the paper.

Before we shift the focus to the labour market and the distribution of earnings, we augment the discussion of household income inequality by summarizing and discussing new work that addresses the top end of the household income distribution. This is an important gap to fill in the discussion of income sources and total household income derived as the aggregation of these sources. All of our analysis of these income sources has been based on survey data. Any frailties or omissions in these data are effectively embedded in the income source decompositions. There has been increasing recognition in recent years that the income sources that are particularly important to those at the top end of the income distribution—investment income being a very good example—are likely to be understated by household survey data. We have carefully explored this possibility.

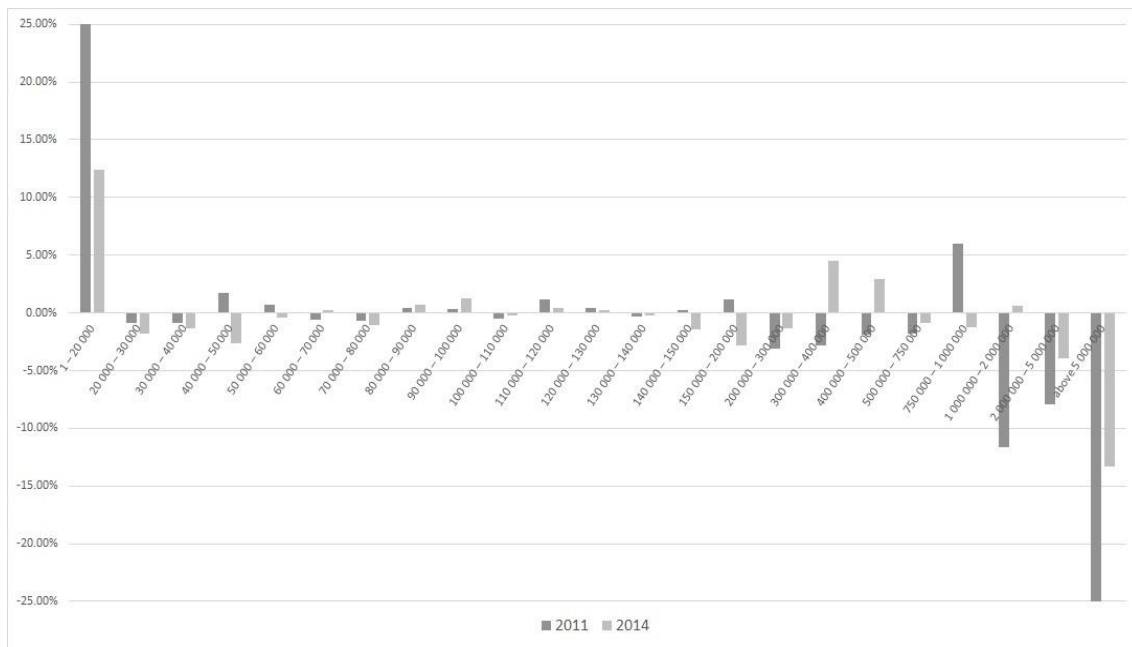## 3   A new focus on the top end of the income distribution

Two recent papers, one produced for this project (Hundenborn et al. 2018b) and another produced alongside this project (Bassier and Woolard 2018) have added substantially to our understanding of two key dynamics: one is on the way the growth in incomes for those at the very top have diverged from those of the rest of the population; the other is on the effects this particular growth path has had on inequality.

Investigation of the impact of the top-end issues on the analysis of income inequality discussed above is facilitated by the fact that Hundenborn et al. (2018b) make use of the same survey data from the NIDS that were used earlier. They add a second source of data from the South African Revenue Services (SARS) to give us a second look at top-end incomes. This latter dataset comprises aggregate tax records as well as micro-files of anonymized individual records. The advantage of this second source is that the tax data are expected to measure top incomes more precisely (Alvaredo et al. 2017). Household surveys often miss or are forced to impute high

earnings because many top earners either refuse to participate in the surveys, understate their incomes, or avoid the questions on income.

Figure 1 reflects the situation with regards to the NIDS and SARS data. In line with the international literature, we see that in 2014 for all individual incomes above R1 million per annum, NIDS underestimates incomes relative to the tax data by about 12 per cent for those over R5 million. Interestingly, it underestimates incomes consistently by about 30 per cent compared to the tax data from the 91st percentile of the income distribution upwards, though it appears to pick up a few large incomes at the top. South Africa has a relatively high mandatory filing threshold for personal income tax (PIT). Unsurprisingly, the figure shows that the PIT data do not reliably capture income below this threshold. The mandatory filing threshold in 2014 was R250,000 per year; in 2011 it was R120,000 per year. This represents the very top percentiles of income. Hundenborn et al. (2018b) write that, in 2014, the mandatory filing threshold was at the 97.5th percentile.

Figure 1: Difference in estimated mean taxable income between NIDS and PIT by income bracket

Source: Hundenborn et al. (2018b: figure 1).

The careful work in the paper by Hundenborn et al. reveals some subtlety in the merging of the two datasets. We see that in some cases the household surveys actually overstate a particular bracket of top incomes: those between R750,000 and R1 million. Hundenborn et al. argue that this may be because of the fact that NIDS is a panel survey with a high attrition rate of top earners. This results in the relatively few surviving individuals in the sample being more heavily weighted. This weighting effect will also accentuate any mismeasurement of these incomes in the surveys.

Table 5 reflects the impact of this data work on measured inequality using the Gini constructed from both survey data and administrative income tax data from SARS. It is important to remember that this measure only considers *taxable income*, which does not include income received as part of a government transfer (typically a payment from the government as part of a welfare programme).

Table 5: Gini coefficients at different thresholds

Threshold	2011	2011 data at the 2014 threshold	2014
Combining datasets at different filing thresholds			
Overall	0.832	0.826	0.790
Below filing threshold (NIDS)	0.762	0.783	0.735
Above filing threshold (PIT)	0.367	0.326	0.349
Combining datasets at the 99th percentile			
Overall	0.826	–	0.791
NIDS	0.782	–	0.742
PIT	0.328	–	0.343

Source: Hundenborn et al. (2018b: table 6).

The effect of combining the data on taxable income with household surveys is complex. The Gini coefficient of taxable income from household survey data fell marginally from 0.823 in 2011 to 0.813 in 2014. When these survey datasets were augmented in 2011 and 2014 to improve the statistical description of the taxable income at the top end, the augmented Gini was 0.832 in 2011 and 0.790 in 2014. The picture is very similar if the data are combined at the 99th percentile rather than at the tax threshold.

This paper is complemented by recent work by Bassier and Woolard (2018), who drill down into the SARS data and household survey data to make two critical points. The first is that in the years between 2003 and 2015, nearly 60 per cent of the population earned zero taxable income.[9] Over the same period, the incomes of the top 5 per cent of income earners increased by 5.1 per cent per annum. The second is that the growth in real incomes of the top 5 per cent after the 2008–09 recession was more than double the rate of growth of gross national income (GNI). In contrast, the incomes of the other 95 per cent either stagnated, or in the case of the bottom of the distribution showed only slight growth. Between 2003 and 2016, the real incomes of the top 1 per cent almost doubled. And in the six years between 2010 and 2016, the income share of the top 1 per cent increased from 10.5 per cent to 12.6 per cent of GNI.

In addition, the top percentile in the income distribution, which starts at a taxable income of R800,000 per annum, has a much higher wealth to income ratio than the rest of the earnings distribution. Income from sources other than salaries increases rapidly in the top two percentiles. This is especially interesting given its salience with the argument made by Piketty (2014), that inequality increases when the rate of return to capital is greater than the rate of growth. So, the owners of capital accrue wealth faster, with the divergence growing stronger in periods of low growth. A second component of this fast, post-recession growth in top incomes is due to labour market dynamics in which high-skilled professionals at the top end of the income distribution have more bargaining power as they are not easily replaced. Also, technical changes in the economy may further favour this group.

In sum, then, the SARS data have been critical in understanding income inequality because the growth of top incomes relative to the rest of the distribution has a large but previously underexplored impact on measured inequality. The use of this database has also helped identify more top earners than previously thought. For instance, Credit Suisse in 2016 estimated that there were about 45,000 dollar millionaires in the country, but Bassier and Woolard (2018) put the

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[9] Some would have been recipients of government grants or have been supported by other household members.

number at about 182,000. Hundenborn et al. (2018b) calculate that the number of people who earned over R10 million per year had more than doubled from 482 in 2011 to 1,048 in 2014.[10]

4   Earnings and the labour market: the drivers of earnings inequality

The attention that we have given to the assets and wealth of the top end of the income distribution is not meant to discount the importance of the labour market for the well-being of most of the South African population. Earlier our income decomposition analysis showed the dominance of labour market income in driving both the levels of income inequality and changes in this inequality. Alongside its status as the highest income inequality country in the world, South Africa also has the highest earnings inequality. Thus, there is a clear need to understand the key factors driving this earnings inequality.

Finn and Leibbrandt (2018) start by reviewing a growing literature on earnings inequality in South Africa.[11] To add to this available literature, the paper provides an in-depth study of the key changes in the South African earnings distribution over the period 2001–14 and then uses some modelling work to discern the impact of a set of key factors on these changes on the inequality of earnings as measured by the Gini coefficient.

From 2001 to 2014, South Africa saw the average real earnings of workers rise from R5,740 to R7,951. Over the same period, however, wage increases went mostly to top earners, so that overall inequality increased. As measured by the Gini coefficient, inequality was raised from 0.552 to 0.634, which is an atypically large increase.

Before trying to analyse these changes, Finn and Leibbrandt (2018) flag an anomaly in the earnings data, which seem to change substantially after 2012. By Finn and Leibbrandt's measurements there is a sudden jump—of some 18 per cent—in inequality between 2011 and 2014. This is almost certainly an indication of a change in the method of data collection rather than actual forces in the labour market.

Indeed, in 2012 South African officials changed the way they measured key earnings variables, and Finn and Leibbrandt find that the earnings Gini floated in a band from 0.54 to 0.57 up to 2011, and in a much higher band between 0.63 and 0.66 after 2011. The paper proceeds on the assumption that the trends in each of these sub-periods are correct but that the jump in inequality in 2012 is an artefact of the change in measurement. Thus, any analysis of trends in earning and earnings inequality that spans this break will be seriously biased in overstating the measured change in inequality. In their paper Finn and Leibbrandt illustrate this point by showing that their modelling work yields notably different answers when it is allowed to span the break in the data.

With due regard to this periodization, Finn and Leibbrandt go on to use a re-centred influence function approach (Fortin et al. 2011) to establish which factors drive changes in the Gini coefficient of earnings between 2001 and 2014. Eight potential explanations are evaluated. These are: education, experience, unionization, informal sector, race, gender, geographic location, and sector.

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[10] However, it should be borne in mind that, adjusting for inflation, R10 million in 2011 was valued at just below R8 million in 2014, which may account for some of this growth.

[11] Additional good reviews are provided by Wittenberg (2017a, 2017b, 2017c).

Table 6 profiles the labour market over the relevant period. We see that mean years of education of wage earners increased by almost two full years between 2000 and 2014, while unionization rates decreased by 5 percentage points, or by about 15 per cent. Female labour force participation increased by 15 per cent, from 40 per cent to 46 per cent, while the proportion of wage earners in urban areas increased from 0.68 to 0.77. We further see substantial decreases in the share of workers employed in mining, agriculture, manufacturing, and domestic work, which have been historically large sectors employing relatively unskilled labour. At the same time, we observe the increasing importance of the finance and services sectors, both of which reflect an increase in the share of workers of 5 percentage points. This points to important inequality-enhancing forces in an increasingly difficult labour market for relatively less-skilled workers. The rest of the paper substantiates this.

Table 6: Labour market summary statistics, 2000, 2011, and 2014

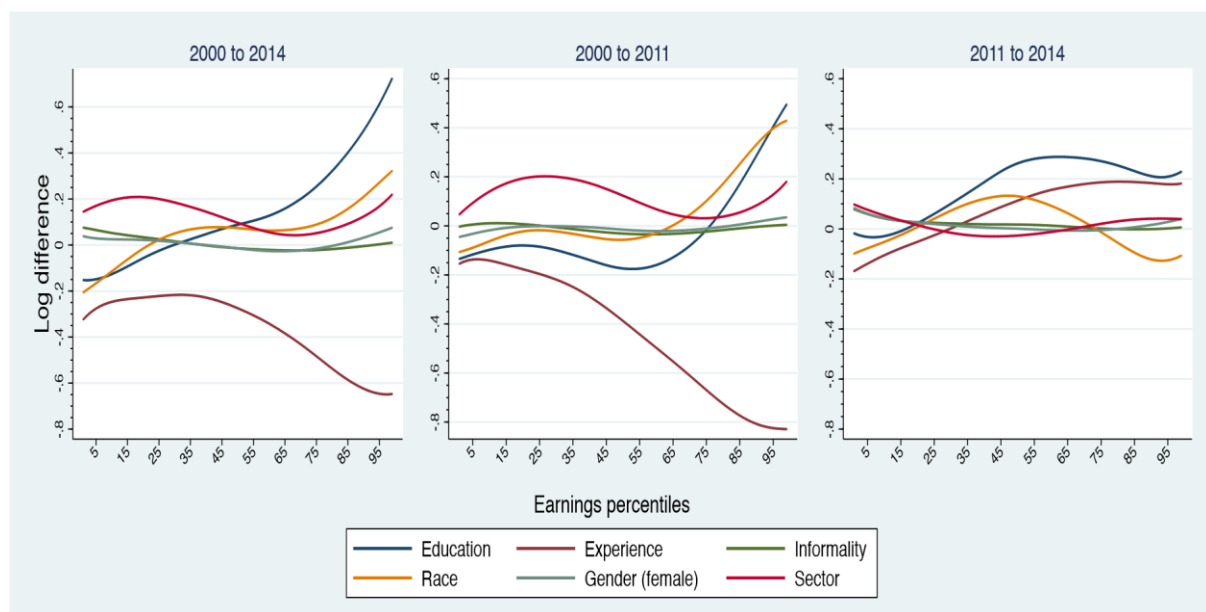|	2000	2011	2014
Years of education	8.77	10.54	10.75
Potential experience	22.25	21.33	21.52
Union member	0.34	0.30	0.29
Formal employment	0.79	0.75	0.78
African	0.70	0.70	0.73
Coloured	0.12	0.12	0.12
Asian/Indian	0.03	0.03	0.02
White	0.14	0.14	0.13
Female	0.40	0.45	0.46
Urban	0.68	0.79	0.77
Sectoral shares			
Agriculture	0.10	0.05	0.06
Mining	0.07	0.03	0.03
Manufacturing	0.14	0.14	0.12
Utilities	0.01	0.01	0.01
Construction	0.06	0.07	0.07
Trade	0.15	0.18	0.17
Transport	0.05	0.06	0.06
Finance	0.08	0.13	0.13
Services	0.20	0.24	0.25
Domestic services	0.13	0.10	0.10
Earnings (rand)	5,740	7,418	7,951
Log earnings	8.06	8.31	8.18
Observations	24,276	67,235	63,845

Source: Finn and Leibbrandt (2018: table 1).

The post-2011 period saw a flattening of earnings increases for the lowest earners, which had been robust between 2001 and 2011, a decline in real earnings for middle earners, and a continuation of the trend of earnings increases for top earners—all factors that indicate that real inequality rose over this sub-period.

Most of the changes profiled in Table 6 are inequality-reducing for most workers, except for those at the very top of the earnings distribution. Africans increased their rate of labour force participation by 3 percentage points and saw the gap between their earnings and the earnings of Whites shrink by 10 percentage points. Women increased their labour force participation rate by 6 percentage points and saw a 5 percentage point reduction in the gender wage gap. The difference between what unionized and non-unionized workers earned also fell by 6 percentage points, alongside an overall reduction in unionization of 5 percentage points.

The statistical modelling goes on to look at two kinds of impacts on earnings inequality from these changes. The first is the impact of changes on the distribution of characteristics of members of the labour force, sometimes called endowment changes. The second is the changing relative earnings values of these characteristics, sometimes called changing price effects or changes in the returns to endowments.

This modelling shows that the equalizing effects of the changing characteristics of workers listed above are offset by the inequality-exacerbating effects of growing compensation for both educated and more experienced South African workers, relative to their peers. Figure 2 shows that prior to 2011, the returns to experience actually reduced inequality, but after 2011 this dynamic was reversed. It also shows that the biggest driver of inequality since 2012 is educational attainment, and particularly the returns to tertiary education. This return accrues disproportionately to top earners.

Figure 2: Total effects of different variables over the distribution of earnings

Source: Finn and Leibbrandt (2018: figure 12).

Changes in the composition of the labour force have therefore offset growing inequality in South Africa, but structural factors continue to drive increasing inequality in South Africa. From 2000 to 2011, the net increase in the earnings Gini was 1.1 percentage points. From 2011 to 2014, the net increase was 7.13 percentage points. Overall, structural changes accounted for 7.99 of the 8.24 net percentage point increase in measured Gini from 2001 to 2014.

The increase in the number and general level of education of workers had the effect of increasing the Gini coefficient only slightly, by 0.42 percentage points, while increases in the earnings of tertiary-educated workers contributed to an 11.17 percentage point increase. Most of this effect was observed from 2011 to 2014, as prior to 2011 the impact on inequality had been offset by wage stagnation. When raises were then granted, they mostly went to top earners, who are more likely to have had higher levels of education to begin with.

Aside from these effects of education and experience, and despite decreasing inequality between racial groups, it is important to remember that the gap between what Africans earn and what White people earn is still large at 57 per cent. Holding these other effects constant, racial disparity in earnings continued to drive a growth in inequality of nearly 3.5 percentage points over the period.

This picture from Finn and Leibbrandt is complemented by findings from a number of other recent papers on earnings inequality. Wittenberg (2018) shows that earnings have narrowed at the bottom end of the distribution, possibly due to wage setting through collective bargaining and minimum wage determinations, but that earnings have widened at the top end. Mean real earnings have increased but the median has not; this implies an increase in earnings inequality in the top half of the earnings distribution, while the bottom half has become more compressed.

The key lesson from these findings is that those wage earners who tend to be 'stuck' at a median level of earnings—which has not moved since the end of apartheid—have personal characteristics and work in sectors that make them especially vulnerable to forces driving the demand for labour and wage setting in the contemporary labour market. This is despite the fact that they have far higher levels of education than median earners in 1993.

These median earners are predominantly African, male, and in their thirties. Those earning below the median are most likely to be women. Median earners are also less likely to be unionized than in 1993 or even 2000. Median earners comprise a mix of occupations including elementary, craft workers, and service and clerical posts, while the proportion of manufacturing workers at the median has dropped. Median earners are now less likely to be members of a trade union than they were in 1993, while 40 per cent of those in the top half of the earnings distribution are unionized.

The average age of the median band has not changed markedly, but it has increased in the top half. This indicates that younger entrants are finding it harder to move into higher-paying jobs. Nor has it changed much in the bottom half, indicating that young people are finding it difficult to enter the labour force at all.

Kerr and Wittenberg (2017) show that the public sector, which employs about 18 per cent of all employees, reflects earnings consistently above the median. Public sector employment has increased since 2007, and then more sharply since 2010 after a slight dip around the 2008 recession. In 2014, it employed about 2.7 million people. Kerr and Wittenberg establish that from 1997 to 2007, median and mean earnings in the public sector grew by 33 per cent and 25 per cent respectively. The mean in the private sector grew by 25 per cent in the same period while the median remained unchanged. Clearly, those working in the public sector have generally done better than those employed in the private sector. In an examination of occupationally similar positions in the private and public sectors, Kerr and Wittenberg found that at almost every rung—except at the very top of the ladder—public sector workers did better in terms of wages, especially those who were unionized. At the same time, the premium attached to union membership in the private sector has declined, suggesting a weakening of union power here.
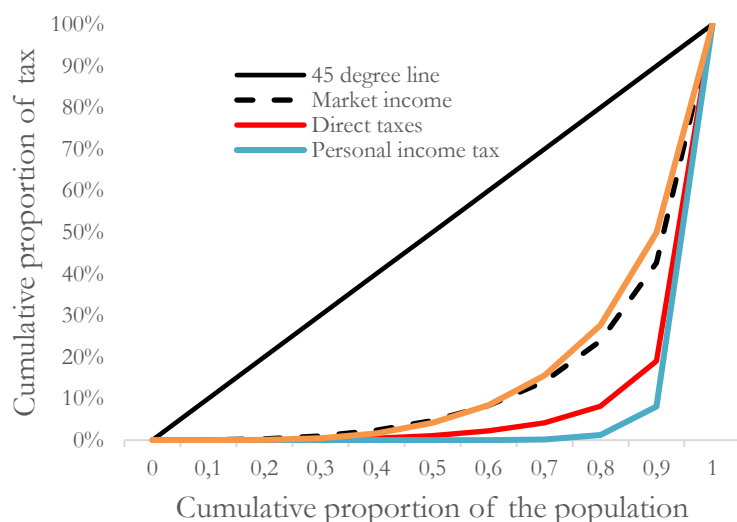
Finally, as in the case of household income, there is important recent work using tax data to address measurement issues at the top end of the earnings distribution. Wittenberg (2017a) used two datasets, one based on four waves of 2010 Quarterly Labour Force Survey (QLFS) data and the other on 2011 PIT data. His findings are unequivocal: earnings inequality has widened since the end of apartheid. Wittenberg estimates that the Gini coefficient (for earnings), when measured by the tax data, could be 3 percentage points higher than previously thought, increasing from 0.567 to 0.599. The Gini coefficient for self-employment, measured by the QLFS, also goes up by 3 percentage points to 0.716. The widening inequality is driven mainly by a rise in top earnings. In 2014, the incomes of the top 2.5 per cent increased the Gini coefficient by 5.5 percentage points.

5   Towards policy: evidence from fiscal incidence studies

Such inequality-enhancing trends in market income place a substantial responsibility on the taxes and transfers of the fiscal system to serve as an equalizing counterweight. This system has carried such a burden throughout the post-apartheid era and, despite the fact that post-apartheid South Africa has always been one of the most unequal societies in the world, a number of studies have shown that the fiscal system is well designed to be strongly redistributive.[12] For this project, the fiscal incidence analysis by Maboshe and Woolard (2018) updates earlier work using 2017 data and adds new analysis of the incidence of tax benefits.

On the tax side, this study shows that PIT is the largest component of direct taxation and accounted for R353 billion in 2015 tax receipts. This was 36 per cent of total revenue. As shown in Figure 3, direct taxes on income are progressive. In South Africa, the top 20 per cent of income earners contribute 96 per cent of all PIT. This analysis excludes indirect taxes, such as sales tax and fuel tax. But, we know from Inchauste et al. (2015) that sales taxes (VAT) and the fuel levy are progressive. But excise taxes on alcohol and tobacco are regressive.

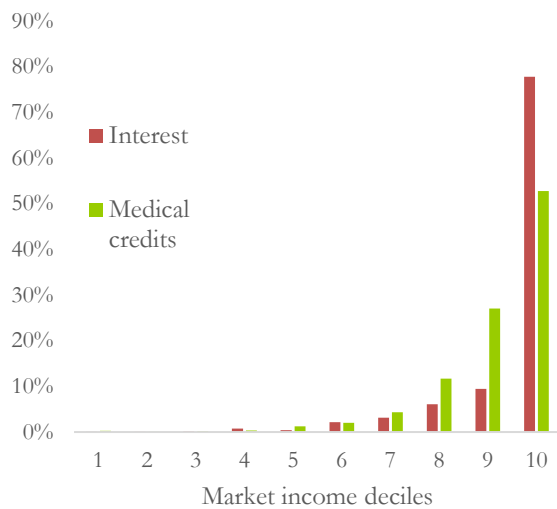Figure 3: Concentration curves for direct taxes

Source: Maboshe and Woolard (2018: figure 3).

Maboshe and Woolard fill an important gap in our information on the tax system by analysing tax credits, allowances, and deductions for the first time. These benefits allow taxpayers to reduce their PIT. The largest of these deductions are for interest earned on savings and investments, credits for the use of private medical services, and allowances for private pension contributions and retirement savings. Figure 4 shows that these policies are highly regressive in absolute terms, with 85 per cent of the total benefit accruing to the top 30 per cent. The poor lack access to private or non-subsidized medical care and do not accumulate large savings.

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[12] Inchauste et al. (2015) provide a very thorough example and also a good review of earlier fiscal incidence work.
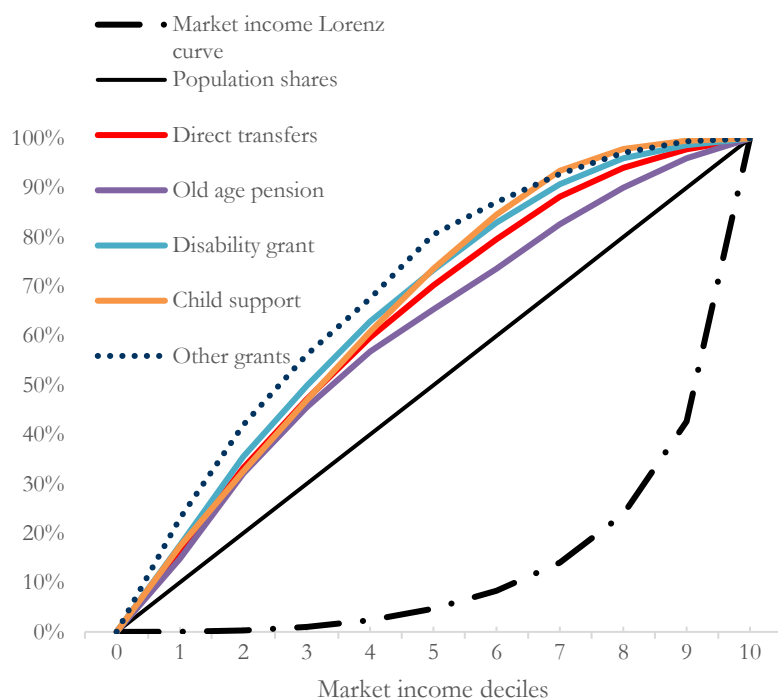
Figure 4: Distribution of selected fiscal benefits

The racial and gender dimensions of these deductions are also clear. Whites receive 80 per cent of the total interest exemption benefits even though they represent only 8 per cent of the population. They also receive the largest share of the deductions for contributions to private pensions. Expenditures for the medical credit, though, helped Blacks more than Whites in absolute terms (44 per cent of the total compared to 39 per cent of the total), reflecting the fact that most formal sector workers have private medical aid coverage. However, this is still very racially skewed in relative terms as Blacks make up 80 per cent of the population.

Maboshe and Woolard go on to provide analysis of South Africa's extensive social spending. Social spending in South Africa is nearly twice that of the median for developing economies. Spending amounts to 10.2 per cent of the annual budget or 3.1 per cent of annual gross domestic product. Coverage has also grown in South Africa, from 9.4 million beneficiaries in 1994 to 16.5 million in 2014. The largest transfers by aggregate expenditure are the state old age pension for persons 60 years or older, at R49.4 million, and the child support grant and foster care grant, at R43.4 million. The size of the benefit, per person, is much larger for the old age pension than it is for the child support grant, meaning that 11.6 million children receive similar support to 3.07 million elderly people. Other significant transfers are made for persons qualifying as disabled.

Figure 5 shows that these transfers are well targeted by income group. More than 70 per cent of the direct transfers goes to the poorest half of the population, with 50 per cent of spending going to the bottom 30 per cent. Disaggregating, 74 per cent of the children's benefit, 73 per cent of the disability grant, and 65 per cent of the pension benefit go to the poorest half of the population.

Figure 5: The progressivity of each of the three main social cash transfers in South Africa

Source: Maboshe and Woolard (2018: figure 6).

Transfers are also mainly progressive when accounting for the intersection of gender, race, and class. For example, 76 per cent of transfers going to female-headed households go to the bottom half of female-headed households and 64 per cent of transfers going to male-headed households go to the bottom half of male-headed households.

In sum, this study both confirms and extends the South African literature on the redistributive potential of taxes and social expenditures in South Africa. It confirms that tax policy remains progressive in general and budgeted expenditures on social grants are well targeted to reach those who need them. However, the paper also highlights the fact that some important tax benefits are sharply regressive.

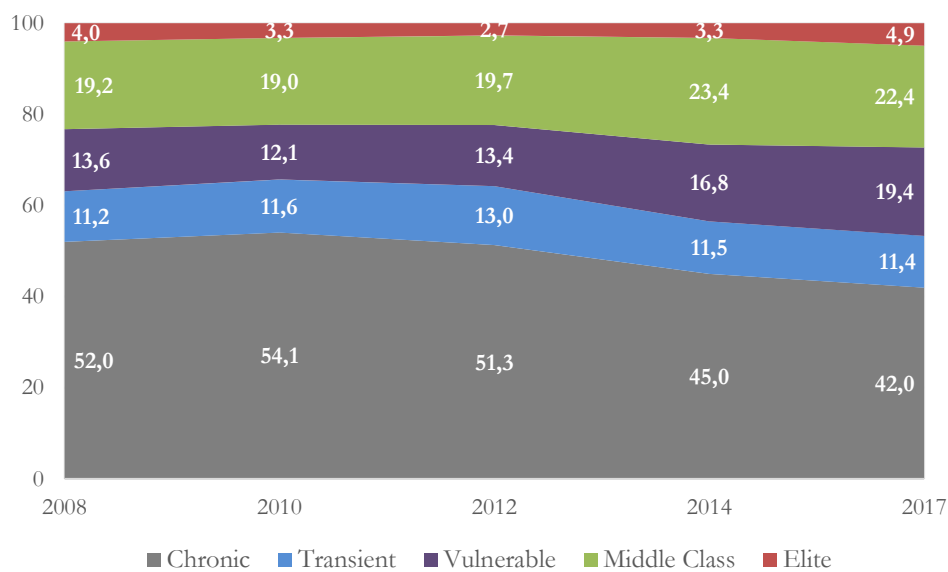## 6   Disappointing outcomes: inequality persistence and low social mobility

Despite some well-designed and well-targeted policies, South Africa's inequality has remained persistent and the society is not transforming. Indeed, the weight of the research reviewed here shows that, over the last decade, progress has slowed and even stalled. Recent research by Schotte et al. (2018) captures this sense by showing that a stable middle class in contemporary South Africa is much smaller than previously thought, and that the poor make up almost half of the population. In fact, a significant proportion of South Africans have for the past decade been in a game of 'snakes and ladders'.

We consolidate this picture of contemporary South Africa with further detail from this social mobility perspective. Schotte et al. use five waves of the NIDS to track movements into and out of poverty between 2008 and 2017 and to delineate five major socioeconomic classes in South

Africa: the chronically poor, the transient poor, the vulnerable middle class, the stable middle class, and the elite.

A key finding is that the stable middle class is relatively small—only one in four people can be considered to be part of either the stable middle class or the elite. Another is that poverty, over time, is much more pervasive than a cross-sectional analysis tells us. Stats South Africa estimates that 55 per cent of the population lived in poverty in 2015 (Statistics South Africa 2017). Schotte et al. add to this by estimating that about 49 per cent live in chronic, persistent poverty. In addition, another 11.4 per cent can be classified as 'transient poor', and about 19 per cent are part of what we can call a 'vulnerable middle class'. Both of these groups are at risk of falling back into poverty from one wave to the next. Figure 6 reflects this picture.

Figure 6: Socioeconomic class sizes, 2008–17

Source: author's creation, based on data from Schotte et al. (2018).

What are the triggers that propel people from one state to another? Two key triggers are either a labour market event—losing or gaining a job—or a demographic event—gaining or losing a member of the household. Job gains accounted for one-third of all exits from poverty, while a change in household size accounted for half of all poverty entries or exits.

Although a member of a household having a job can be important in lifting people out of poverty, it is not sufficient. Those with unstable jobs—without contracts or union protection—are more vulnerable to falling back into poverty than those with permanent, generally formal sector employment.

Chronic poverty has clear characteristics associated with it: poor education (less than matric), larger households, female-headed households, unemployment, geographic location, and race. The legacies of apartheid, which forced many African people to live in poverty-stricken rural 'homelands' far from economic opportunities, are still deeply felt. So, for instance, only 2.5 per cent of rural households remained non-poor through all five waves from 2008 to 2017, while nearly 83 per cent were poor in four or five waves.

In contrast, about one-quarter of urban households remained stably non-poor (and 34.2 per cent were non-poor in four or five periods), and 42.7 per cent were poor in four or five periods. For

the non-poor who live in an urban area, the risks of falling into poverty are less than they are for similar people residing in rural areas, but for the poor, the chances of escaping it are not significantly different from their counterparts in rural areas. In fact, the urban African population is more affected by transient poverty, with many more moving out or falling back into poverty over the five waves of NIDS.

The other striking feature of poverty is its female, and youthful, face. Nearly 72 per cent of households that were female-headed in all five waves remained in poverty in four or five waves, compared with only 29 per cent of those in male-headed households. It is also worth noting that female-headed households are three times as likely as male-headed households to be single-parent households.

Race is another persistent legacy. Although the sample of White people was relatively small—just 274 individuals who were tracked in all five waves—the vast majority, 93.6 per cent, were observed to be consistently non-poor. By contrast, about 63 per cent of Africans were poor in four or five waves, with only about 9 per cent remaining non-poor in all five waves.

The stable middle class, who comprise about 21 per cent of the population, shows characteristics that sets it apart from the vulnerable middle class. One key indicator is the level of education: two-thirds of middle-class household heads are educated at matric level or higher. The other is employment: three-quarters are employed, typically as formal sector employees in more secure jobs. They also earn on average twice as much from the labour market as households in the vulnerable class (R13,127.37 compared with R5,366.17).

The elite is almost three-quarters White, predominantly urban-based, and has an expenditure level much higher than the stable middle class (R25,659 compared with R4,536, average per capita). This class earns much more from the labour market than the stable middle class—R38,223 compared with R13,127. As reported earlier in this paper, though, they also get a significant amount of their income from capital investments.

7   Conclusion

This synthesis paper began with a very brief summary of the findings from the literature on income inequality that existed prior to our most recent research conducted within the 'Inequality in the Giants' project. We then built on this to discuss some of our key findings and contributions from several more recent papers, and to consider how the bigger picture has become sharper and more coherent.

Starting with the point of departure that we had already known that inequality has remained exceptionally high in post-apartheid South Africa, we used dynamic decomposition methods to investigate the drivers of income inequality and compare the static and dynamic decompositions. The key finding, which corroborates the existing literature, is that the labour market remains key to understanding the evolution of inequality in South Africa. A secondary finding was that while government grants played an important role in reducing inequality in earlier periods, the effects of this mitigating force have become weaker more recently.

We then reviewed some new empirical work that incorporates tax data, which is better able to measure the incomes of high-income individuals. This provides us with potentially better estimates of the overall income distribution, as there are several reasons why the conventionally used survey data may not adequately capture the incomes of a very small proportion of high-income people.

This work highlighted two important points. First, about 60 per cent of the population earn no taxable income. Second, those at the top end of the income distribution have experienced much higher rates of real income growth than the remainder of the population. Their growth has also been higher than the growth rate of GNI, which means that this group is receiving a greater 'share of the pie' than they previously were. This has put upward pressure on South Africa's inequality levels, which partly explains why inequality has remained so persistent to date.

Another methodological innovation has been to decompose the sources of changes in earnings inequality into changes in the distribution of endowments and changes in the returns to these endowments, while explicitly allowing for heterogeneity in these returns. This work required a caveat due to some implausibly large changes in the measured Gini coefficient of earnings, likely due to a change in definitions or survey methodology. Nonetheless, the method highlighted that despite the increases in average education levels, which would have reduced inequality by itself, there were structural changes in the economy that enhanced earnings inequality. In particular, the increased returns to education were accruing primarily to those with a tertiary qualification, and this interacted with a change in the returns to experience in a complementary way that caused an increase in earnings inequality.

Moving more into the policy space, we further developed some of the fiscal incidence literature in South Africa by incorporating additional information on tax exemptions. This work confirmed that while the direct tax system is progressive and the social benefits are well targeted, some of the tax benefits are indeed regressive. This suggests that there may still be some room for further fiscal policy to impact on inequality, although the authors are cautious in their interpretation as the benefits involve healthcare and pension contributions, which are likely valuable for welfare in direct ways over and above the implications for inequality.

We concluded our review by considering some of the most recent work on social mobility in South Africa using the country's most recent nationally representative household- and individual-level panel data. The main finding is that the stable middle class is very small in South Africa, which has implications for social and political stability, among other things. A large proportion of South Africans live with a vulnerability to periods in poverty. This includes a large fraction of middle-class people who remain extremely vulnerable to a negative shock that can, and frequently does, push them back into poverty.

Where does all of this leave us, either as academic researchers who work on inequality or as concerned individuals who would like to make a contribution to reducing the unacceptably high levels of inequality? As researchers, inadequately answered questions remain about the roles and importance of assets and wealth in perpetuating the high levels of inequality. With our focus on the top end of the income and earnings distribution, we have shown very clearly that those at the top end have flourished even when others have struggled. They have done this by being able to draw on a far broader array of income sources and physical, financial, and human assets. But we need to know much more about exactly how wealth is transferred inter-generationally and, more generally, about the drivers of social mobility.

A key question that remains unanswered, even though it has been flagged since the late 1990s, is why the South African labour market continues to display such extraordinary levels of unemployment. This would require a better grasp of the demand for labour, in conjunction with market structure and market power. Our analysis of the labour market, and that of others, has shown that the finance and services sectors have grown substantially faster than the more traditional sectors of mining, manufacturing, agriculture, and domestic work; it may be a useful line of enquiry to consider longer-run, historical, and holistic views of the labour market to understand our particular challenges.

On the other side of the labour market, there are several questions relating to the earnings and income of the very high earners. Why do South African CEOs earn so many multiples more than the median workers relative to their counterparts in other countries? Is this a social norm in a society that has historically justified high levels of inequality? Or is this a failure in corporate governance processes? Or is it due to policies that may themselves be related to a relatively well-paid public sector? These are questions that we could only make conjectures about at present.

From the policy side, there are some key lessons. All the evidence points to the importance of social grants for reducing both poverty and inequality. However, there is evidence that the ability to raise taxes further may be limited, and at the same time it may be harder to extend substantively the inequality-reducing effects of grants. This suggests two different policy approaches. First, there may be value in putting effort into extracting better and higher-quality service delivery from the existing budgets. An increase in such efficiency is one possible way to improve welfare even if the budget constraint is binding. Second, one needs to consider policies that can positively shape the distribution of productive assets and the returns to these assets that would raise the market incomes of people who are economically vulnerable and marginalized. Policies such as these would include educational policies. They would also include market regulations that stimulate competition between firms, encourage new firms to enter, support innovation and dynamism, and reduce the existence and exercise of market power on the part of incumbents.

So, there are several possible ways forward. While it is not clear which subset of these is necessary to put South Africa onto a more positive, transformative, dynamic trajectory, there is widespread and growing acceptance that levels of inequality such as those that prevail in South Africa are unsustainably high. They threaten the social fabric of society, they increase the risks of political and economic upheaval, and they prevent the majority of people from living up to their full potential. All of these are likely to harm the country's long-term developmental prospects. For all of these reasons, significantly reducing the inequality in South Africa warrants continued attention and effort from all the different sections of society.

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