A PROFILE OF POVERTY AND INEQUALITY IN MPUMALANGA

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1. INTRODUCTION

Widespread poverty remains a characteristic of South African society fifteen years after the end of apartheid. The fight against poverty is being waged at all levels of government: national, provincial and local. However, in order to address the plight of the poor by designing effective and efficient policies, it is essential that policymakers understand the various and varied issues and problems facing their targeted groups.

Much of our understanding of the situation of South Africa's poor comes from the analysis of household survey data, including surveys conducted by Statistics South Africa and those conducted by other agencies and researchers. The purpose of the paper is to provide an overview and socio-economic profile of Mpumalanga by utilising and analysing the Income and Expenditure Survey (IES) of 2000 and 2005. These detailed surveys enable the analyst to quantify poverty and inequality and estimate changes over time, both nationally and at provincial level.

Section 2 presents an analysis of poverty within Mpumalanga and tracks changes between 2000 and 2005, using standard poverty measures. Further, since the actual value of a poverty line is often contentious, the section assesses changes in poverty without reference to any explicitly stated poverty line. Section 3 investigates trends in inequality and decomposes various inequality measures to shed light on the processes driving overall inequality within Mpumalanga. In trying to understand the critical interactions between economic growth, poverty and inequality, section 4 uses growth incidence curve analysis to determine whether the positive growth rates recorded since 2000 have indeed filtered through to benefit the poorest members of our society. Finally, section 5 presents some policy considerations and section 6 concludes.

2. A POVERTY PROFILE: 2000-2005

2.1 Measuring Poverty

While poverty remains one of the most pressing challenges facing South Africa, and indeed many other countries around the world, the measurement of poverty remains a complex task, made more difficult by the continuing debate surrounding the refinement of our understanding of what it means for an individual to be poor. Our earliest conceptualisation of poverty, stemming from the work of Alexander McDougall, Charles Booth, Seebohm Rowntree and others starting Gillie 1996is one of income poverty: individuals are considered to be poor if their incomes fall below a certain minimum level. Over time, however, shortcomings with income-based measures were identified and alternative or complementary measures have arisen. The greater variability of income over time, for example, is one of the reasons why expenditure-based poverty lines are now preferred over income-based lines.

Today, it is generally accepted that money-metric poverty lines (i.e. those based on income or expenditure and expressed in monetary terms) are too limited in scope and greater emphasis is being placed on broader indicators of poverty that consider access to services and the ability of individuals to engage on an equal footing in their societies. These measures, however, tend to be more complex to derive and are data-intensive. For our purposes here, we have focused on money-metric poverty lines, based on per capita household expenditure.

In constructing a poverty profile for the province of Mpumalanga, we therefore use the incomes approach, which defines poor households as those who fall below a certain threshold, or poverty line. Currently, unlike many countries, South Africa does not have an official poverty line. As a result, researchers and policymakers have derived various cut-offs below which individuals are designated to be poor. These lines often measure different aspects of poverty and are generally constrained by the respective datasets upon which they are based. For this paper, we use two poverty lines – an upper-bound line of R322 per capita per month and a lower-bound, or ultrapoverty line, of R174 per capita per month, equivalent to two dollars a day per capita, used by Deaton (1997) and commonly used in South African literature. In order to ensure comparability over time, the erosion of purchasing power resulting from inflation is compensated for by deflating the poverty line using the consumer price index published by Statistics South Africa.

To derive an aggregate measure of poverty, we employ a class of decomposable measures pioneered by Foster *et al.* (1984) commonly referred to as the FGT measures of poverty. The measure is expressed as: [1]

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z-y_i}{z}\right)^\alpha$$

for $\alpha \geq 0$ and where z is the poverty line (in Rands), y_i is the welfare indicator for household (or individual) i (i.e. expenditure per capita in Rands), and α is the poverty aversion measure. The poverty aversion measure, α, denotes the extent of the weighting given to individuals below the poverty line, the higher the value of α, the greater the weighting given to the poor, the more averse the measure is to poverty. Setting $\alpha = 0$ yields the headcount poverty index or headcount poverty rate (P_0). This is the commonly used poverty rate and indicates what proportion of the population is poor. Setting $\alpha = 1$ yields the poverty gap or depth of poverty measure (P_1), while setting $\alpha = 2$ yields the squared poverty gap (P_2), also referred to as the severity of poverty. The poverty gap measures the average distance of poor individuals from the poverty line.

In any analysis of poverty, there are two important factors to consider, particularly when one engages with the numbers from a policymaking perspective. Firstly, it is important to know which group is most often poor. Stated differently, it is important to know which groups have the highest poverty rates as a very high rate of poverty may severely weaken a community and render them vulnerable to shocks. Secondly, it is important to know which groups constitute the largest share of the poor, since it is these groups that tend to drive the average poverty figures. Thus, policies need to also target those groups that constitute a large proportion of the poor if their objective is to reduce overall poverty. This is an important issue to consider in terms of demographic groupings, but it also has particular resonance in terms of geography. Provincial policymakers are, therefore, often faced with a choice of targeting a region that has the highest rate of poverty (thereby reducing

[1] All poverty and inequality measures are individual measures, calculated using per capita total household expenditure. The 2005 the total household expenditure variable was created by adding monthly capital payments and interest on mortgage bonds to total household consumption. Imputed rent, Income tax payments and other consumption items, which were not in the IES 2000, were excluded from the total household consumption variable. The items were excluded from the total household expenditure variable so that it could be compared with the total household expenditure variable constructed using the IES2000 data source. Per capita total household expenditure was created by dividing total household expenditure by the number of people in the household (household size).

the excesses of poverty locally, but doing little to affect the provincial poverty rate) or a region that has the highest share of poverty (thus lowering the local and provincial rate relatively easily, but neglecting areas in greatest need for intervention). The analysis below will therefore ensure that both poverty rates and poverty shares are presented.

2.2 Data

The main data sources that are used are 2000 and 2005/6 Income and Expenditure Survey datasets published by Statistics South Africa. For the poverty analysis, unless otherwise specified, we use per capita expenditure data at the household level, as opposed to income data, since the latter is considered an inferior proxy of welfare compared with the former. Considerable care was taken when aggregating the expenditure variable to ensure that the comparability across time was maintained. A consequence of constructing two comparable expenditure variables is that the poverty results reported in this paper are higher than those reported in other research and this should consequently be kept in mind when making comparisons with other research. Where population weights are lacking and where appropriate, the data has been weighted by the household weight multiplied by the household size. The sample size for Mpumalanga is 2 282 households in the IES 2000 and 1 687 households in the IES 2005/6. The estimates that are reported in bold are statistically different from the overall poverty level and those with asterisks are statistically significant over time at the 95 percent level of confidence.

2.3 Poverty in Mpumalanga

Approximately three out of every five residents (61.6 percent) of Mpumalanga were poor in 2005 when using the upper bound line of R322 in 2000 prices (Table 1). This compared somewhat poorly with the rest of the country: 53.8 percent of all South Africans were poor based on the same poverty line in 2005. While the poverty rate for South Africa as a whole saw a statistically significant decline between 2000 and 2005, from 59.7 percent to 53.8 percent, a decline of almost six percentage points, that for Mpumalanga declined only marginally, from 62.9 percent to 61.6 percent. Poverty, using the lower bound line of R174 per capita per month, declined even more dramatically nationally than was the case for the upper bound line, from 38.6 percent to 27.9 percent, or 8.7 percentage points, over the period. However, the provincial poverty rate remained almost unchanged at 35.2 percent in 2005.

South Africa's history of exclusionary race-based policy is reflected in the differential poverty rates for Africans and Whites.[2] Approximately 63 percent of Africans in South Africa were poor in 2005 according to the upper bound poverty line, compared to a mere 0.7 percent of Whites. The national poverty rates for Africans and Whites based on the lower bound poverty line were, respectively, 33.3 percent and 0.2 percent. Irrespective of the poverty line used, national headcount poverty rates saw statistically significant declines between 2000 and 2005 for both Africans and Whites. While the racial differentials in poverty rates on both the upper and lower bound poverty lines are evident in Mpumalanga, no statistically significant change in racial poverty rates was observed over the period.

The poverty gap, P_0, refers to the mean distance that the poor are from the poverty line. Over the period, the poverty gap declined from 32.2 percent to 24.6 percent in South Africa as a whole, using the upper bound poverty line. Similarly, a large decline in the poverty gap was observed using the lower bound line: in 2000, the average poor person had expenditures that were 16.5 percent below the lower bound poverty line, while in 2005 the average poor person was just 9.6 percent below that line, an improvement of almost seven percentage points. These statistically significant changes were, at a national level, driven by substantial declines in the poverty gap for Africans: from 38.2 percent to 29.1 percent using the upper bound line, and from 20.0 percent to 11.5 percent using the lower bound line. The poverty gap indices for Whites indicate that the average poor White person was very close to the poverty, with very few Whites located any substantial distance below the line. Thus, it can be said that the depth of poverty amongst Africans remains considerably greater than that amongst Whites.

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[2] According to the 2001 Population Census, published by Statistics South Africa, over 92 percent of Mpumalanga's population was African and 6.5 percent were White. A mere 33 000 of the 3.1 million individuals residing in the province at that time were classified as Coloured or Asian (Statistics South Africa 2003: 10). Consequently, Statistics South Africa's nationally representative household surveys with their limited sample sizes are unable to accurately reflect the situation amongst Coloureds and Asians in Mpumalanga and results for these races have not been reported here.

Table 1: Poverty Shifts by Race of Household Head, 2000 to 2005

	South Africa				Mpumalanga			
	Headcount Rate		Poverty Gap		Headcount Rate		Poverty Gap	
	2000	2005	2000	2005	2000	2005	2000	2005
R322 Per Capita Per Month (2000 Prices)								
African	**69.7**	**62.7***	**38.2**	**29.1***	67.4	65.5	33.2	31.5
White	**1.4**	**0.7**	**0.6**	**0.2**	**4.5**	**0.0**	**3.2**	**0.0**
Total	59.7	53.8*	32.2	24.6*	62.9	61.6	30.9	29.6
R174 Per Capita Per Month (2000 Prices)								
African	**38.5**	**33.3***	**20.0**	**11.5***	39.1	37.5	14.4	13.5
White	**0.4**	**0.2**	**0.2**	**0.0**	**3.5**	**0.0**	**2.7**	**0.0**
Total	38.5	27.9*	16.5	9.6*	36.3	35.2	13.4	12.7

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Poverty lines are in 2000 prices.
2. Statistical significance at a 95 percent confidence level is denoted by bold type or asterisks (*). Bold type indicates that an estimate is statistically different compared to the overall (total) estimate for that year. Asterisks are used to denote where changes are significant over time.
3. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Within Mpumalanga, the depth of poverty is, as expected, substantially greater for Africans than Whites, irrespective of the poverty line. No statistically significant shifts in the poverty gap were found for Mpumalanga over the period, whether overall or by race group. In 2005, the average poor person in Mpumalanga was 29.6 percent below the upper bound poverty line, while for the lower bound line this proportion was 12.7 percent.

In terms of poverty shares, the African population, both within Mpumalanga and South Africa, account for the majority of the poverty. Africans within Mpumalanga account for an estimated 93.8 percent of the province's poor (using the upper bound poverty line) in 2000, while in 2005 this proportion stood at 94.1 percent. This, compared with Africans' population share within the province, indicates that this group accounts for a disproportionate share of poverty, echoing the situation nationally.

Table 2 examines the shifts in poverty according to the gender of the household head. Examining poverty according to the gender of the household head allows us to get a sense of how one of the most vulnerable sections of the population is faring in terms of poverty. Poverty levels for male- and female-headed households in Mpumalanga and South Africa are very different to each other. Even the trends

exhibited by South Africa and Mpumalanga are different to each other, with both poverty incidence and depth of poverty declining for both male- and female-headed households in South Africa, irrespective of the poverty line used. Evidently, poverty levels in Mpumalanga did not decline as noticeably as occurred nationally. While the changes in poverty levels were statistically significant at a national level, they were not statistically significant for Mpumalanga.

Table 2: Poverty Shifts by Gender of Household Head, 2000 to 2005

	South Africa				Mpumalanga			
	Headcount Rate		Poverty Gap		Headcount Rate		Poverty Gap	
	2000	2005	2000	2005	2000	2005	2000	2005
R322 Per Capita Per Month (2000 Prices)								
Male	**49.6**	**44.2***	**25.4**	**19.4***	**54.0**	**52.3**	**26.2**	**23.9**
Female	**74.0**	**66.2***	**41.8**	**31.4***	**74.9**	**73.8**	**37.3**	**37.0**
Total	59.7	53.8*	32.2	24.6*	62.9	61.6	30.9	29.6
R174 Per Capita Per Month (2000 Prices)								
Male	**38.5**	**21.4***	**12.4**	**7.3***	**29.5**	**27.8**	11.8	9.9
Female	**51.1**	**36.3***	**22.3**	**12.7***	**45.6**	**44.9**	15.7	16.4
Total	38.5	27.9*	16.5	9.6*	36.3	35.2	13.4	12.7

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Poverty lines are in 2000 prices.
2. Statistical significance at a 95 percent confidence level is denoted by bold type or asterisks (*). Bold type indicates that an estimate is statistically different compared to the overall (total) estimate for that year. Asterisks are used to denote where changes are significant over time.
3. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Even though poverty levels declined significantly for South Africa as a whole, female-headed households remain worse off than their male-headed counterparts. Approximately 66.2 percent of the population in female-headed households were located below the R322 per month poverty line compared to 44.2 percent of those in male-headed households. Female-headed households in Mpumalanga did not see the same change in poverty levels as their male-headed counterparts. They also remained poorer and in deeper poverty, with 73.8 percent of the population in female-headed households and 52.3 percent of those in male-headed households falling below the R322 per month poverty line in 2005.

Irrespective of the poverty line used, the depth of poverty for both male- and female-head of household decreased significantly in South Africa as a whole. The poverty gap declined from 32.2 percent in 2000 to 24.6 percent in 2005, according to the upper bound poverty line. Using the lower bound poverty line, the poverty gap

declined in the same way, from 16.5 per cent to 9.6 percent. The substantial decline in the poverty gap can be explained by the decrease in the poverty gap for female-head of households: from 41.8 percent in 2000 to 31.4 percent in 2005 using the upper bound poverty line and 22.3 percent in 2000 to 12.7 percent in 2005 using the lower bound poverty line. The changes in depth of poverty between 2000 and 2005 were statistically significant for the national estimates.

There were no statistically significant changes in the poverty gap for Mpumalanga for the period 2000 to 2005. The average female-headed household was 13 percentage points deeper in poverty than the average male-headed household using the R322 per month poverty line and 6.5 percentage points deeper in poverty using the R174 per month poverty line in 2005.

Table 3, which displays the shifts in poverty in urban and rural areas in South Africa and Mpumalanga for 2000 and 2005, shows that poverty levels in urban and rural areas for Mpumalanga exhibit similar trends to those seen for South Africa as a whole.

Table 3: Poverty Shifts by Location, 2000 to 2005

	South Africa				Mpumalanga			
	Headcount Rate		Poverty Gap		Headcount Rate		Poverty Gap	
	2000	2005	2000	2005	2000	2005	2000	2005
R322 Per Capita Per Month (2000 Prices)								
Urban	**43.0**	**38.1***	**19.7**	**15.0***	**46.2**	**42.4**	**20.2**	**18.3**
Rural	**84.4**	**76.3***	**50.5**	**38.5***	**75.8**	**74.8**	**39.3**	**37.4**
Total	59.7	53.8*	32.2	24.6*	62.9	61.6	30.9	29.6
R174 Per Capita Per Month (2000 Prices)								
Urban	**38.5**	**14.8***	**8.1**	**4.5***	**23.0**	**19.7**	**7.2**	**6.5**
Rural	**62.8**	**46.7***	**28.8**	**17.0***	**46.7**	**45.9**	**18.3**	**16.9**
Total	38.5	27.9*	16.5	9.6*	36.3	35.2	13.4	12.7

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Poverty lines are in 2000 prices.
2. Statistical significance at a 95 percent confidence level is denoted by bold type or asterisks (*). Bold type indicates that an estimate is statistically different compared to the overall (total) estimate for that year. Asterisks are used to denote where changes are significant over time.
3. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Poverty levels in rural areas are higher than in urban areas for both South Africa and Mpumalanga. Using the upper bound poverty line, approximately 76.3 percent of the population that lived in rural areas within South Africa in 2005 were poor, compared to 38.1 percent of the population that lived in urban areas. The national poverty estimate, based on the lower bound poverty line, for the rural population

was 46.7 percent, compared to 14.8 percent for the urban population in 2005. National headcount poverty rates saw statistically significant declines between 2000 and 2005 for both urban and rural areas. Even though rural and urban poverty levels within Mpumalanga are statistically different to each, there were no statistically significant changes in poverty levels for the five-year period.

Using both poverty lines, it is clear that poverty levels in rural areas within Mpumalanga are lower than poverty levels within South Africa as whole. However, poverty levels in rural areas within Mpumalanga remained high, as 74.8 percent of the rural population fell below the R322 poverty line, compared to 42.4 percent of the province's urban population in 2005.

According to the upper bound poverty line, the poverty gap for the rural population within South Africa declined significantly, from 50.5 percent in 2000 to 38.5 percent in 2005. Similarly, a large decline in the poverty gap was observed using the lower bound poverty line: the poverty gap for the rural population declined from 28.8 percent in 2000 to 17.0 percent in 2005.

While the headcount index for the ultra poor in urban and rural areas have declined, a higher proportion of the ultra poor reside in rural areas rather than urban areas in Mpumalanga
(75.7 percent in 2000 and 79.0 percent in 2005). The poverty gap is higher in rural areas than in urban areas, with the average poor rural individual being much further away from the poverty line than the average poor urban individual in 2005.

2.4 Describing Poverty without Poverty Lines

The controversy surrounding the derivation of poverty lines, as well as the binary outcome of their application – one is either poor or not poor – has prompted a move towards other methods of analysis that avoid the use of poverty lines altogether or that at least mitigate their associated shortcomings. One such method is the use of cumulative distribution functions (CDFs), which plot income or expenditure on the horizontal axis and cumulative share of the population on the vertical axis. The resulting graph represents the proportion of individuals who earn (or spend) less than a given amount of R1000 per month.

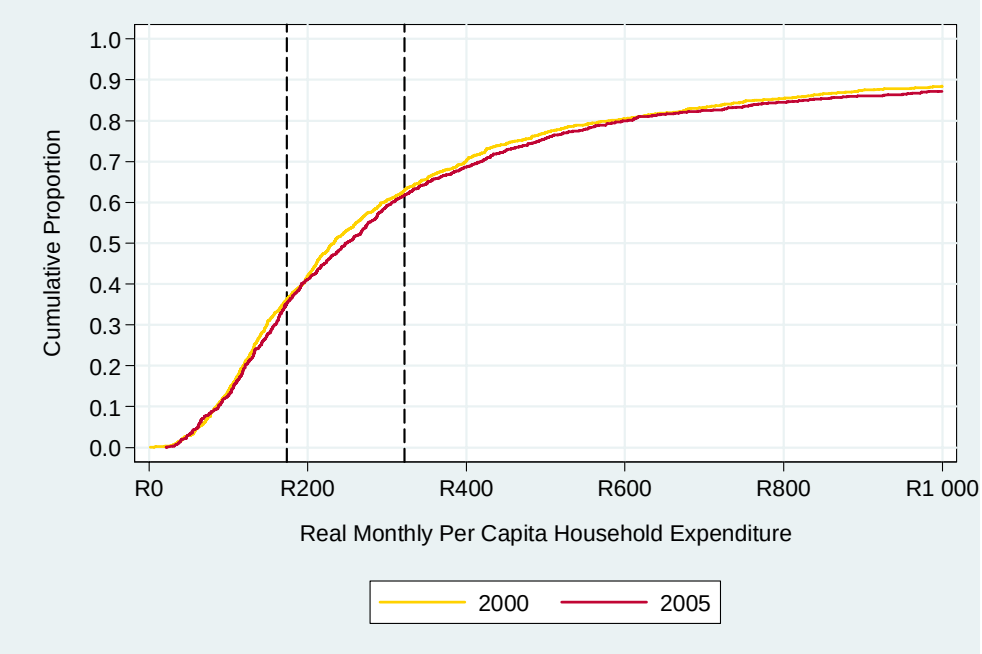
The use of CDFs is particularly useful when considering differences between groups or over time where conclusions may differ depending on the choice of poverty line, allowing for analysis that is insensitive to the choice of poverty line, at least within a given range. Graphically, in a time-based analysis of CDFs, if the CDF for period *t+1* lies at any point on the horizontal axis below the CDF for period *t* (i.e. the CDF for period *t+1* lies to the right of – lower than – the CDF for period *t*), it can be said that poverty has decreased between the two periods, irrespective of any specific poverty line.

The analysis presented here is based on cumulative distribution functions of per capita household expenditure for Mpumalanga in 2000 and 2005. For analytical purposes, the two poverty lines used above, namely R322 and R174 per capita in 2000 Rands, are included in the figures and are represented by the two vertical lines.

Figure 1 presents cumulative distribution functions based on real per capita household expenditure in 2000 prices for Mpumalanga in 2000 and 2005. The figure is truncated at real per capita household expenditure of R1 000 per month, since the analysis here is more interested in the lower end of the distribution. Not much information is lost in the figure, though, since between 80 percent and 90 percent of individuals have expenditures below this amount in both periods. The figure shows that there has been very little change in the cumulative distribution over time, with the curves for 2000 and 2005 lying very close to each other. This coincides with our earlier finding that the poverty rate for the province overall did not see a statistically significant change over the period.

In both periods, approximately two-fifths of the population of Mpumalanga are found to have expenditures below R200 per capita per month in 2000 Rands, while around 70 percent have expenditures of below R400 per capita per month. Only around one-fifth of the province report monthly expenditures in excess of R600 per capita.

Figure 1: Mpumalanga Cumulative Distribution Functions, 2000 and 2005



Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes: 1. Per capita expenditure was deflated to 2000 prices using the Consumer Price Index.

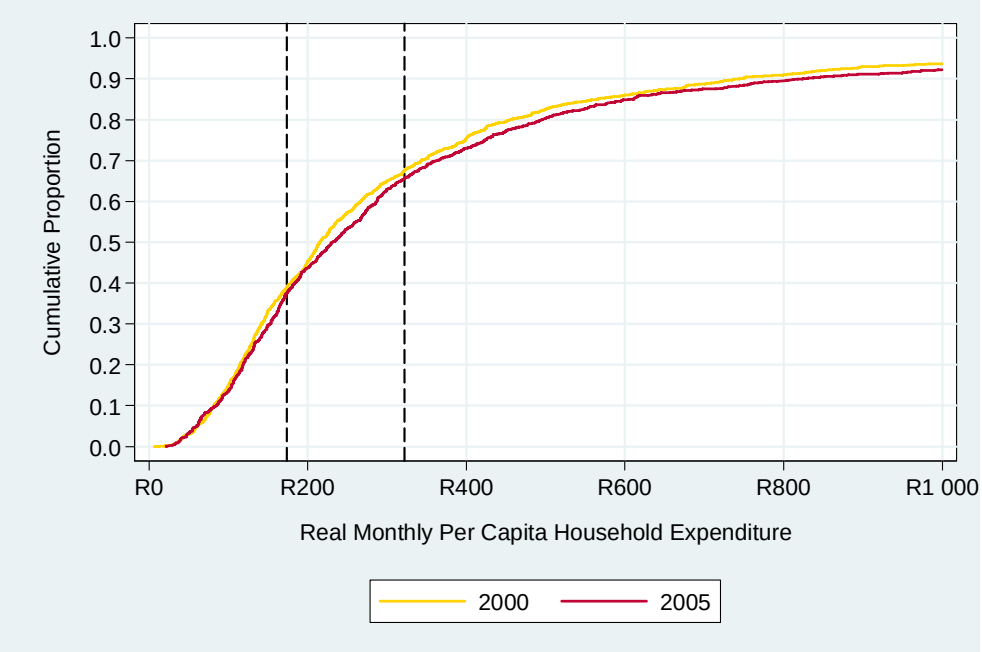
2 Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

For the most part, it appears that the 2005 line tends to lie slightly below and to the right of that of 2000, indicating a possible marginal improvement in poverty in the province.[3] That the two curves appear to overlap or cross each other at per capita expenditures below R200 and between R600 and R800 implies that the choice of poverty line within these ranges will impact on the measured poverty trends over time. Given that the curves do not appear to cross at expenditure levels between the lower and upper bound poverty lines (represented by the vertical lines in the figure), it appears that the conclusion reached earlier – that poverty rates have remained constant over time – is not dependent on the specific value of the poverty line within that range.

[3] This shift would need to be confirmed through first order stochastic dominance testing, which basically tests whether the gap between the two lines is statistically significant. This testing has not yet been performed, but it is likely that it will show no significant difference between the two curves.

Figure 2 presents CDFs for the African population in Mpumalanga, with the figure again truncated at a real per capita expenditure level of R1 000 per month in 2000 prices. As is to be expected, given the dominance of Africans within the total provincial population, poverty levels can be seen to have declined marginally across the population, irrespective of the poverty line, with the 2005 CDF lying below the 2000 CDF at virtually all points of distribution, the only exception being those with real per capita expenditures of between zero and approximately R150 a month.

Figure 2: Mpumalanga Cumulative Distribution Functions for Africans, 2000 and 2005



Sources: Own calculations, Statistics South Africa 2002, 2008.

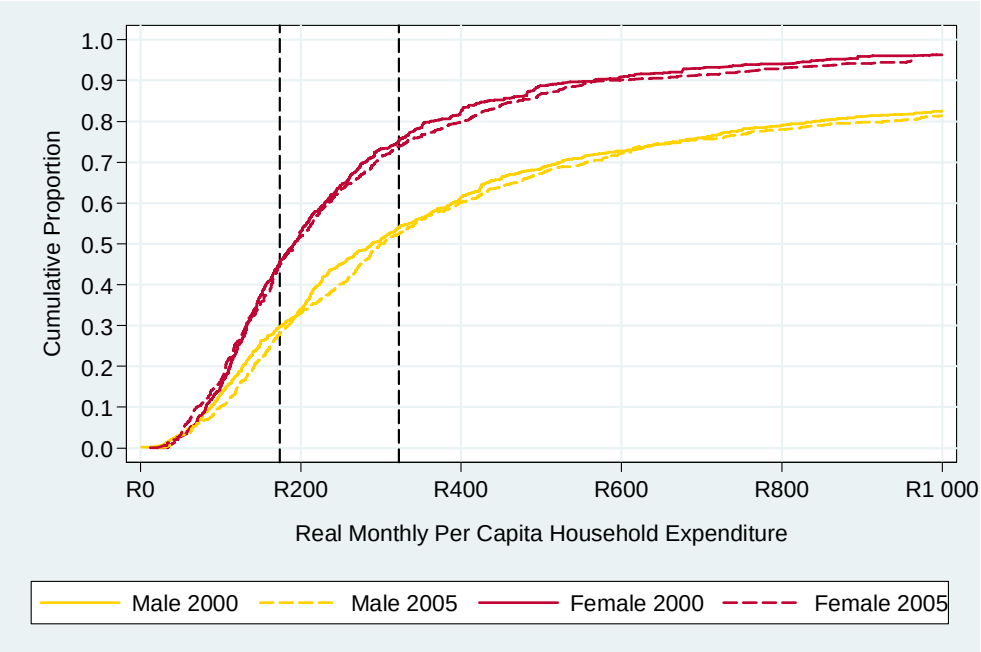
Notes: 1. Per capita expenditure was deflated to 2000 prices using the Consumer Price Index.

2 Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Relative to the provincial situation, it appears that a slightly greater proportion of the African population in the province have reported expenditures of under R200 per capita per month, while the same may be true of the proportion below R400 per capita per month. In line with the findings presented above, the figure confirms the minimal change, although likely an improvement, in African poverty rates, a conclusion that is insensitive to the choice of poverty line for the greater part of the distribution.

The gender of the head of the household is an important indicator of the likelihood that the household will be classified as poor, with female-headed households internationally more likely to be poor than their male-headed counterparts. This pattern is also observed in Mpumalanga, in both 2000 and 2005 (Figure 3). For example, in 2005, between 30 percent and 40 percent of individuals in male-headed households are classified as poor, compared to between 50 percent and 60 percent of their counterparts in female-headed households. Interestingly, it is only at about the level of the lower bound poverty line that the difference between the two CDFs becomes substantial, remaining greater than ten percentage points apart until the upper limit of the figure's expenditure axis.

Figure 3: Mpumalanga Cumulative Distribution Functions by Gender of Household Head, 2000 and 2005



Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Per capita expenditure was deflated to 2000 prices using the Consumer Price Index.
2. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

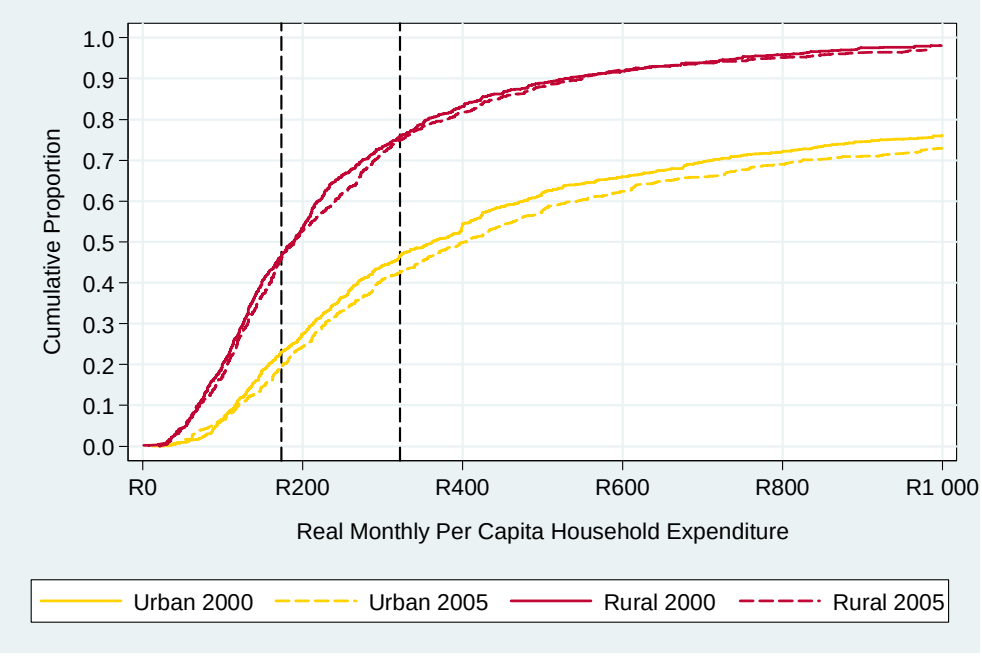
Like poverty levels for the province's African population as a whole, there has been no discernible change in poverty for either male- or female-headed households between 2000 and 2005. Poverty levels may possibly have trended marginally upwards for female-headed households with real per capita expenditures in the region of approximately R100 and R150 a month in 2000 prices. Poverty levels for all

the other poverty lines, for both male-and female-headed households have remained largely unaltered, with potential decreases of marginal size.

As noted, poverty levels for female-headed households remain higher than poverty levels for male-headed households for both 2000 and 2005, and this is true across poverty lines. In fact, when one compares poverty levels for female-headed households in 2005 with male-headed households in 2000, we find that poverty levels for female-headed households are significantly higher than poverty levels for their male counterparts. At the R174 per month poverty line, the headcount index for female-headed households is roughly double the headcount index for male-headed households, confirming the disadvantaged position of individuals in female-headed households.

Finally, geographically-defined CDFs are significantly different from each other, with rural areas at a clear disadvantage relative to urban areas. In 2005, more than half of the rural population in the province had reported expenditures of under R200 per capita per month, while more than four in five had expenditures of under R400 per capita per month. In contrast, less than 30 percent of the urban population fell below R200 per capita per month, while around 50 percent fell below R400 per capita per month. Unlike the gap between the CDFs for individuals in male- and female-headed households, the gap between the CDFs of the urban and rural populations opens relatively quickly and is close to 20 percentage points wide by the lower bound poverty line.

Figure 4: Mpumalanga Cumulative Distribution Functions by Location, 2000 and 2005



Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Per capita expenditure was deflated to 2000 prices using the Consumer Price Index.
2 Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Over the period, it appears that while poverty in urban areas has seen a decline, poverty in rural areas has remained stubbornly high. For urban areas, the CDF for 2005 lies at all points above the lower bound poverty line below and to the right of the 2000 CDF, although it is not yet clear whether this difference is statistically significant.

Overall, therefore, it is clear, at least as far as the Income and Expenditure Surveys are concerned, that little can be said with statistical certainty to have changed in terms of poverty in Mpumalanga. The inconclusive CDFs for the province as a whole are explained largely by the similarly inconclusive CDFs for the province's African population. Over the period, poverty amongst male- and female-headed households does not appear to have shifted much, although it is clear that female-headed households remain considerably more deprived than their male-headed counterparts. Similarly, poverty is most prevalent in rural areas of the province and, the evidence suggests, there has been no improvement in poverty in these areas over the period. By contrast, the evidence does point to an improvement in the poverty situation in urban areas over the period, implying a widening gap between the fortunes of the province's urban and rural areas.

3. SHIFTS IN INCOME INEQUALITY IN MPUMALANGA, 2000 - 2005

3.1 Measuring Inequality

Poverty levels in South Africa and Mpumalanga may have decreased over the five-year period between 2000 and 2005, but an important question is what has happened in terms of distribution and inequality. Inequality is of particular importance in the South African context, given the country's history of discrimination that has created one of the most unequal societies on earth.

To measure income inequality, two standard measures of inequality are employed, namely the Gini coefficient and the Theil index. These measures are complementary to each other as they are able to describe the extent and nature of inequality in different ways.

3.1.1 The Gini Coefficient

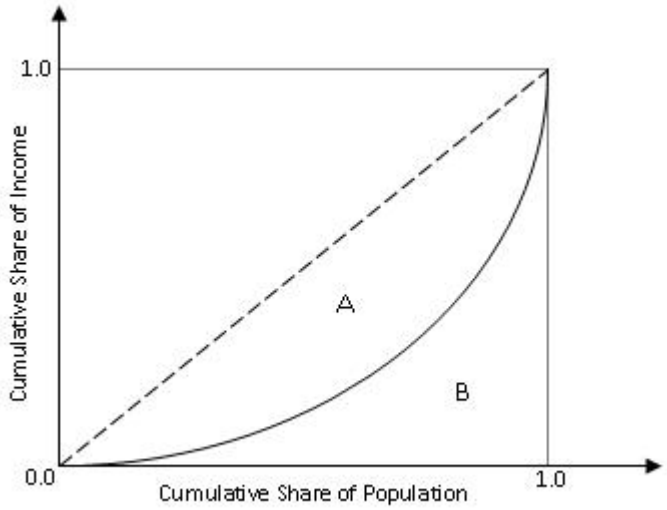
The Gini coefficient is one of the most commonly used measures of inequality since it is very easy to understand and interpret. The crucial drawback of the Gini coefficient is that it is not additively decomposable. This means that while it is easy to interpret, the overall Gini coefficient is not a sum or average of the respective subgroup Gini coefficients. Simply put, it is not possible to combine the various provincial Gini coefficients, for example, to obtain the national Gini coefficient: in fact, it is quite possible that the national Gini coefficient can be greater than or less than all nine provincial coefficients.

The Gini coefficient is derived from the Lorenz curve, which is a graphical depiction of income distribution. Figure 5 presents an example of a Lorenz curve, indicated by the solid curved line, which is constructed with the cumulative percentage of the population, arranged from poorest to the richest, on the horizontal axis, and the cumulative percentage of income received by each cumulative percentage of population on the vertical axis. The Lorenz curve is then a graphical representation of the relationship between the cumulative percentage of income and the cumulative percentage of (ordered) population. Thus, in practice, one would be able to say the poorest 20 percent of the population earn, for example, five percent of total income, while the poorest 40 percent of the population earn, say, 15 percent of the income. The Lorenz curve will begin at the origin, the point where zero percent of the

population receives zero percent of the income, and will end at the point where 100 percent of the population enjoys 100 percent of the income.

The more unequal a society, the smaller the proportion of income that will accrue to the poorest segment of the population and, accordingly, the lower the Lorenz curve will be on the figure. At its most extreme – perfect inequality – one person receives all the income and all other individuals receive nothing and the Lorenz curve will therefore proceed horizontally from the origin, remaining on the horizontal axis until the last person is added to the cumulative shares, which will result in the curve going up almost vertically to the point where 100 percent of the population receives 100 percent of the income (forming, in other words, a reversed 'L' shape). Conversely, a situation of perfect equality will see each person receiving the same income and, thus, the poorest 20 percent of the population will receive 20 percent of the income, the poorest 40 percent of the population will receive 40 percent of the income and so on. In this case, the Lorenz curve will form a straight diagonal line from the origin to the point where 100 percent of the population receives 100 percent of the income (illustrated by the broken line in the figure). This line is known as the line of perfect equality. Any Lorenz curve (except for perfect equality) will therefore lie below the diagonal.

Figure 5: An Example Lorenz Curve



The Gini coefficient is a measure of the extent of the deviation of the observed Lorenz curve from the line of perfect equality and is calculated by relating the area between the Lorenz curve and the line of perfect equality (graphically represented by area A) to the total area below the line of perfect equality (graphically represented by the sum of area A and area B), expressed as a proportion. Simply put, the Gini coefficient equals $A/(A+B)$, with possible values ranging from zero to

one (Sen 1997; Fields 2001).[4] A value of zero implies that area A equals zero, i.e. that the Lorenz curve lies exactly on the line of perfect equality, and thus a Gini coefficient of zero indicates perfect equality within a society. A value of one implies that area B equals zero, i.e. that the Lorenz curve follows the horizontal axis and then turns almost vertical (forming a reversed 'L' shape), representing a situation of perfect inequality. The higher the Gini coefficient is, therefore, the higher the level of inequality.

3.1.2 The Theil Index

In contrast to the Gini coefficient, the Theil index is neither intuitive nor easy to interpret. However, its one advantage is that it has the ability to decompose overall inequality into a proportion originating between subgroups and a proportion originating within subgroups. Thus, for example, overall inequality can be decomposed by race, with a certain proportion of overall inequality being explained by inequality between the race groups, and the remainder being explained by within race groups.

The Theil-T statistic is defined as $T = T_B + \sum q_i . T_i$, where T_i measures the inequality within the i^{th} group, q_i is the proportion of income accruing to the ith group, and T_B measures the inequality between the different subgroups. Even though T_B and T are calculated similarly, T_B assumes that all the incomes within a group are equal (Leibbrandt *et al.* 2001).

3.1.3 Data

The main data sources used are the Income and Expenditure Surveys (IES) for 2000 and 2005. Since the questionnaires for the two surveys are not identical, care was taken to match the two data sources so that a directly comparable household income variable could be created and used. The income sources that are included in the per capita income variable are wage income; income derived from self-employment; State transfers; private pensions; and other income (which includes income such as income from letting property; insurance claims etc). Income was chosen rather than expenditure since this allows for the decomposition of inequality according to income sources, which is presented in section 4.3 below.

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[4] Many analysts will report Gini coefficients in the form of percentages, with values between zero and 100.

There are no population weights available for 2000 and 2005 dataset and the population has been weighted by the household weight multiplied by the household size. The sample size for Mpumalanga is 2,282 in the IES 2000 and 1,687 in the IES 2005. The estimates that are reported in bold are statistically different from the overall income inequality and those with asterisks are statistically significant over time at the 95 percent level of confidence.

3.2 Inequality in Mpumalanga

South Africa's extremely high levels of inequality are confirmed in Table 4, which presents the per capita income by race using the Gini coefficient and Theil-T index for South Africa and Mpumalanga based on per capita household income. Only African and White race group inequality are presented, as there are insufficient data points for the Coloured and Indian population in the Mpumalanga sub-dataset in the 2000 and 2005 IES.

Table 4: Income Inequality in South Africa and Mpumalanga by Race, 2000 and 2005

Gini Coefficient	South Africa		Mpumalanga	
	2000	2005	2000	2005
Overall	0.69*	0.72*	0.63*	0.69*
African	**0.62**	**0.61**	**0.57**	**0.60**
White	**0.51**	**0.51**	**0.49**	**0.52**

Theil Index	South Africa		Mpumalanga	
	2000	2005	2000	2005
All (total)	1.05	1.14	0.78	1.13
Within	0.66 (63%)	0.63 (56%)	0.58 (74%)	0.68 (61%)
Between	0.39 (37%)	0.51 (44%)	0.21 (26%)	0.45 (39%)

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes: 1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

For South Africa as a whole, inequality, as measured by the Gini coefficient, has remained high both generally and across the African and White race groups. The results suggest that, since 2000 there has been a general increase in income inequality. The level of inequality has, it appears, therefore worsened and South Africa remains one of the most unequal societies in the world.

The general trend of increasing inequality is mirrored in Mpumalanga. Even though the Gini coefficient is lower in Mpumalanga than in South Africa as a whole, the increase in income inequality has been substantially greater in Mpumalanga where

the Gini coefficient has increased from 0.63 to 0.69 between 2000 and 2005. Both the African and White race groups experienced the same percentage point increase in inequality, with the African population characterised by a greater degree of inequality than the White population. Importantly however, income inequality is lower for both the African and White population than the Provincial income inequality estimates.

As discussed, the Theil index is used to decompose inequality into between-and-within-group inequality. Interestingly, and in contrast to previous research (see Leibbrandt *et al.* 2005; Hoogeveen and Ozler 2006) it appears that inter-race group inequality became slightly more significant in explaining inequality for the post-apartheid period in South Africa. From the results presented in Table 4 it is evident that income inequality between the African and White population of both South Africa as a whole and Mpumalanga has widened for the period under review. Even though a large portion of inequality is explained by income inequality between race groups, income inequality between race groups are playing a more important role than in the past.

Income inequality for the urban and rural population has increased, both for South Africa as whole and within Mpumalanga as can be seen from the data presented in Table 5 below. Income inequality for the urban population within South Africa has increased from 0.66 in 2000 to 0.69 in 2005 and it has increased within Mpumalanga from 0.62 in 2000 to 0.69 in 2005. It appears that income inequality within Mpumalanga has increased significantly when compared to the income inequality within South Africa as a whole. These changes are statistically significant.

Table 5: Inequality in South Africa and Mpumalanga by Location, 2000 and 2005

Gini Coefficient	South Africa		Mpumalanga	
	2000	2005	2000	2005
Overall	0.69*	0.72*	0.63*	0.69*
Urban	**0.66***	**0.69***	0.62*	0.69*
Rural	**0.60**	**0.60**	**0.51**	**0.52**

Theil Index	South Africa				Mpumalanga			
	2000		2005		2000		2005	
All (total)	1.05		1.14		0.78		1.13	
Within	0.90	(86%)	0.98	(86%)	0.65	(83%)	0.91	(80%)
Between	0.15	(14%)	0.16	(14%)	0.13	(17%)	0.22	(20%)

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes: 1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Income inequality for the rural population within Mpumalanga has increased marginally in Mpumalanga, and remains significantly lower than the income inequality found amongst the rural population in South Africa as a whole. These changes over time are however not statistically significant.

From Table 5 it becomes apparent that most of the income inequality within South Africa is found within the urban and rural population, and not between the rural and urban population. Over the five-year period, inequality shares between the urban and rural population within South Africa has remained the same.

A similar trend of income inequality has been established within Mpumalanga, since a significant share of income inequality is explained by income within the urban and rural population. Income inequality between urban and rural population has however increased slightly between 2000 and 2005. Despite the decrease in poverty in rural areas, the increase in income inequality could lead to an increase in rural to urban migration as those living in rural areas could perceive urban areas to provide a better opportunity for improving their standard of living.

We now turn to inequality according to the gender of household heads. Importantly, not all female-headed households are poor, or are more impoverished than male-headed households, but generally female-headed households are more vulnerable than male-headed households. Female-headed households face greater difficulties, such as gaining access into the labour market, credit, and housing and basic services. Additionally, female-headed houses are often single parent households, implying that there is only one adult that oversees the provision of food, household management and child rearing (BRIDGE 2001).

Table 6: Income Inequality in South Africa and Mpumalanga by Gender of Household Head, 2000 and 2005

Gini Coefficient	South Africa		Mpumalanga	
	2000	2005	2000	2005
Overall	0.69*	0.72*	0.63*	0.69*
Male	**0.68***	**0.70***	0.64*	0.69*
Female	**0.64**	**0.68**	**0.51**	**0.57**

Theil Index	South Africa		Mpumalanga	
	2000	2005	2000	2005
All (total)	1.05	1.14	0.78	1.13
Within	0.96 (92%)	1.06 (92%)	0.71 (91%)	1.01 (89%)
Between	0.08 (8%)	0.09 (8%)	0.07 (9%)	0.12 (11%)

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes: 1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the

household size to obtain the population weights. Both sets of weights are 2001 Census weights.

From the table we see that although the general trends of inequality that is experienced by South Africa are replicated in Mpumalanga, it is not reproduced to the same severity. Inequality for male- and female-headed households is increasing. Between 2000 and 2005, income inequality in female-headed households increased by a comparatively greater amount than income inequality in male-headed households, and from a lower base.

The share of income inequality explained within the gender of head of households and between income inequality explained by the gender of household, as shown by the Theil index has not changed drastically between 2000 and 2005 for both South Africa and Mpumalanga. Income inequality therefore remains proportionately greater within male- and female-headed households compared to income inequality between male- and female-headed households. This result can be seen from the increasing Gini coefficient for female-headed households, which has increased from 0.51 in 2000 to 0.57 in 2005, and male-headed households which has increased from 0.63 to 0.69 in 2000 and 2005 respectively.

3.3 Disaggregating Inequality by Sources of Income

Since income derives from various sources, such as wage income or income from state transfers, being able to attribute the pattern of overall inequality to the various income sources is essential to better understand the phenomenon, allowing for more effective policymaking. Using the Gini coefficient, it is possible to analyse the different sources of income and their respective contributions to income inequality using a method developed by Lerman and Yitzhaki (1985). This method has also been employed by Leibbrandt *et al.* (2001) in the South African context, using data from the 1995 Income and Expenditure Survey.

Inequality in the distribution of total income as measured by the Gini coefficient (G) can be decomposed as:

$$G = \sum_{k=1}^{K} S_k . G_k . R_k$$

where S_k represents the importance (percent share) of income source k in total income, G_k is the Gini coefficient of the distribution of income source k for all, and R_k is the Gini correlation of income from source k and total income. The three components, S_k, G_k and R_k, enter multiplicatively into the equation and the larger the product for a given income source k, the larger the contribution to total income for that income source. Of the three components, only R_k can possibly have a negative

value ranging between negative and positive one, which indicates a negative correlation between the amount earned from income source *k* and total income. Such an income source would then contribute towards lowering overall inequality for the group.

The main sources of income used in the decomposition of the Gini coefficient are wage income, income derived from self employment, state transfers, private pensions. All other income is combined into an 'other' category, while total taxes were deducted from the total to arrive at total disposable income.[5] The presence of state transfers and taxes in the decomposition allow the discernment of the impact of the state's major interventions that impact directly on inequality.

The overall Gini coefficient based on total disposable income for Mpumalanga is estimated at 0.57 in 2000 and 0.67 in 2005, both of which are lower than the Gini coefficients reported earlier. The Gini coefficients are, as the equation above suggests, located in the bottom rows of Table 7 and Table 8 respectively, in the S_k-G_kR_k column. The Gini coefficients reported here are lower because they are household level statistics, while the coefficient reported earlier are individual -level coefficients. Since poorer households tend to be larger, there are relatively more poor people than poor households. When moving from a household-level Gini coefficient to an individual-level Gini coefficient, the lower end of the distribution is effectively stretched. The Gini coefficient is, therefore, higher when reported at the level of the individual than at the household level. In terms of the tables, P_k is the proportion of households that receive income source *k*; G_a is the Gini coefficient for income source *k* for those households that actually receive income from income source *k*, while G_k is the Gini coefficient for income source *k* for all households, whether or not these household derive income from that source.

5 To ensure comparability across surveys, the same income sources were included when constructing the various sources of income. It is for this reason that imputed rent was excluded as a source of income in 2005.

Table 7: Decomposition of Disposable Income by Income Source, Mpumalanga, 2000

Income Source	*Share of Households Receiving Income from Source* P_k	*Mean Income from Source* Mean	*Share in Total Income* S_k	*Gini for Income Source for Households Receiving such Income* G_A	*Gini for Income Source for All Households* G_k	*Gini Correlation with Income Rankings* R_k	*Contribution to Gini Coefficient of Total Income* $S_kG_kR_k$	*Percentage Share in Overall Gini Coefficient* Share
Wage Income	0.65	19 019	0.75	0.61	0.75	0.91	0.51	88.6
Self-Employment	0.12	1 533	0.06	0.64	0.96	0.59	0.03	5.9
State Transfers	0.23	1 604	0.06	0.28	0.83	0.08	0.00	0.8
Private Pensions etc	0.03	338	0.01	0.54	0.99	0.42	0.01	1.0
All Other Income	0.82	5 200	0.20	0.65	0.71	0.50	0.07	12.7
Income Tax	0.26	-2 270	-0.09	-0.70	-0.92	-0.63	-0.05	-9.0
Total		25 423	1.00				0.57	100.0

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes: 1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Table 8: Decomposition of Disposable Income by Income Source, Mpumalanga, 2005

Income Source	*Share of Households Receiving Income from Source* P_k	*Mean Income from Source* Mean	*Share in Total Income* S_k	*Gini for Income Source for Households Receiving such Income* G_A	*Gini for Income Source for All Households* G_k	*Gini Correlation with Income Rankings* R_k	*Contribution to Gini Coefficient of Total Income* $S_kG_kR_k$	*Percentage Share in Overall Gini Coefficient* Share
Wage Income	0.66	36 070	0.78	0.66	0.78	0.91	0.56	83.1
Self-Employment	0.18	5 993	0.13	0.78	0.96	0.81	0.10	15.1
State Transfers	0.51	4 522	0.10	0.44	0.72	0.12	0.01	1.3
Private Pensions etc	0.20	1 686	0.04	0.92	0.99	0.82	0.03	4.4
All Other Income	0.80	2 572	0.06	0.96	1.00	0.35	0.02	2.9
Income Tax	0.25	-4 877	-0.11	-0.75	-0.94	-0.46	-0.05	-6.8
Total		45 965	1.00				0.67	100.0

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes: 1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.

Quite interesting is the change in the proportion of households that receive state transfers in Mpumalanga. The proportion of households receiving state transfers has increased from 23 percent in 2000 to 51 percent in 2005. The same trend is exhibited in South Africa as whole, with the proportion of households receiving state transfers increasing from 22 percent in 2000 to 46 percent in 2005.

The share of the main sources of income that contributed to total income, changed between 2000 and 2005. In 2000, the share of the main sources of income that contributed to total income were wage income (75 percent of total disposable income); other income (20 percent) and state transfers (6 percent) and income derived from self-employment (6 percent). While wage income remained the main contributor to total income, other income contributed significantly less in 2005, with income derived from self employment (13 percent) and state transfers (10 percent) making up a higher share of total income in 2005 than in 2000.

The mean values of the various income sources also changed drastically. In 2000 the average for wage income was R19 019 per annum while in 2005 it was R36 069 per annum. The mean for income derived from self-employment and state transfers also increased, from R1 533 in 2000 to R5 993 in 2005 and from R1 604 in 2000 to 4522 in 2005 respectively.

Given its large share within total disposable income, it is unsurprising that wage inequality is found to account for the largest share to income inequality in both 2000 and 2005. P_k is the proportion of households that receive income source k. Following Leibbrandt *et al.* (2001), we disaggregate the effect of the inequality between households that receive wage income and households that do not receive wage income.

The Gini coefficient for income source k (G_k) can be divided into households that earn income from that source (G_a) and the proportion of households that receive that income source (P_k). Instead of focusing on P_k , we focus on households that do not receive wage income, $(1 – P_k)$ so that we are able to analyse what proportion of wage inequality is derived from those that do not have access to this income source (Leibbrandt *et al.* 2001: 31). We see that:

$$G_{wage\ 2000} = 0.75 = P_{wage}\, GA + (1 – P_{wage}) = 0.40 + 0.35$$

$$G_{wage\ 2005} = 0.78 = P_{wage}\, GA + (1 – P_{wage}) = 0.44 + 0.34$$

From the disaggregation above, we are able to apportion more than 40 percent of income inequality to those that do not have access to wage income in both 2000 and 2005. Interestingly though, it appears that over the five year period, households that have access to wage income contribute an increasing amount to income inequality than households that do not have access to wage income. While households that do not have access to wage income do absorb a large portion of the income inequality, more than 40 percent in fact, a larger and increasing portion of income inequality for wage earners can be attributed to those who earn wages. This result is very subtle, but notable as it gives one of the first clues to the type of growth that Mpumalanga has experienced between 2000 and 2005 period.

When comparing the shares of income inequality in 2000 and 2005, some interesting trends emerge. One such trend is that the share of income inequality from income derived from self-employment changed significantly. It contributed just 5.9 percent to income inequality 2000, while in 2005 its share to income inequality increased significantly to 15.1 percent. Another interesting feature that comes out of the table is the influence of state transfers on income inequality. While state transfers helps with the alleviation of poverty, it also contributes to income inequality, albeit marginally. While the share of other income to income inequality was significant in 2000 (12.7 percent), it played a less important role to income inequality in 2005, with only 2.9 percent of income inequality being attributed to other source of income.

Including income tax in the decomposition of the Gini lowers the mean household level of income, from R27 693 to R25 423 in 2000 and from R51 097 to R45 965 in 2005 (not seen in the table). The Gini coefficients for households that pay income tax are 0.70 in 2000 and 0.75 in 2005. The Gini coefficient across all households is even higher than the Gini coefficient for household that pay taxes since it is 0.92 in 2000 and 0.94 in 2005. Income tax lowers the Gini coefficient by 0.05 in 2000 and 2005, or 9 percent in 2000 and 6.8 percent in 2005. The impact of Income tax on income inequality has therefore declined slightly between 2000 and 2005 since the R_k value was lower.

4. GROWTH, POVERTY AND INEQUALITY

Growth, by itself, cannot reduce poverty. Additionally, the effect of growth on poverty differs across countries. The World Bank for example, estimates that for every two percent increase in growth, there is a potential reduction in poverty between one percent and seven percent (Ravallion 2001). While economic growth could lead to a decrease in poverty, it could also lead to an increase inequality, which would then reduce the impact of economic growth on poverty. Economic growth leads to an increase in inequality because, as economies grow, so the income distribution of the economy also changes. As a consequence of this rising inequality, the effect of growth on poverty reduction would be diminished since only a portion of the non-poor population would benefit from the growth.

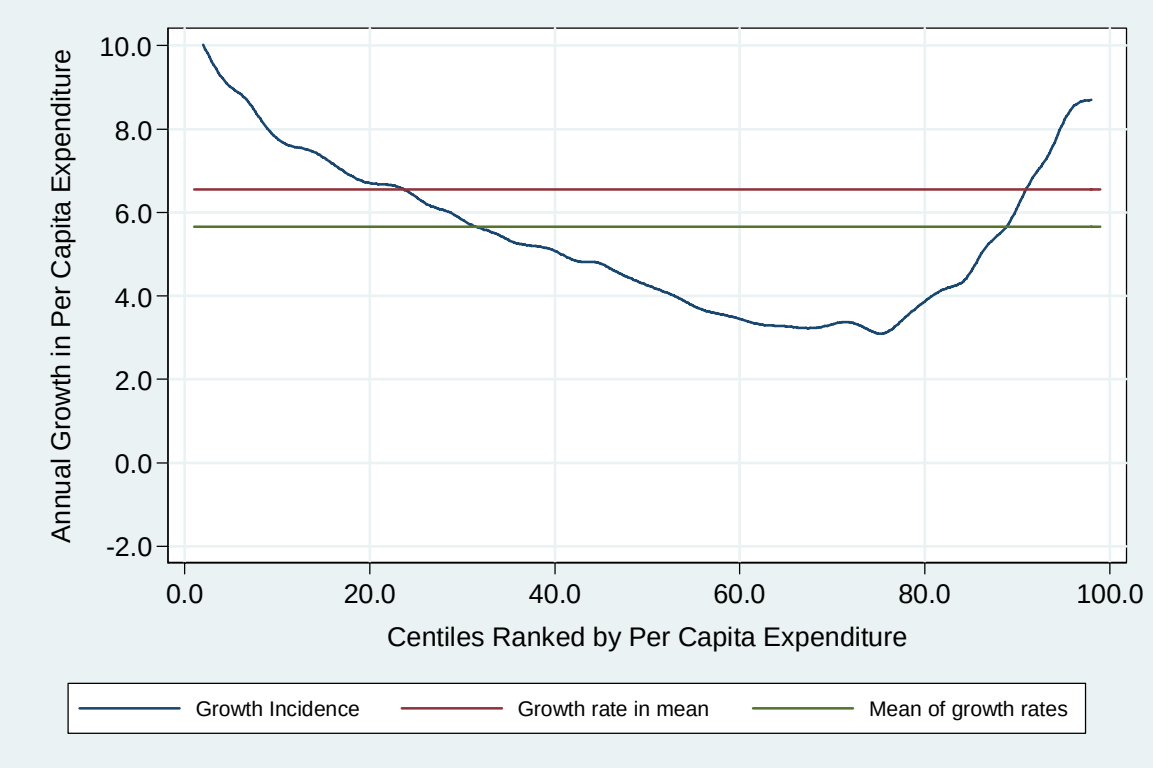
To analyse whether growth in expenditure in this period has been pro-poor in nature, growth incidence curves (GIC) are constructed by dividing the distribution into 100 equally-size parts (referred to as centiles) and plotting the growth in per capita expenditure between 2000 and 2005 for each centile of the distribution. The GICs illustrate the change in incomes/expenditures over time at different points in the distribution and helps place the various parts of the distribution in relation to each other as far as growth is concerned. Specifically, a GIC is able to assist in the evaluation of whether or not growth has been pro-poor in nature. When the GIC is above zero for the entire distribution, it implies that poverty is declining, irrespective of the poverty line chosen or what measure of poverty is used. If the GIC is decreasing for the all values (i.e. downward-sloping), it is an indication that inequality is decreasing, while an increasing GIC (i.e. upward-sloping) represents increasing inequality. The growth rate of the median is found at the 50th percentile of the GIC (Ravallion and Chen 2003).

Pro-poor growth may be defined in two broad ways, one definition being stronger than the other. Growth may be considered pro-poor in an absolute sense if the change in income/expenditure levels of the poor (as defined by a chosen poverty line) over a given time period is larger than zero, i.e. the income/expenditure levels of the poor have increased in absolute terms. Graphically, this definition is represented by a growth incidence curve that is located entirely above zero (in real terms) along the whole distribution. Alternatively, growth may be considered pro-poor in a relative sense if the change in the income/expenditure levels of the poor is larger than the change in the income/expenditure levels of the non-poor (Bhorat and Van Der Westhuizen 2007). At its extreme, this would result in a downward-

sloping growth incidence curve. The absolute definition of pro-poor growth is the easiest to achieve, since it only requires that households in the poorest centiles see an increase, no matter how small, in per capita income/expenditure. In contrast, the relative definition requires that households in the poorest centiles see their incomes/expenditures increase more rapidly than those in better off centiles.

Figure 6 presents the growth incidence curve for South Africa for the period 2000 to 2005, based on real per capita expenditure. It is evident from the figure that average annual growth in per capita expenditure over the period has been positive across the entire distribution and it can therefore be said that South Africa experienced absolute pro-poor growth. The U-shaped GIC, however, indicates that the centiles located at the extremes of the distribution (the poorest and richest centiles) experienced more rapid growth than those located in the middle of the distribution. Growth was lowest between the 60th and 75th percentiles. While growth at the lower end of the distribution tended to be higher than that at the upper end, only the poorest 30 percent of the population experienced average annual increases in expenditure above the mean of the percentile growth rates. In contrast, the upper tenth or so of the distribution experienced above average growth rates. The average annual growth in mean per capita expenditure was just above six percent over the period, and the mean of the growth rates at each percentile was five percent over the period.

Figure 6: Growth Incidence Curve for South Africa, 2000 to 2005



Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.
2. Figures are annualised growth rates.

Considering the lower three-quarters of the distribution, one could say that growth was pro-poor in both an absolute and a relative sense and, further, that inequality decreased over the period. However, since the growth incidence curve slopes upwards from around the 75th centile onwards, growth overall has not been pro-poor in a relative sense. Individuals between the 60th and 70th centiles experienced the lowest growth rates at around three percent. One can therefore infer that those that benefitted the most from average annual growth in per capita expenditure were those at the lower and top end of the distribution, while those in the middle of the distribution, particularly those between the 60th and 70th centiles, experienced lower than the average annual growth in per capita expenditure.

Having noted the national trend over the five-year period, Figure 7 presents the GIC for Mpumalanga for the same period. The GIC for Mpumalanga is very different to the national GIC. In contrast to the absolute pro-poor growth that South Africa experienced, most of the growth in expenditure within Mpumalanga occurred at the

upper end of the distribution, while the ultra poor, those located in the very poorest centiles, saw a decline in real per capita expenditure over the period. Average annual per capita growth rate in expenditure oscillated around the mean growth rate of 1.3 percent from the 15th to the 90th percentile, before surging higher for the upper ten percent of the population.

Figure 7: Growth Incidence Curve for Mpumalanga, 2000 to 2005

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.
2. Figures are annualised growth rates.

It is clear that those at the higher end of the distribution, particularly those that fall in the 90th percentile experienced the highest average annual per capita growth rate. The growth rate has been highly unequal, with the poorest 90 percent of the population experiencing an average real annual growth rate in expenditure substantially lower than the growth rate in the mean of 5.9 percent per annum. Thus, Mpumalanga did not experience pro-poor growth in the absolute sense (given declines in per capita expenditure for the poorest centiles) and, therefore, it was not possible for it to see relative pro-poor growth.

These results are confirmed in the appendix, where the results of the bottom and top ten percentiles' average annual growth rates in expenditure are presented for Mpumalanga. The results show that the bottom ten centiles saw little or negative growth in real per capita expenditure between 2000 and 2005. At the extreme upper end of the distribution, high average annual growth rates in expenditure were experienced, with the richest of the rich benefitting most from the growth period 2000 to 2005. It must be noted, however, that the small sample size for Mpumalanga means that the number of observations included in each centile of the distribution is very small. Consequently, the margin of error in these estimates is likely to be substantial, reducing the certainty of the true growth experience in the province.

Table 9 gives the growth rate in mean and median expenditure as well as the mean percentile growth rate at national and provincial level and for the African race groups. In addition, it presents the rate of pro-poor growth for the poorest 10th, 15th, 20th, 25th and 30th percentiles of the distribution.[6]

Table 9: Measures of Pro-poor Growth, 1995 to 2005

	South Africa		Mpumalanga	
	Total	Africans	Total	Africans
Growth Rate in Mean	6.5	4.9	5.9	2.7
Growth Rate in Median	4.3	5.1	1.4	1.5
Mean Percentile Growth Rate	5.7	5.7	1.3	1.2
Rate of Pro-Poor Growth at:				
10th percentile	9.3	9.8	0.1	0.1
15th percentile	8.7	9.2	0.1	0.0
20th percentile	8.2	8.7	0.1	0.0
25th percentile	7.9	8.4	0.2	0.2
30th percentile	7.6	8.1	0.3	0.3

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.
2. Figures are annualised growth rates

The patterns of growth for South Africa and Mpumalanga are clearly very different to each other. Nationally, those at the 10th percentile of the distribution experienced

[6] The pro-poor growth rate is the annualised mean growth rate of the poor. This gives the annualised change in the Watts index divided by the headcount index at each given percentile (see Ravallion and Chen 2003).

higher growth rates than those at the 30th percentile of the distribution, indicating that those at the lower end of the distribution benefitted more than those higher up in the distribution. This is also true for the African population in South Africa. The African population at the 10th, 15th, 20th, 25th and 30th percentiles of the distribution experienced higher growth rates than the pro-poor growth rates at national level.

The pro-poor growth rates for the population in Mpumalanga, however, are very different. Even though the pro-poor growth rates were significantly less than those found in South Africa as a whole, we find that those at the 10th percentile of the distribution experienced lower growth rates than those at the 30th percentile. Additionally, the African population experienced lower pro-poor growth rates than the provincial estimates. Those at the higher end of the distribution appear to have benefitted more from growth than those at the lower end of the distribution, and therefore negligible pro-poor growth occurred in Mpumalanga or amongst the province's African population.

5. POLICY CONSIDERATIONS

5.1 Income Transfers

Effective policymaking is critically dependent on a thorough understanding of the unique challenges and characteristics of the target population. In the past, provincial and local government have been somewhat constrained in their ability to establish empirically some of the key issues requiring policy attention, because the household surveys conducted by Statistics South Africa are designed to be nationally representative and have inadequate sample sizes to accurately quantify characteristics at a sub-provincial level. However, the advent of the Community Survey, for example, and the growing survey expertise generally available certainly facilitates a deeper, more nuanced understanding of the characteristics of smaller geographical areas.

Equipped with this deeper understanding of local circumstances, provincial and local governments are increasingly in a position to develop local policies and solutions in the fight against poverty. Conditional transfers, for example, are extremely useful interventions in targeted areas, and have the advantage that they require very little additional expertise since they are implementable using existing systems. Armed with the knowledge of local circumstances and bottlenecks, conditional transfers may be a highly effective, 'high-impact' method of alleviating poverty and improving living conditions.

Conditional transfers are transfers to households that the government has identified as poor. In order to receive the transfers, families or households are required to fulfil certain conditions. One successful example of conditional transfers is the Brazilian programme, the *Bolsa Familia* programme, implemented as a conditional cash transfer in October 2003. This programme identifies families in extreme and moderate poverty and allocates them a basic monthly stipend. If the families included children or pregnant woman, they receive an additional stipend, up to a maximum of three children and women. Families that have been identified as living in extreme poverty receive a greater stipend than those that are in moderate poverty. The conditions that families need to fulfil is that children need to have at least 85 percent school attendance; children up until the age of six needs to have updated immunisation cards, and pregnant and breastfeeding women need to visit clinics regularly. Those families who live in extreme poverty and who do not have children have to comply with looser conditions such as needing to participate in training programmes (Osorio *et al.* 2007).

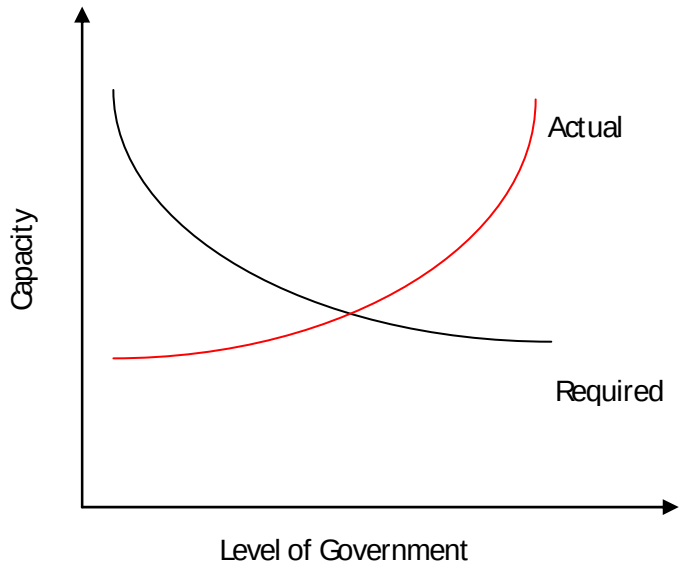
This is just one example of the way in which conditional transfers may be highly effective in changing behaviour, leading to beneficial social outcomes. In South Africa, low enrolment rates are not an issue, but this type of programme can be easily adapted to achieve different outcomes. Cash transfers may decrease poverty, and may even have a dampening effect on inequality as Osorio *et al.* (2007) found, but cannot be the only policy implemented to alleviate poverty. Instead, such a programme could be implemented complementarily to other initiatives, and not as the sole programme which will be used to alleviate poverty and income inequality. Other more sustainable policy options, such as finding the youth employment or offering training programmes that would increase their skill base, should be considered in addition to providing conditional cash transfers.

However, the important caveat related to the sustainable financing of such a programme within the context of tight fiscal envelopes must be considered, particularly given the relatively limited manoeuvrability enjoyed by the provinces. Fiscal sustainability is an important issue in the context of the dramatic increase in access to state transfers experienced in South Africa over the past decade, with the proportion of households receiving state transfers rising from 23 percent in 2000 to 51 percent in 2005. Many would question the ability of the government to continue to sustain the level of grants distributed while giving an additional income transfer. Others would argue that implementing such a policy would lead to an over-dependence of South African's on welfare payments from the state. While the income transfer might be able to alleviate poverty, decision-makers need to consider how such a programme would be financed, particularly within a sustainable financial framework.

5.2 Implementation and Delivery Expertise

Staff capacity, both in terms of posts being filled and skilled government officials, is crucial to the delivery of services. Without properly trained staff, government departments will not be able to deliver on their mandates. A lack of capacity, although not unique to a specific sphere of government, is usually more common at local government level and particularly in rural areas. While departments may have the budget to implement the programme, if they do not have properly trained or sufficient staff, it would very difficult to ensure satisfactory service delivery. Often staff retention within government departments is weak, leading to losses of trained officials and institutional memory,

Figure 8: State Capacity and Service Delivery



which adversely affects the delivery of services.

There is a need for more highly skilled officials at the lower tiers of government, where the actual service delivery takes place, as opposed to the current distribution where those with experience and technical expertise more likely to be employed at national level, rather than at provincial or especially local government level. This can be represented graphically (Figure 8), where the upward-sloping curve describes the current distribution of capacity, and the downward-sloping curve shows the required or optimal distribution, from a service delivery point of view. Arguably, what should be happening to ensure that there is efficient and effective service delivery, is that there should be a certain standard at national level and that capacity levels should increase as we move down the tiers of government. Government is moving in the right direction, since the introduction of the introduction of the Municipal Regulations on Minimum Competency Levels (Gazette No 29967). This piece of legislation attempts to ensure that all municipal officials from middle management onwards have a certain level of education and expertise in order for them to deliver their mandates effectively.

6. CONCLUSION

The past fifteen years have seen substantial effort being put into designing and implementing policies that will counter the apartheid socioeconomic legacy and promote greater equality within South African society. Consequently, at various levels within government, there is an interest in quantifying the effects of these policies and establishing whether, over the post-apartheid era, incomes have indeed risen, poverty has fallen and inequality has been ameliorated. This paper forms part of this effort of understanding the changing socio-economic landscape. The 2000 and 2005 Income and Expenditure Surveys are utilised to construct a socio-economic profile of the province of Mpumalanga, and to consider how poverty and income inequality have changed over this five year period.

The key poverty result is that the incidence of poverty within Mpumalanga has declined marginally between 2000 and 2005. It is important to note that the poverty rates presented are not strictly comparable with other poverty estimates since the structural differences in the latest Income and Expenditure Survey necessitated the construction of new income and expenditure aggregates for 2000 that were comparable with the 2005 aggregates. The result of slight declines in poverty was invariant to the choice of the poverty line, and is consistent with the message that emerges from the analysis of the province's growth incidence curve. The marginal decline in poverty was consistent across race, the gender of the household head and location within Mpumalanga.

Income inequality on the other hand increased significantly. The result is surprising since Gini coefficients are inertial by nature, and do not change significantly, particularly over such a short time-period. This significant change may be related to small sample sizes and, possibly, to data issues despite the care taken to ensure comparable aggregates between the two surveys. The Theil measures presented indicate that inter-racial inequality appears to account for a larger share of overall inequality than has been the case in the past, implying a reversal of the historical trend which saw intra-racial inequality increasingly responsible for overall inequality. The duration of this reversal in the trend will be important to monitor as it contradicts the expectation, given government policies, that inter-racial inequality should be declining in importance.

The decomposition of the Gini coefficient by income sources, in turn, highlighted a number of additional points. Firstly, the proportion of households with access to grants has increased rapidly between 2000 and 2005. Secondly, the share of income inequality attributable to income derived from self-employment increased significantly between 2000 and 2005, while the share of income inequality

attributable to wage income remained stable over the period as the main contributor to income inequality. It was also found that the income inequality between those that earned wage income was greater than those who did not earn wage income i.e. that the disparity between wage earners within the province increased.

The growth incidence curves, which serve to illustrate the nature of pro-poor growth within Mpumalanga, show that growth rates of real per capita incomes were very low across the distribution, with the exception being those at the upper end of the distribution. Recent growth in Mpumalanga cannot be said to be pro-poor, whether absolute or relative, since the growth incidence curve ranged close to zero across most of the distribution and dipped into negative territory amongst the poorest. These results clearly reinforce the notion that, while growth is necessary for the alleviation of poverty, it is not sufficient. On the basis of this evidence, it is clear that the increased income inequality which accompanied economic growth within Mpumalanga, served to dissipate the poverty-reducing impact of this expansion in output. The key challenge going forward, therefore, is the identification and elimination of the key constraints and bottlenecks that serve to prevent households from engaging fully in the economy and consequently keep many in desperate poverty.

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APPENDIX A

Other income in 2000 includes: Workmen's Compensation; Alimony, maintenance and similar allowances received; Regular allowances received from family members living elsewhere; Net income from hobbies, side- lines and part-time activities; Income derived from the sale of vehicles, property, etc; Payments received from boarders and other non members; Value of goods and services received by virtue of your occupation (Housing, Transport, Pension, provident, medical and annuity funds, Other); Gratuities and other lump sum payments; Claims; Non-refundable bursaries; Benefits, donations and gifts; Cash; Value of food received; Value of housing; Value of clothing; Value of other benefits, donations, gifts, etc.; Lobola/dowry received; Gambling, lotto winnings; and All other income not elsewhere specified.

Other Income 2005 includes: Workmen's compensation Funds; Alimony, palimony and other allowances; Other Income from Individuals; Income from Hobbies; Side lines and part time activities; Sale of vehicles, property etc; Payments received from boarders and other non members; good and services received by virtue of occupation; Claims; Stokvel; Non-refundable bursaries; Benefits, donations and gifts; Cash; Value of food received; Value of Housing; Value Of Clothing; Value Of Transport; Value of other benefits, donations, gifts etc; Lobola or dowry received; Income from gambling; Tax Refunds received; Income not elsewhere specified; Gratuities and other lump sum payments.

APPENDIX B

Table A - 1: Average Annual Growth in Expenditure at bottom and top of the Distribution, 2000 - 2005

Percentile	Average Annual Growth Rate
1	1.04%
2	-0.73%
3	-1.55%
4	-1.21%
5	-0.17%
6	-1.57%
7	-1.65%
8	-0.50%
9	0.18%
10	0.54%
95	4.67%
96	6.58%
97	8.67%
98	8.45%
99	12.82%

Sources: Own calculations, Statistics South Africa 2002, 2008.

Notes:
1. Population weights are not available for the 2000 and 2005 dataset. The population has been weighted by the household weight multiplied by the household size to obtain the population weights. Both sets of weights are 2001 Census weights.
2. Figures are annualised growth rates