

---

## A review of the economics of income inequality literature in the South African context<sup>1</sup>

Murray Leibbrandt<sup>2</sup>

Vimal Ranchhod<sup>3</sup>

### Abstract

The literature on the trends in income inequality in South Africa, as well as its causes and consequences, is considerable.<sup>4</sup> We provide a review of the existing work to date, together with some theoretical models from the international literature. This allows us to take stock of what we know about inequality in South Africa at present, as well as to highlight some key gaps in knowledge. One of the robust overall findings is that inequality in incomes is extremely high from a global comparative perspective, and has increased since the democratic transition in 1994, although the most recent trends remain a subject of debate. A major component of overall income inequality is due to inequality in the labour market, both due to unemployment as well as due to wage dispersion amongst the employed. Intra-racial inequality has increased substantially, while inter-racial inequality has decreased in terms of its relative contribution to overall inequality, but the level of inter-racial inequality remains very high by international benchmarks. There are potentially many mechanisms that can theoretically explain part of the trends in inequality. One of these mechanisms is inequality in educational outcomes. There is some South African literature in this area showing that the returns to higher levels of educational attainment are extremely high, and that youth from poorer backgrounds are systematically less likely to attain these levels of education. This generates an inter-generational persistence in inequality in South Africa. In general, however, the empirical literature on causal mechanisms remains relatively undeveloped. In particular, given the well-established importance of employment and wages in aggregate inequality, we have to date an unsatisfactory understanding of how the South African labour market operates. We conclude with a discussion of ways in which we believe that subsequent research on this topic might evolve in a

---

<sup>1</sup> We acknowledge support from the European Union represented by the European Commission, on behalf of the Government of the Republic of South Africa, for Research on Inequality for the Programme to Support Pro-poor Policy Development.

<sup>2</sup> NRF Research Professor (Poverty and Inequality), SALDRU, School of Economics, UCT.

<sup>3</sup> Associate Professor and NRF Research Fellow, SALDRU, UCT. Corresponding author: vimal.ranchhod@uct.ac.za.

<sup>4</sup> For the remainder of this paper, we used the term 'inequality' to imply 'income inequality', unless specified otherwise.

positive and fruitful manner. Our major suggestions are that there is likely to be substantial progress on this issue if researchers were to consider both theoretical and empirical methods to investigate the linkages between inequality and how jobs are created, what affects the wage distribution, the impact and trajectories of demographic trends on the labour market, migration and geo-spatial development, and the importance of market power for both price setting, wage setting and firm entry.

## Section 1: Introduction

What do we know about income inequality in South Africa at present? It is widely acknowledged that South Africa was, and remains, one of the most unequal societies in the world in modern times. This level of inequality has both policy implications as well as socio-economic implications. Inequality has been shown empirically to correlate positively with a number of social ills in several countries, including crime, social instability, health and mortality. In *The Spirit Level* (Wilkinson and Pickett, 2009), the authors use cross-country comparisons from several OECD countries, as well as cross-state comparisons using the 50 states within the USA, to show a striking pattern that correlates inequality with the aforementioned social ills. Particularly interesting is that the high levels of inequality affect all members of society adversely, including the wealthy, thus strengthening the claim that the effects cannot be due to higher levels of poverty in more unequal societies. Moreover, there has been growing recognition in recent years that high levels of inequality can be detrimental to economic growth and development. The high levels of inequality in South Africa have thus been recognized by government as an important policy issue.

The purpose of this paper is to provide a coherent summary of the relevant literature in the South African context to date, as well as a discussion of possible avenues of future research. We begin Section 2 with a description of the methods that are used to measure inequality, and then proceed to describe the most commonly used data sources in South Africa. A substantial component of our work relates to summarizing the South African literature on inequality measurement as this accounts for the bulk of the empirical work to date. In order to provide a sense of the extent and texture of South African inequality from a global perspective, we then discuss some of the measurements of inequality of other countries.

In Section 3, we consider some theories of inequality, and then relate these back to the South African environment. While there has recently been a growing body of work on these questions, the existing body of knowledge specifically on South Africa remains relatively sparse. In Section 4, we consider some of the policy related research and empirical evidence in South Africa, specifically focussing on taxes and transfers, and on education. This guides us in our concluding discussion of Section 5, in which we present possible directions forward in terms of research.

## Section 2: Income Inequality in South Africa

### *Section 2.1: Measuring Income Inequality*

Inequalities occur along many dimensions in a society. For example, we can consider income inequalities, wealth inequalities, educational inequalities, health inequalities and many more dimensions that might warrant analysis and investigation. In this review, we are focussing specifically on income inequalities, and only consider other dimensions insofar as they reflect causes of income inequalities. This is not because we believe that other aspects of inequality are not important, but only because we need to maintain some focus and keep our review coherent.

Income inequality is conceptually about the distribution of income amongst recipients within a group. From this statement, it follows that the unit of analysis, who are the recipients, as well as what constitutes the group, are both important in terms of their impact on measurement. Depending on the degree of stratification, one could have low inequality within groups but high inequality across groups. Our primary group level is at the level of a nation state, i.e. South Africa, although some of the literature has focussed on decomposing inequality by groups such as race or by urban/rural populations. In terms of recipients, are we conceptually thinking of inequality as a household level phenomenon, or an individual level phenomenon? In most cases, we conceptually think of inequality as an individual level phenomenon, but empirically use per capita incomes which are identical for all members of a household, because we think of all members of a household as being equally well off (or equally not well off).<sup>5</sup>

Atkinson (2015) provides a useful accounting system to analyse how the various components of income can be disaggregated. In this framework, all the individuals' earnings plus private transfers

---

<sup>5</sup> Note that this implicitly assumes that members of a household share in a fair and even manner. For further discussion of the relevant issues, see Leibbrandt and Woolard (1999).

are combined to obtain *Household market income*.<sup>6</sup> Note that individual earnings include any return on investments, interest income and rental income. To this, we add state transfers to the household which yields *Household gross income*. After deducting all direct taxes, we obtain *Household disposable income*, after which we divide by the number of equivalent adults in the household to obtain *Household equivalised disposable income*. Finally, we can add to the disposable income the value of public services that a household receives, to obtain *Household extended income*.

This system of accounting reflects explicitly that there can be multiple forces affecting sub-components of income, in different directions, at the same point in time. This in turn implies that the trend in the aggregate income distribution is essentially a combination of the trends in the distribution of the sub-components, combined with the relative importance of the sub-components for individuals with different levels of income. It also allows one to consider how different components of income might respond to changes in policy or the economic environment.

For example, a common approach is to consider household income per equivalent adult after taxes, transfers and adjusting for public services, i.e. Household extended income. To implement this approach, a researcher would take a household survey and add up all the wages and other market related income of all members of the household to obtain household level earnings. She would then include any state transfers as well as private transfers (i.e. remittances) into the household, to obtain a measure of household gross income. From this, one would deduct total direct taxes (such as PAYE and income tax) to obtain a measure of household disposable income. To convert from a household level variable to a per capita variable, one would divide by the number of equivalent adults in the household in order to ensure that we are not measuring inequality in income that is arising simply because some households are larger than others. Finally, even though it is difficult to implement and thus not often done, we would like to add the value of public services that the household consumes. This can be substantial, and would include the value of public schools, public healthcare, subsidised transport etc.

The time period over which the income is measured is also important. One can consider income earned in a month, or income earned in a year, or all the income that a person will earn over the course of their lives. Even if taken at one point in time, measured inequality will be different if only

---

<sup>6</sup> See Atkinson (2015), Figure 1.5 on page 15 and corresponding discussion.

some of these adjustments are allowed for by the data or made by the analyst. It is thus important to be explicit about both the measurement methods and data issues in any empirical work.

As we can see, measurement of inequality is not a straightforward task, both for practical reasons as well as for conceptual ones. After a long period of discussion and debate, the economics profession converged on what the requirements and properties of an acceptable measurement method would entail. These are:

- *Scale independence*: This refers to the requirement that if each individual's income in an economy were to increase/decrease by the same proportion, then overall measured inequality should remain unchanged.
- *Anonymity*: This refers to the idea that the measurement of inequality should not be dependent on which specific individuals the different amounts of income accrue to. Thus, exchanging the income levels of various members of society should not affect overall measured inequality.
- *Transfer principle*: The requirement captures the idea that if we were to transfer a 'small' amount of income from a richer person to a relatively poorer person, then our measured income should decrease.<sup>7</sup>
- *Population independence*: The measured inequality should not be a function of the population size of a country. Thus, larger countries, which may well have many more rich and poor people, are not necessarily more unequal than smaller ones.

In addition, a property that is considered desirable, but not absolutely necessary, would be 'decomposability'. This property refers to the potential for a particular method of measurement to allow for aggregate levels of inequality to be attributed to the inequality both within different groups, as well as between different groups. Groups can be defined by varying characteristics, and a common one in the South African context would be racial categories. Decomposable methods also allow for analysing inequality by decomposing inequality into inequality arising from various sources of income.

---

<sup>7</sup> By 'small' we mean by a sum that is not sufficient to reverse the rankings of who the 'richer' and 'poorer' persons are. Also, a weaker version of the transfer principle merely requires that measured inequality should be non-increasing if there is a 'small' transfer of income, rather than requiring that the measured inequality be strictly decreasing.

Once one has an estimator that satisfies these properties, one can use data to measure the magnitude of income inequality in a group. There are several common measures used, each of which capture different aspects of the distribution of income within the group. The most common ones are:

- Gini coefficient
- 90/10 ratio (Used for simplicity but doesn't satisfy the transfer principle)
- Theil's coefficient (Sometimes preferred to Gini as it also has the decomposability property)

### *Section 2.2: Practical data issues for the measurement of inequality in South Africa*

The major data source for the empirical work to date has been from household surveys, which have been available on a national level since 1993. The majority of these have been conducted by the national statistical organisation, StatsSA, and include the OHS, LFS, QLFS, and IES. Also widely used have been the NIDS, the various SA Censuses and the Saldru PSLSD 1993 survey.

Prior to 1994, the data is a lot more difficult to work with, and hence there are only a few studies that aim to measure long run inequality trends in SA. One reason that the data is difficult to work with is that the major source of data comes from the old Censuses, which often did not enumerate the homeland areas, as the prevailing government viewed those areas as 'independent'. This is discussed by Treiman et al (1996), who make use of the 1980 and 1991 Censuses to analyze racial differences in occupational status and income in that era.

Even when we have data availability, there are a few common issues that need to be considered, both by the researcher as well as by the reader. Firstly, inequality can be quite sensitive to the earnings and incomes of the very high income individuals, but we are often unable to include them in our surveys. Second, overall income is an aggregate of many sources of income, including property income, profit shares, remittances and labour market income. These components matter to different extents depending on where in the income distribution a person is. Yet household surveys often struggle to adequately capture earnings from profit shares and wealth. Internationally, the general approach that has been used has been to find alternative data sources, often administrative in nature, and use this to complement the existing survey data to obtain a more complete picture of inequality.

In addition, it is important to recognize that some entities, be they individuals or organizations, are out of scope of a survey. For example, corporate profits can be substantial but they may not be distributed to individuals, and thus will not be captured in a household survey. The returns on capital are also likely to be disproportionately accruing to institutional investors, who themselves are not going to be recorded in a household survey. Then, even when these returns are observed and accounted for, there is a challenge in determining the relevant individuals as well as time periods that one ought to attribute these returns to. For example, consider a large pension fund that generates substantial investment income in a particular year. If we care about income from an individual welfare perspective, then does the fact that a pension fund is doing well now improve a member's welfare even though they only plan on retiring in thirty years' time? Would it make a substantial difference if the retirement horizon was less than 5 years away? Moreover, even if we ignored the timing issue, it is not clear how to allocate the mapping from a pension fund doing well into individual level agency or empowerment. The trustees of the fund will have an increased amount of influence, but this investment income is not, in any legal sense, the income of the trustees. Similarly, most of the members of this pension fund, even though they have a legal claim on the investment income, will have at most a limited improvement in their agency in the current year.

A different issue that an empirical researcher in this field encounters, relates to how sampling frames and questionnaires change (or do not change) over time. Individual participants in a survey generally have a 'right of refusal' to participate in the survey in its entirety, or to refuse to answer any particular questions. Questions relating to income are often not answered, or answered only partially using broad categories of income rather than specific amounts. This necessitates that the researcher make some idiosyncratic assumptions or decisions with regard to how to proceed, and these decisions are not generally neutral in their implications for inequality measurement. These decisions include whether to impute for non-reported income or for cases where only categories of income have been reported, and what method of imputation to use in such instances. In addition, when trying to estimate changes or trends over time, these issues become more complex. One needs to put in a great deal of effort, and generally make subjective assumptions, in order to compare findings from different surveys with different survey instruments over time.

The ideal solution is to obtain better data in terms of coverage, completeness and precision. In the South African context, it is only very recently that the tax authorities are in a position to make some

of the tax records available for research purposes. This means that all of our existing estimates at present are likely to underestimate the true levels of income inequality, but it also represents an exciting way forward in terms of our ability to be more precise and accurate in our measures.<sup>8</sup>

### *Section 2.3: Data sources for measuring inequality in South Africa*

Having spent a considerable amount of time discussing both how we theoretically measure inequality, as well as some of the conceptual challenges that arise from doing so practically, our next step is to provide an overview of data sources that either have been used, or could possibly be used for the purposes of measurement. In Table 1a) and Table 1b) below, we document which surveys contain which sources of income, which in turn would affect the potential inequality measures that each survey would generate. We separate the income sources into individual and household level, although this is done primarily for the sake of presentation. Indeed, practically one would always consider the survey in its entirety, and one often aggregates up individual level incomes to the household level prior to calculating the per capita values that feed into the inequality calculations.

**Table 1a: Income information in surveys that could be used for measuring inequality (Household Level)**

Survey name	Date	HH total income	HH remittances	HH implicit rent	HH rental income	HH agriculture	HH other
SALDRU/PSLSD	1993		Yes	Yes	Yes	Yes	
OHS	1993						
OHS	1994						
	1995						
	1996		Yes				Yes
	1997						
	1998						
	1999	Yes					
IES	1995	Yes		Yes	Yes	Yes	Yes
	2000	Yes			Yes	Yes	Yes
	2005/06	Yes		Yes	Yes		Yes
	2010/11			Yes			
Census	1996		Yes				Yes
	2001						

<sup>8</sup> See the media release on the 22<sup>nd</sup> of January 2016, at <http://www.sars.gov.za/Media/MediaReleases/Pages/22-January-2016---Tax-returns-give-insight-into-economic-performance.aspx> . Website accessed on 31<sup>st</sup> January 2016.

	2011					
Community Survey	2007					
LFS	2000 Feb					
	2000 Sept					
	2001 Feb	Yes				
	2001 Sept					Yes
	2002 Feb					
	2002 Sept		Yes			Yes
	2003 Mar					
	2003 Sept		Yes	Yes		Yes
	2004 Mar			Yes		
	2004 Sept		Yes	Yes		Yes
	2005 Mar			Yes		
	2005 Sept		Yes			
	2006 Mar					
	2006 Sept					
	2007 Mar					
	2007 Sept					
QLFS*	2008-2015					
GHS	2002					Yes
	2003					Yes
	2004			Yes		Yes
	2005			Yes		Yes
	2006			Yes		Yes
	2007			Yes		Yes
	2008			Yes		Yes
	2009		Yes			Yes
	2010		Yes			Yes
	2011		Yes			Yes
	2012		Yes			Yes
	2013		Yes			Yes
	2014		Yes			Yes
NIDS wave1	2008	Yes		Yes		Yes
NIDS wave2	2010/11	Yes		Yes		Yes
NIDS wave3	2012	Yes		Yes		Yes

**Table 1b: Income information in surveys that could be used for measuring inequality (Individual)**

Survey name	Date	Individual level income								
		Aggregat e	Wage s	Profi t	Benefit s	Grant s	Ren t	Interes t	Agricultur e	Othe r
SALDRU/PSLSD	1993		Yes	Yes	Yes	Yes				
OHS	1993		Yes	Yes		Yes				Yes
OHS	1994		Yes	Yes		Yes				Yes
	1995		Yes	Yes		Yes				Yes
	1996		Yes	Yes		Yes				Yes
	1997		Yes	Yes		Yes				Yes
	1998		Yes	Yes		Yes				Yes
	1999	Yes	Yes	Yes		Yes				Yes
IES	1995	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
	2000	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
	2005/06	Yes	Yes	Yes		Yes	Yes	Yes		
	2010/11		Yes	Yes	Yes	Yes	Yes			Yes
Census	1996	Yes								
	2001	Yes								
	2011									
Community Survey	2007	Yes				Yes				
LFS	2000 Feb		Yes	Yes		Yes				Yes
	2000 Sept		Yes	Yes		Yes				Yes
	2001 Feb		Yes	Yes		Yes				Yes
	2001 Sept		Yes	Yes		Yes				Yes
	2002 Feb		Yes	Yes		Yes				Yes
	2002 Sept		Yes	Yes		Yes				Yes
	2003 Mar		Yes	Yes		Yes				Yes
	2003 Sept		Yes	Yes		Yes				Yes
	2004 Mar		Yes	Yes		Yes				Yes
	2004 Sept		Yes	Yes		Yes				Yes
	2005 Mar		Yes	Yes		Yes				Yes
	2005 Sept		Yes	Yes		Yes				Yes
	2006 Mar		Yes	Yes		Yes				Yes
	2006 Sept		Yes	Yes		Yes				Yes
	2007 Mar		Yes	Yes		Yes				Yes
	2007 Sept		Yes	Yes		Yes				Yes
QLFS*	2008- 2015									
GHS	2002		Yes	Yes		Yes				Yes
	2003		Yes	Yes		Yes				Yes
	2004		Yes	Yes		Yes				Yes
	2005		Yes	Yes		Yes				Yes
	2006		Yes	Yes		Yes				Yes

	2007		Yes	Yes		Yes				Yes
	2008		Yes	Yes		Yes				Yes
	2009		Yes	Yes		Yes				
	2010		Yes	Yes		Yes				
	2011		Yes	Yes		Yes				
	2012		Yes	Yes		Yes				
	2013		Yes	Yes		Yes				
	2014		Yes	Yes		Yes				
NIDS wave1	2008		Yes							
NIDS wave2	2010/11		Yes							
NIDS wave3	2012		Yes							

Notes:

1. This table is constructed based on information included in the questionnaires.
2. Some surveys have additional derived income variables that are included in the public release.
3. There are some surveys that include only indicators for whether some type of income source was received. In some cases, these values can be inferred with confidence, e.g. the Old Age Pension and Child Support Grant. In some cases, such as remittances, this would be challenging.
4. Some surveys ask for income values, some ask for responses in categories, and some ask first for values, and then for categories if the values are not provided.
5. Some surveys do not ask about implicit rent, but do ask about rental costs amongst households that do pay rent. One could plausibly use such information to calculate the value of implicit rental income.
6. "Other" categories frequently would include private pensions, unemployment benefits and personal remittances.
7. The 2011 Census has no income information.
8. Skip patterns in some surveys make calculating inequality very difficult. For example, in the LFS & 2002 GHS data, questions about grant receipts are restricted to people without employment.
9. The Quarterly Labour Force surveys (QLFS) are generally not suitable for inequality analysis. Earlier waves did not ask about wages or profit from self-employment. Later waves (QLF2010:3 onwards) have done so, but these are removed from the data prior to public release. One could potentially use the relevant Labour Market Dynamics Study data (2011-2014) if one were interested primarily in earnings inequality.

What we can observe from Tables 1a) and 1b) is that there is a substantial amount of variation in terms of the types of income that different surveys capture. There is also variation in terms of how these sources of income are captured, with the possibility of income values, income brackets or simply having indicator values for the receipt of some type of income. All of these result in differences in measured inequality, in addition to potential differences due to the timing of the surveys as well as regular sampling variation. Thus, one needs to be careful in interpreting a particular measure of income inequality. This caution becomes even more relevant when considering changes in inequality over time, as what appear to be trends will also be capturing differences across the various survey instruments.

#### *Section 2.4: Existing empirical literature on measurement in South Africa*

What do we know about the levels and trends in inequality in South Africa? To date, a substantial body of literature has evolved primarily concerned with measuring inequality. This is sometimes done in a static sense, and sometimes in a relative sense to obtain a measure of the direction, degree and rate at which inequality has been changing.

One of the earlier papers to look at wage differentials was a paper by Natrass (1977). She analysed how Black and White wage differentials evolved from the 1960's onwards. Her main finding was that the real wages of both groups grew at approximately the same rate between 1960 and 1970, but that they grew by 6.6% amongst Black workers but only 1% amongst White workers between 1970 and 1975. Racial inequality in wages thus decreased in that time period.

Whiteford and McGrath (1994) point out that the first attempts to measure inequality using personal income from the Census goes back to data from 1970. Whiteford and Seventer (2000) provide three measures of the Gini coefficient, one for 1975, 1991 and 1996 each, and estimate these at approximately 0.68, 0.68 and 0.69 respectively.<sup>9</sup>

This takes us firmly into the post-apartheid era in terms of literature. Leibbrandt, Borat and Woolard (2001), provide a representative paper from early post-apartheid literature. The authors make use income data from the Income and Expenditure survey of 1995 (IES95), and also compare their results to analogous estimates from the 1993 PSLSD survey. The authors analyse per capita equivalized income inequality using a variety of techniques. They first consider the importance of race in understanding aggregate inequality in South Africa, using a variety of measures that allow for the decomposition of aggregate inequality into within race and between race components. While the magnitude of the relative contribution of these two components is ambiguous depending on which dataset and which measure is being used, the contribution of between race inequality to aggregate inequality is very high by international standards.

The authors then focus on possible mechanisms that might explain the high levels of observed inequality, namely the labour market, asset ownership and welfare. Of these, the labour market drives inequality the most. Wage income contributes about 67% of inequality, and almost half of this

---

<sup>9</sup> As cited in Leibbrandt, Woolard and Woolard (2007).

is driven by households with no wage income. At the same time, state transfers reduce poverty but have at best a very small impact on inequality.<sup>10</sup> The overall point, after much investigation, is that wage inequality is by far the major contributor to income inequality, and that an important factor to consider is unemployment/non-employment.

A second important paper, which is representative of papers that look at changes in the measurement of inequality over time in South Africa is the one entitled "Not Separate, Not Equal: Poverty and Inequality in Post-Apartheid South Africa", by Hoogeveen and Ozler (2005). In essence, they take the paper by Leibbrandt, Bhorat and Woolard forward by comparing income and expenditures from the IES95 to the IES00, which was conducted in 2000. They find that inequality increased during this period, mostly due to an increase in the inequality measured within the African subpopulation. For example, for the entire sample the mean log deviation increased from 0.56 to 0.61 during this period, while the Gini coefficient increased from 0.565 to 0.577. For Africans, the mean log deviation increased from 0.37 to 0.436. The share of between group inequality decreased from 38.3% to 33.2%.<sup>11</sup>

The authors also investigate how much of the observed changes are due to changes in endowments as compared to the price of endowments. One observation they make is that the returns to education increased particularly for Africans with high levels of education. They posit that this is a major component in understanding the increased inequality within Africans, since the increase in educational endowments amongst Africans was relatively small. This in turn explains the observed change in overall inequality. One of their concluding policy recommendations is to 'focus on improving quality educational attainment for the poor'.

There are several other papers that have attempted to measure poverty and inequality in South Africa. These include the papers by Simkins (2004), Leibbrandt, Levinsohn and McCrary (2010), Ardington, Lam, Leibbrandt and Welch (2005), Leibbrandt, Woolard, Finn and Argent (2010), van der Berg and Louw (2004), van der Berg, Louw and Yu (2008) and Yu (2010), and even this list is not exhaustive. They differ in terms of the datasets employed, the assumptions underlying how to deal

---

<sup>10</sup> Note that in 1995, a number of current grants, particularly the Child Support Grant, had not yet been introduced.

<sup>11</sup> In contrast, Leibbrandt, Woolard and Woolard (2007) looking at a similar time period but using the 1996 and 2001 Census data, estimate Gini coefficients of 0.68 and 0.73 respectively. They thus estimate similar trends but substantially different levels of inequality.

with missing data and whether the analysis is done at the household or individual level. In terms of findings, there remains debate about the actual levels of inequality and the rate at which it is changing.

van der Berg (2010), in the literature review section of his paper, succinctly summarizes the state of the literature in South Africa as follows: "Thus there was probably a strong upward trend in inequality as measured by the Gini coefficient in the second half of the 1990s, and largely stable inequality since. Inequality is clearly very high, but how high is not clear... Ginis simply differ greatly even for the same year due to data comparability and measurement issues".<sup>12</sup> This is an accurate reflection.

In summation, we can say that our current understanding of inequality dynamics in the recent past is that income inequality was very high, and has remained so or even increased over the past fifteen years.

#### *Section 2.5: A brief summary of levels and trends in income inequality in other developing countries*

How does South Africa's experience and recent developments compare to that of other countries? It is widely accepted that developing countries have substantially higher levels of income inequality than developed ones, and this motivates our decision to focus on developing countries.

This brief discussion is summarized from Alvaredo and Gasparini (2013).<sup>13</sup> The authors acknowledge the data related difficulties inherent in such an exercise, and use multiple data sources to try to ensure comparability. Their first set of results is to estimate the within country Gini for consumption amongst the 122 countries included in their sample, in (or close to) the year 2010.

In their sample of developing countries, the mean Gini is 39.8 while the median is 39.2. Half of all countries have values between 35 and 45. Only seven Eastern European countries have Gini coefficients below 30, while five sub-Saharan African (SSA) countries have a value above 55. Of these, the highest is South Africa's, at 63.1. In addition, they note that the rankings are stable over time, and that the sub-Saharan region has the highest number of highly unequal countries, with

---

<sup>12</sup> Pp. 12.

<sup>13</sup> The authors note that this paper corresponds to chapter 10 of the *Handbook of Income Distribution*, volume 2, edited by A. Atkinson and F. Bourguignon (2014).

eight out of the ten worst performing countries coming from this region. The regional mean and median are similar to that of the Latin American Countries (LAC), but the within group dispersion is greater in the SSA than the LAC.

In terms of trends, changes in inequality have varied across the different geographical regions of the developing world over the period from 1990 to 2010. The mean Gini coefficient in the LAC increased more than two points in the 1990s, and then dropped in the 2000s by a larger amount, while it was mostly stable in SSA. In contrast, over the same time period the Middle East and North African (MENA) countries experienced a sustained decrease in inequality, while there was a slight increase (>2 points) and a sharp increase (>6 points) in Asia and Eastern Europe respectively.

### Section 3: Theories of inequality

Kuznets (1955) presents a model of development where everyone is fully employed in a low wage agricultural sector. As industrialization takes off, workers are drawn to the cities where there are higher paying jobs. This generates inequality in incomes. Over time, more and more workers move to the cities, and the scarcity of labour in factories goes down, thus reducing the urban wages. At the same time, there is more/better land per capita in the rural areas, and this raises the agricultural wage. Thus, inequality starts out low, gets larger as a country begins to develop, and eventually gets smaller and smaller as the rural population has less of an incentive to migrate towards better paying jobs in the cities. In this model, inequality is an outcome of development, and, even if it is long-run, it is also a transitory phenomenon, so it may not be a policy imperative.

In similar vein, Harris and Todaro (1970) also present a model of urban-rural migration. Their primary concern is about urban unemployment rates, but it implicitly also speaks to inequality. The primary contribution of the Harris-Todaro model is that when wages are substantially higher in urban areas, then rural to urban migration will continue to be rational even if there are substantially greater levels of unemployment in urban areas. This is because people would consider the expected payoff of migration, which includes some adjustment for risks of unemployment. This causes an equilibrium unemployment rate in urban areas even though everyone in rural areas is assumed to have employment. Where this has an impact on inequality is that, in equilibrium, we then have three groups: A relatively low wage rural group, an unemployed urban group with no wage income, and a high earning urban group who have employment. Thus, development and urbanization might also be coincident with increases in inequality and unemployment.

### *Economic consequences of inequality*

Although Kuznets did not say this, following on from him has been the view that inequality is viewed as a necessary characteristic if one wants to develop optimally. In this framework, inequality is what motivates people to take risks and to work hard, and designing policies to limit these will necessarily induce a distortion in the effort levels and investment patterns in an economy. This has been widely described as the ‘Equality and Efficiency tradeoff’ (Okun, 2015). As such, acting to reduce inequality is undesirable from a dynamic growth perspective.

At the same time, a growing body of theoretical literature emphasizes some of the negative economic implications of highly unequal societies. We discuss some of the models relating to these adverse effects in more detail below, but it is worth noting up front that the issue is more nuanced than a simple blanket statement that “Inequality is bad/ Inequality is good”. Evaluating the overall effects of inequality requires a careful consideration of both the efficiency implications in terms of incentives, together with the distortionary effects described below, and these countervailing effects need to be weighed against each other simultaneously.

It really does matter what the prevailing levels of inequality are, as well as what the existing levels of taxation and re-distribution are. In the South African case, where inequality is exceptionally high and is likely to remain so for a long time unless there is a successful concerted effort to reduce it, it is very difficult to argue that greater equality would cause an undesirable shift in how the economy evolves. In addition, given the pernicious historical context that which we are emerging from, one could argue that inequality in South Africa needs to be reduced as a moral imperative, regardless of the economic implications.

### *More recent theories of inequality (and their implications for allocative efficiency and development)*

A number of theoretical models have been developed that challenge the equity-efficiency hypothesis. To some extent, these models developed due to the mixed empirical support for the Kuznets curve, and also due to conflicting evidence about the supposed links between growth and inequality. What these models tend to have in common are either market imperfections due to credit constraints, imperfect information and moral hazard, political rent seeking behaviour, or

externalities. A thorough discussion of these models is beyond the scope of this paper<sup>14</sup>, but we highlight a few illustrative examples that might have some relevance to the South African context.

Benabou (1993) provides a model of natural segregation by income group into neighbourhoods, which is driven by property prices. In his model, schools are funded by local property taxes, and so the poorer neighbourhoods have less well-resourced schools. There is also an externality in those schools as the poorer students are more likely to have less well educated parents, and this reinforces the lack of resources in the poorer schools. Together, this results in a dynamic advantage for the children of the wealthier parents, which causes inequality to remain stable over time. Moreover, there is an inefficiency cost to society as talented youth from poorer areas may not develop fully, while less talented youth from the richer areas, who have less innate potential, might get the high skilled levels and better paying jobs. Even if a few exceptionally talented youth do manage to do well at school and transcend their neighbourhood disadvantage, the inequality remains stable (i.e. structural inequality) because the few highly skilled youth from the poorer areas will eventually buy property in the rich area, thus displacing the few uneducated youth who grew up in the rich area. So there may be some churning, but the overall structure of the inequality is stable.

Mookherjee and Ray (2003) present a theoretical model of dynastic inequality that arises due to externalities in pay across occupations. If credit markets are imperfect, such that poorer people cannot borrow or pay more to access credit, then persistence of inequality of income and consumption is inevitable in any steady state. This model has a problematic implication in that, when inequality is high because skills are scarce, then obtaining skills becomes more difficult. This occurs because the wages required to keep a skilled person in the teaching profession will also be high, and thus it becomes even more likely that the children of poorer parents cannot obtain the high skills level.

Hoff and Stiglitz (2001) consider why some people are land owners and some people remain share croppers. The land owners earn enough of a rent, and there is only a finite amount of land, such that the steady state can remain stable. In such an environment, a once-off redistribution of land or property rights can have a permanent effect on the steady state of inequality.

---

<sup>14</sup> A more complete discussion can be found in Pellicer et al (2011).

There is a large literature on how political rent seeking (i.e. lobbying) distorts electoral outcomes (see for instance, the review on redistribution by Boadway and Keen 2000). In the standard models of lobbying, the policy is the outcome of lobbying efforts of different groups instead of the outcome of voting. The richer pivotal “voter” in this case, is a lobby group that contributes to electoral campaigns or exerts influence on the government. In Becker's (1983) “influence function”, for instance, political influence depends on how much money a lobby spends. Sensibly, the rich will tend to be more successful in their lobbying activities than the poor. This is so for two main reasons: First, because of group size. Being a smaller group than the poor, the rich will overcome free-rider problems more easily than the poor (Olson 1965). In addition, the smaller group size allows them to distribute higher per capita gains to their members (Peltzman 1976), thus motivating group members better. Second, in a world of capital imperfections, the rich can afford contributions more cheaply (see Esteban and Ray 2006).

In the South African context, we can imagine how neighbourhood stratification impacts on inequality. The wealthier students do attend private and semi-private schools, and perform better on average at their schooling. They are also better able to access tertiary schooling, and are more likely to graduate. The slow pace of land reform has received renewed attention, and the possible capture of the state by political and economic elites is a very real threat to the subsequent evolution of our economy and society.

## Section 4: Policy relevant research

### 4.1 Taxes and Transfers

When one considers what policies can be used to reduce inequality, the immediate thought goes to taxes and transfers. This is because they impact directly on the income distribution by taking money away from some people and redistributing these funds to other people. A second component of fiscal policy relates to publicly provided goods. These take the form of indirect transfers, such as subsidised schooling or hospitals, and also affect the income distribution. Studies that look into the redistributive effects of the indirect transfers are called fiscal incidence studies.

A number of fiscal incidence studies have been done. Van der Berg (2001) notes that even under Apartheid there was a limited amount of redistribution from Whites to Blacks. Van der Berg (2009) conducted such a study for the National Treasury using 2006 data, and found that resources are strongly concentrated towards the bottom of the income distribution. In addition, direct transfers

via grants were well targeted and had increased substantially between 1995 and 2006. Subsequent studies by Leibbrandt et al (2012) and most recently by Inchauste et al (2015) confirm the general point that tax policy in South Africa is progressive, and public spending is redistributive. There seems to be a somewhat nuanced position by the authors of the most recent study; namely that while the current fiscal policy does reduce inequality substantially, there is limited room for further redistribution in an era of slow growth, high debt and a widening fiscal deficit. Thus, further reductions will have to come from an improved quality of public services, and more inclusive growth.

#### 4.2 Education

While education is not considered to have a direct impact on the income distribution, a considerable body of work has emerged in terms of how it plays a role in income inequality. This is primarily motivated by observing that highly educated people tend to have high employment rates and high wage rates. For example, Lam (1999) points out a convex relationship between educational attainment and earnings in South Africa using 1995 data. Keswell (2010) documents an increase in the rates of return to high levels of education between 1993 and 2002.

On the supply side, Fiske and Ladd (2004) point to the challenges facing South Africa in its challenge to overcome an educational system that was intentionally unequal in terms of resources, quality and access, and has evolved over several generations. More recently, Spaul (2013) uses multiple national and international tests to argue that there remains a highly dualistic schooling system in South Africa, and that this is strongly correlated with income.

Branson et al (2009) use LFS data from 2000 to 2007, and find that returns to education, particularly at the tertiary level, had increased over this time period. At the same time, the ability to attend college is constrained both by one's prior academic training and then, conditional on being eligible to attend college, by the affordability of such an investment. Pellicer and Ranchhod (2012) make this link explicit by using a mixture of Cape Area Panel Study (CAPS) and NIDS data and conclude that South Africa may well be in an inequality trap on the human capital dimension. Thus, the evidence indicates that education policy should also be considered as part of an inequality policy.

## Section 5: Ways forward

Overall, our review indicates that the South African literature on income inequality has indeed come a long way in the past twenty years. That this period overlaps with the democratic era is probably

not coincidence, as this is also partly a function of the availability of good quality and nationally representative data. Indeed, the bulk of work has been empirical work relating to measurement of trends and levels of inequality. Looking forward, this strand of research is likely to continue. New and timely data will continue to be generated, and it is important to be aware of the evolving trends in inequality. In addition, better or different datasets and data sources may help to gain further insights. Of particular interest at this moment is the availability of tax records that can complement our survey data.

There is also a growing literature that explicitly links inequality and education. This is promising as education policies could help with inequality, and there appears to be general agreement on the limits of fiscal redistribution through taxes and transfers. Other common topics that have been explored elsewhere, but are as yet under-developed in the South African context, are on the intersection of income inequality and health outcomes, and the intersection of inequality and demography.

On the other hand, our literature to date could probably be improved in terms of our understanding of the long run effects of our Apartheid history on contemporary inequality. How did the Native Lands Act affect property rights and wealth accumulation, and how do those effects manifest in today's economy? How did the restrictions on mobility due to the Pass Laws, or the enforced segregation of the cities via the Group Areas Act, affect development? Similar questions can be asked about the need for cheap labour for agriculture and mining. These questions in turn lead us to consider issues of market concentration, price rigidity and collusion; both in terms of their origins as well as their contemporary implications. These questions are both interesting intellectually, and potentially very important in providing insights into the pathway towards a more egalitarian society.

Another core area where we are found wanting relates to the labour market. There is broad consensus that the labour market is the primary institution through which our exceedingly high levels of inequality are maintained. Both the high unemployment rate, as well as the wage distribution conditional on employment, are significant factors in accounting for aggregate inequality. Yet, as labour economists, we do not have adequate explanations for the sustained high rates of unemployment. South Africa has an exceedingly high and persistent youth unemployment rate; we struggle to explain the relatively low levels of informal sector activity; and racial differentials continue to be observed in the data. All in all, it seems unlikely that we can address the

inequality challenge without also addressing the labour market issues, and fruitful research might be undertaken in this direction.

Another area where we may gain some useful insights would be to understand savings behaviour, debt and capital accumulation better. Several theoretical models on the persistence of inequality view this as a primary mechanism through which income differentials are maintained. Yet, while there does exist some literature on savings and debt, this has not yet been linked with the evolution of inequality in South Africa.

Finally, there may be scope for productive work in some different dimensions. These could arise due to a shift in focus, or a shift in methodology. For example, there is very little theoretical work on the persistence of inequality in SA. It might well be that we as a collective do not have much to contribute to a global knowledge production effort in this regard, but there may be insights that one can gain from such an extreme environment which can illuminate similar issues in less extreme circumstances on a global scale. Alternatively, there is probably also room for work to be done on other frontiers, including social cohesion, social externalities and political economy. These might require different methodological approaches, as survey data are unlikely to yield much information on these topics, but they may prove to be rewarding to researchers actively involved in this field.

## References

- Alvaredo, F., & Gasparini, L. (2013). Recent trends in inequality and poverty in developing countries. Documentos de Trabajo del CEDLAS.
- Ardington, C., Lam, D., Leibbrandt, M., & Welch, M. (2005). The sensitivity of estimates of post-apartheid changes in South African poverty and inequality to key data imputations. CSSR and SALDRU.
- Atkinson, A. B. (2015). *Inequality: What Can Be Done?* Harvard University Press.
- Becker, G. S. (1983), A Theory of Competition among Pressure Groups for Political Influence, *The Quarterly Journal of Economics*, 98, 371-400.
- Benabou, R. (1993). Workings of a City: Location, Education, Production. *Quarterly Journal of Economics*, 108, 619-653.
- Boadway, R. & Keen, M. (2000), *Redistribution, Handbook of Income Distribution*, Elsevier.
- Branson, N., Leibbrandt, M., & Zuze, T. L. (2009). *The demand for tertiary education in South Africa. Final report to the Centre for Higher Education Transformation.*
- Esteban, J. & Ray, D. (2006), Inequality, Lobbying, and Resource Allocation, *American Economic Review*, 96, 257-279.
- Fiske, E. B., & Ladd, H. F. (2004). *Elusive equity: Education reform in post-apartheid South Africa.* Brookings Institution Press.
- Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: a two-sector analysis. *The American economic review*, 60(1), 126-142.
- Hoff, K., & Stiglitz, J. (2001). Modern economic theory and development. *Frontiers of development economics: The future in perspective*, 389.
- Hoogveen, J. G. M. & Ozler, B. (2006). Not separate, not equal: Poverty and inequality in post-apartheid South Africa, William Davidson Institute Working Paper, No. 739.
- Inchauste, G., Lustig, N., Maboshe, M., Purfield, C., & Woolard, I. (2015). *The distributional impact of fiscal policy in South Africa.* World Bank Group. Policy Research Working Paper 7194.
- Keswell M. (2010). Education and Racial Inequality in Post Apartheid South Africa. In *Growing gaps: Educational inequality around the world.* Attewell, P., & Newman, K. S. (Eds.) Oxford University Press.
- Kuznets, S. (1955). Economic growth and income inequality. *The American economic review*, 45(1), 1-28.
- Lam, D. (1999). *Generating Extreme Inequality: Schooling, Earnings, and Intergenerational Transmission of Human Capital in South Africa and Brazil.* PSC Research Report No. 99-439

Leibbrandt, M., Bhorat, H. and Woolard, I. (2001). Household inequality and the labor market in South Africa. *Contemporary Economic Policy*, 19(1), p.73.

Leibbrandt, M., Finn, A., & Woolard, I. (2012). Describing and decomposing post-apartheid income inequality in South Africa. *Development Southern Africa*, 29(1), 19-34.

Leibbrandt, M., Levinsohn, J. A., & McCrary, J. (2010). Incomes in South Africa after the fall of apartheid. *Journal of globalization and development*,1(1).

Leibbrandt, M., & Woolard, I. (1999). Household incomes, poverty and inequality in a multivariate framework. *Development Policy Research Unit*.

Leibbrandt, M., Woolard, I., Finn, A., & Argent, J. (2010). Trends in South African Income Distribution and Poverty since the Fall of Apartheid (No. 101). OECD Publishing.

Mookherjee, D., & Ray, D. (2003). Persistent inequality. *The Review of Economic Studies*, 70(2), 369-393.

Nattrass, J. (1977). The narrowing of wage differentials in South Africa. *South African Journal of Economics*, 45(4), pp.252-268.

Okun, A. M. (2015). *Equality and efficiency: The big tradeoff*. Brookings Institution Press.

Olson, M. (1965), *The Logic of Collective Action*, Cambridge, MA, Harvard University Press.

Pellicer, M., & Ranchhod, V. (2012). Inequality traps and human capital accumulation in South Africa. SALDRU Working Paper No. 86.

Pellicer, M, Ranchhod, V., Sarr, M, and Wegner, E, .(2011). Inequality Traps in South Africa: An overview and research agenda. A Southern Africa Labour and Development Research Unit Working Paper Number 57. Cape Town: SALDRU, University of Cape Town

Peltzman, S. (1976), Toward a more general theory of regulation, *Journal of Law and Economics*, 211-240.

Pickett, K., & Wilkinson, R. (2009). *The Spirit Level: Why more equal societies almost always do better*. London: Allen Lane.

Simkins, C. (2004). "What happened to the distribution of income in South Africa between 1995 and 2001?" Unpublished draft. [Online.] Available: [www.sarprn.org](http://www.sarprn.org)

Spaull, N. (2013). *South Africa's education crisis: The quality of education in South Africa 1994-2011*. Johannesburg: Centre for Development and Enterprise.

Treiman, D.J., McKeever, M. and Fodor, E. (1996). Racial differences in occupational status and income in South Africa, 1980 and 1991. *Demography*, 33(1), pp.111-132.

Van der Berg, S. (2001). Trends in racial fiscal incidence in South Africa. *South African Journal of Economics*, 69(2), 243-268.

Van der Berg, S. (2009). Fiscal incidence of social spending in South Africa, 2006. A report to National Treasury, 28.

van der Berg, S. (2010), Current poverty and income distribution in the context of South African history, Stellenbosch Economic Working Papers, No. 22/10.

Van der Berg, S., & Louw, M. (2004). Changing patterns of South African income distribution: Towards time series estimates of distribution and poverty. *South African Journal of Economics*, 72(3), 546-572.

Van der Berg, S., Louw, M., & Yu, D. (2008). Post-transition poverty trends based on an alternative data source. *South African Journal of Economics*, 76(1), 58-76.

Whiteford, A.C. & McGrath, M.D. (1994) *Distribution of Income in South Africa*, Pretoria: Human Sciences Research Council.

Whiteford, AC & Van Seventer, DE (2000) South Africa's changing income distribution in the 1990s, *Journal of Studies in Economics and Econometrics*, 24(3): 7–30. World Bank (2003) *World Development Indicators*. Washington, USA.

Yu, D. (2010). Poverty and inequality trends in South Africa using different survey data. Stellenbosch Economic Working Paper No. 04/2010.