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Poverty and Inequality in the First Decade of South Africa's Democracy: What Can be Learned from Panel Data?

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1   INTRODUCTION

During months leading up to the ten year celebrations of South Africa's democracy an intense debate took place concerning trends in the incidence and severity of poverty and inequality in the post-apartheid era. This debate was complicated by the multitude of methodologies applied to the analysis of poverty of inequality as well as by data problems identified in the available official statistics. Representatives of the South African government have questioned both the findings of both the official statistics agency and other sources. Adapting van der Berg and Burger, 2002, suggestions that poverty and inequality have increased were countered by referring to improvements in social expenditure and the impact that this has had on the 'social wage'.

Although a critical review of the various studies and their methodologies seem a necessity at some point, alternative data sources provide an opportunity for triangulation and contribute towards understanding the complex story of happened to poverty and inequality in South Africa between 1993 and 2004. Of particular use are studies that have tracked the circumstances of the same people during the period under review. Arguing the need for such panel data, May and Roberts (2001) described a panel data set that had been made available to researchers earlier that year. These data, known as the KwaZulu-Natal Income Dynamics Study (KIDS), were derived from households first surveyed in 1993 as a part of the national Project for Statistics on Living Standards and Development (PSLSD) and re-interviewed in 1998. A resurvey of the KIDS households in 2004 extends the information that is available by a further six years and now provides a three period panel study that spans the first decade of South Africa's democracy and the introduction of many policies intended to reduce poverty.

This paper briefly summarises some of the existing information on trends in poverty, inequality, employment and access to services from other data sources. The paper then describes the three waves of data collection for KIDS and then goes on to analyse transitions made by the surveyed households in terms of economic well-being and access to services and access to grants. The paper concludes by identifying important areas for further research that might improve the analysis and interpretation of the changes in poverty in the first decade of South Africa's transition.

2   INCOME DISTRIBUTION AND WELARE CHANGES 1993-2004: EVIDENCE FROM OFFICIAL STATISTICS

At PPP$11 240 per annum in 2001, South Africa's per capita GDP corrected for purchasing power parity (PPP) now places it as one of the 50 wealthiest nations and among the 35 largest economies in the world. Despite this, the UNDP ranks South Africa 17th out of 70 countries for which information is available in terms of the numbers of people living on less than PPP$2 (UNDP, nd). South Africa is also ranked 115th of 175 countries in terms of its Human Development Index in 2001 (HDI) down on its ranking of 93rd in 1992 (UNDP, 2003), and is one of a handful of countries which has experienced a decline in the HDI since 1995. This is largely the result of high levels of adult mortality and South Africans now have life expectancies among the 30 worst in the world and projections of mortality suggest that these will deteriorate further as deaths from the AIDS epidemic increase (UNDP, 2003; Dorrington et al, 2004).

Despite these striking social indicators, changes in the incidence and severity of money-metric poverty since 1995 have been the source of debate. Using the results of the 2000 Income and Expenditure Survey, Statistics South Africa suggests that both poverty and

inequality may have increased (Stats SA, 2002). Although the average annual per capita income in 1995 of R12 135 adjusted to 2000 prices appears higher than the per capita income of R11 755 per annum reported in 2000, this difference is not statistically significant. Furthermore, many analysts have raised serious concerns with the quality of the data collected by this survey, pointing to methodological and weighting problems and evidence of sloppy fieldwork and data processing (Meth and Dias, 2004:61; van der Berg and Louw, 2003:2).

A number of researchers have attempted to manage some of these data quality problems in order to examine the changing poverty profile of South Africa during the 1990's. Using methodologies to derive a cost-of-calories poverty line, Hoogeveen and Özler (2004:38) estimate that 12.6m South Africans were living on less than PPP$1 per day in 1995 compared to 14.4m in 2000, an increase of 1.8m people, and that 22.9m South Africans were living on less than PPP$2 per day in 1995 rising to 25.2m in 2000, an increase of 2.3m. They also show an increase in both the poverty gap index and the severity measure of poverty (0.11 to 0.13, and 0.05 to 0.07 respectively), while the headcount index increased slightly from 0.32 in 1995 to 0.34 in 2000 using the PPP$2 per day poverty line. Using data from other official statistics such as the October Household Survey (OHS) and General Household Survey (GHS) Meth and Dias (2004) employs a mix of procedures to adjust for the data problems and conclude that the case for an increase in the numbers of people in poverty seems convincing. The numbers of people in the lower of two expenditure groups identified as encompassing the potentially poor increased by about 3.5m people between 1997 and 2002 and it is estimated that there were 17.4m people in poverty in 2002, resulting in a headcount index of 0.38.

In an input paper to the 2005 Report of Development Bank of Southern Africa, May and Woolard (2005) use a version of the 2000 IES that was cleaned by Global Insight and subsequently by Woolard and then re-weighted by Simkins (as described in Simkins, 2004) and use the Household Subsistence Level estimated separately for urban and rural areas. Their results are shown in Table 1.

Table 1: Poverty measures based on the Household Subsistence Level, 1995 & 2000

	1995	2000
Headcount index (H)	0.32	0.49
Income Gap measure (P)	0.12	0.22
Sen Poverty Index (S)	0.24	0.39

Source: *May and Woolard (2005) calculations on IES 1995 and IES 2000*

All these measures support the argument that poverty has increased in South Africa, in terms of the proportion of the population who can be categorised as poor, the extent two they are poor, as well as the inequality that exists within the poor in that the Sen index advances towards the income gap measure over time

Increase social spending and improved services and infrastructure may offset this portrayal of increasing poverty by taking into account other aspects of well-being beyond simply income. Van der Berg and Burger (2002:10-11) show that social spending to the African population has increase from 51 per cent in the immediate transition period to 80 per cent in 1997. To the extent that they have been beneficiaries, this will have had an impact on the incomes of the lowest income groups. As an example, after taking account of cash and non-cash transfers to the poor from government in the form of pensions and the Child Support Grant (CSG), water, electricity, health care, housing, sanitation, education and transport (perfect targeting to every eligible beneficiary being assumed), Meth and Dias amend their estimate of the

increase in the numbers of poor between 1997 and 2002 from 3.5m to 2.7m people, a reduction of about 800 000 people (Meth and Dias, 2004)[2].

Turning to measures of inequality, May and Woolard (2005) provide a range of estimates depicting inequality in South Africa, most of which show some increasing inequality, with the exception of their own calculation that make use of per capita expenditure and those of Fedderke et al(2003) who make use of household expenditure. May and Woolard (2005) note that in all cases, South Africa's Gini coefficient remains among the highest in the world. Van der Berg and Burger (2002:10-11) attempted to take account of the shifts in social spending already mentioned in terms of their impact on the distribution of income adjusted for non-cash transfers. Noting that per capita incomes of the African elite have almost caught up with the white population, they calculate a Gini coefficient for South Africa of 0.66. When income is adjusted for South Africa's relative progressive taxes and for the strongly progressive non-cash transfers that are made, they conclude that the Gini coefficient can be re-estimated to 0.44. In particular, they conclude that fairly good targeting of Old Age Pensions and Disability Grants has resulted in rural areas receiving an unusually fair share of social spending compared to the situation in many developing countries. However, they do not attempt to measure the impact that this social spending might have had on the well-being of the poor, noting that the quality of the service delivered substantially determines this. As an example, while inequalities in terms of inputs to education have narrowed, the outcomes in terms of education attainment have not (van der Berg and Burger, 2002:18).

Data for the period between 2000 and 2004 are limited, but some initial findings suggest that the poverty rate may finally be on the decline. Van den Berg et al(2005) use data derived from the All Media and Products Survey (AMPS), survey more commonly used for market research, to show a substantial decline in rate, depth and severity of money-metric poverty during the period 1995 to 2004, but also show consistent and very high levels of inequality. Although Meth (2006) uses data from Statistics South Africa's General Household Survey and Labour Force survey to critique this result, he also concludes that it is likely that there has been a decline in the headcount index, albeit one that is far more modest.

From this analysis, by most accounts poverty appears to have persisted in South Africa during the 1990's in terms of consumption based poverty, with perhaps some improvement since 2000, but no sign of convergence between the incomes of the poor and non-poor. While some have argued that this does not take into account changes in the social wage, there is no consensus as to how to measure these. Attempts that have been made to do so suggest that the difference made by accounting for the social wage is not sufficient to change the overall trend of divergence.

Reacting to results such as those just discussed the South African government has correctly argued that poverty is multi-dimensional, and that access to services has the effect both of improving the well-being of poor households, and also of reducing their exclusion or vulnerability to adverse relations of inclusion. Examining the trends in this, May and Woolard (2005) provide four indicators of service delivery for the years 1995 and 2003 and compare changes in access by income group. The indicators that they use are the percentage of households with access to piped water (either inside their dwelling or on the stand), the percentage of households living in permanent structures, the percentage of households with electricity (from mains) and the percentage of children aged 7-17 enrolled in school. In the case of access to quality housing, all of the lower income groups have experienced marked improvements, with each expenditure group (except the very highest) experiencing an improvement of between 11 and 14 percentage points. In the case of access to electricity, the

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[2]/ Referred to as a social wage as an attempt to take into account government reaction to the Stats SA report.

improvements have been enormous and the three lower expenditure groups have all benefited in a very similar pattern. Improvements in access to piped water have been somewhat less well targeted towards the very poor. Whereas access to piped water increased from 28 per cent to 79 per cent (an increase of 51 percentage points) for the expenditure group R800 to R2499, the increase was only 40 percentage points for the lowest income group R0-R399. Finally, in the case of school enrolments, the increases have been highest among the poorest groups. From perspective then of basic service delivery, the gap between the poor and non-poor has narrowed in the post-apartheid era although it must be cautioned that these data do not comment on the quality of the service, or on whether the supply of the service has been disconnected. A similar result concerning improved access to services is reported by Bhorat et al(2004).

Interesting as these trends are, the cross-sectional data on which they are based cannot provide information on the changes experienced by individual households. Thus it is possible that while some households have benefited from the reforms in the post-apartheid period, others may have fallen back either as a result of economic or political reforms, or through broader economic and demographic trends. Panel data are required for this type of analysis. Longitudinal data are essential if one is to understand the movements into and out of poverty and the differences between transitory and chronic poverty (eg. Bane and Elwood, 1986; Hulme and Shepherd, 2003). Panel studies have the added benefit in that they can provide information on the various chains of events that begin when someone first gets sick with AIDS and extend long after their death (eg. Yamano and Jayne 2004). They can also provide reliable information on the initial characteristics of people who later die and on those of their households as well as on coping mechanisms that is likely to be missed by studies that only collect data from households where someone has died and they allow one to examine the longer-term effects of adult deaths on the welfare of surviving family members.

3   THE PSLSD, KIDS 1998 AND KIDS 2004

The Project for Statistics on Living Standards and Development (PSLSD) undertaken in last 1993 was the first nationally representative household survey in South African to investigate poverty, inequality and socio-economic dynamics (PSLSD 1994). The design of the study was similar to that of the Living Standards Measurement Surveys (LSMS) that have been undertaken in more than 100 developing countries. The main instrument was a comprehensive household survey that collected an array of information on the socio-economic circumstances of households. The 1993 sample was selected using a two-stage self-weighting proportional-to-population design using a sample frame based on the 1985 Census (PSLSD, 1994). An important component of the design was the definition of a household. According to PSLSD (1994), resident household members were defined as (i) those who had lived "…under this roof for more than 15 days of the last 30 days *and* (ii) when they are together they share food from a common source (i.e., they cook and eat together); *and* (iii) contribute to or share in, a common resource pool." The household was also defined to include non-resident members who satisfied conditions (ii) and (iii) but needed only to have lived "…under this 'roof' 'roof" or within the same compound/homestead/stand at least 15 days out of the past year."

Households visited by the PSLSD in KwaZulu-Natal province were re-surveyed from March to June, 1998 by the KwaZulu-Natal Income Dynamics Study now known as KIDS (May *et al*, 2000). In KwaZulu-Natal, the 1993 PSLSD data referred to 1558 households of all races located in 73 sampling points or clusters, 23 in the former 'white' province of Natal and 50 in the former homeland of KwaZulu. For KIDS in 1998, the white and coloured households were excluded from the sampling frame due to the biases in the sample that seemed likely

given the small number of them and the distribution of the clusters that were sampled. Eventually, the matched 1993 and 1998 waves of KIDS contained data on 1171 African and Indian households of the 1354 eligible households interviewed in 1993. Eligible households were those in which there key decision-makers resided who were termed 'Core' persons as us documented by May et al. (2000).

KIDS 2004 is the recently completed third wave of this panel study (May et al, 2005). Using the same approach as in 1998, the households of the core members of the original panel of households were identified for resurvey. Households where cores spilt during this period were followed up wherever feasible. Both of these households have been designated as 'C' households. In an important change to the tracking process, it was decided to refresh the panel by designating the adult children of core household members who have established their own households and who have children of their own 'next generation' cores and to attempt to survey their households as well. These have been designated as 'K' households. In addition, core member's children aged less than 18 years who are being cared for by other households were also tracked in order to investigate the welfare of children being cared for by other families and increase the number of children for whom longitudinal information is available. These are designated as 'N' households. This means that unlike in 1998, the household-level response rate in the third wave of KIDS incorporates not only households interviewed because they had living core members but 1993 "dynasties where all the core members had disappeared or died but information was obtained from 'next generation' or from the children cared for by other households that have arisen from the original households

The third wave of the study interviewed 867 households containing core members from 760 of the households contacted in 1993, representing 95 per cent of the households initially identified as traceable in the scan. For 180 of these 760 dynasties, information was also collected on one or more next generation households that had split off from them. In addition, one or more households were surveyed containing children fostered out by 132 of them. For these 760 dynasties, the next generation households interviewed in 2004 (K and N groups) add only to the individual-level and not the household-level follow-up rate. In total, information is available from 2004 for 74 per cent of the dynasties contacted in 1998 and 62 per cent of the eligible households interviewed in 1993.

4   INCOME DISTRIBUTION DYNAMICS AND CHANGES IN WELFARE, EVIDENCE FROM KIDS 1993-2004

Changes in income dynamics remain an important focus of KIDS and, using the new data, this section offers a first look at changing patterns of economic well-being over the first decade of the new South Africa. While interesting in their own right, these numbers are also provocative, demanding explanation for the patterns they portray. After presenting basic data on core income distribution dynamics, the evolution of access to basic services, and the economic well-being of the now independent adult children of KIDS households, the paper concludes by discussing alternative hypotheses that might explain the observed patterns and which require further analysis.

4.1   Income distribution and poverty dynamics for core KIDS cohort

As already mentioned, the KIDS data come from repeated surveys of a 1993 cohort of core economic decision-makers. Using data only on the households of those core people who have been observed in all three time periods, we find that the headcount index of poverty (FGT 0)increased from 0.52 in 1993 to 0.57 in 1998, before falling to 0.47 per cent in 2004. The poverty gap index (FGT 1)increases from 0.20 to 0.26 and improves to 0.22 while the poverty severity index (FGT 2) increases from 0.09 to 0.14 before recovering slightly to 0.12.

In calculating these measures, a household has been deemed poor if its monthly per-capita expenditures (inflated or deflated to 2000 prices) fell below the poverty line of R322 per month per person suggested for South Africa by Hoogeveen and Özler (2005).[3]

While the increasing availability of panel data has spawned new analytical methods and measures (see Carter and Barrett, 2006), transition matrices, which show how the fate of individual households evolves over time, continue to provide a compelling window into income distribution and poverty dynamics. Table 2 shows the transition over the full 1993 to 2004 period, whereas Table 3 shows the changes over the 1998 to 2004 sub-period. Both tables are based on a normalized real household expenditure measure, defined as total household expenditures, adjusted to 2000 prices, and divided by the Hoogeveen and Özler poverty line[4]. Normalized expenditures equal to one thus indicate that household expenditures exactly equal the poverty line for the household, a measure of two indicates that household expenditures represent a level of material well-being that is twice the poverty line, and so on.

Each household in Table 2 is assigned to a row based on its 1993 normalized expenditure measure. Thus, the first row contains the 129 households whose 1993 level of well-being was less than half the poverty line. In the second row are the 218 households whose level of well-being was greater than half the poverty line but less than poverty line. The other rows are defined similarly using the well-being limits shown in the table.

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[3]/ Hoogeveen and Özler suggest several options and we have chosen to use their 'lower bound' estimate. Somewhat different results emerge if the income data are used. As an example, the headcount index is shown to be higher in each year, but to have declined between 1993 and 1998 rather than having increased. However, using the approach adopted by Carter and May (2000) to estimate asset-based poverty, income is found to be poorly predicted by assets when compared to expenditure. The adjusted R Square reported for the models generated for each year are low and the predicted income is weakly correlated with actual income. For this reason, and in line with common practice, we have chosen to continue to depict household well-being using the expenditure data collected in the survey.

[4]/ The South African Rand experienced substantial currency fluctuations during part of the survey period, and in mid-2000, was equivalent to US$0.146 compared to US$0.163 in mid-2004, US$0.158 in mid-1998 and US$0.298 in mid-1993.

Table 2: **1993 to 2004 Transition Matrix**

		< 0.5 PL	< 1PL	<1.25 PL	<1.5PL	<2.5PL	>2.5PL
<0.5PL *(n=129)*	% of Row	**38.0**	34.1	10.9	3.1	8.5	5.4
	1993 NE*	0.4	0.4	0.4	0.4	0.4	0.4
	2004 NE	0.3	0.7	1.1	1.4	1.8	3.6
< 1PL *(n=218)*	% of Row	26.8	**31.9**	11.4	10.4	11	8.5
	1993 NE	0.7	0.7	0.7	0.7	0.7	0.8
	2004 NE	0.3	0.7	1.1	1.4	1.9	4.2
<1.25 PL *(n=111)*	% of Row	26.1	27	**12.6**	1.8	16.2	16.2
	1993 NE	1.1	1.1	1.1	1.1	1.1	1.2
	2004 NE	0.3	0.7	1.1	1.3	2	5.1
< 1.5 PL *(n=69)*	% of Row	11.6	20.3	5.8	**7.2**	18.8	36.2
	1993 NE	1.4	1.3	1.3	1.3	1.4	1.4
	2004 NE	0.4	0.7	1.1	1.3	1.9	5.3
< 2.5 PL *(n=161)*	% of Row	10.6	15.5	8.1	4.3	**23.6**	37.9
	1993 NE	1.9	1.8	1.8	1.7	1.9	2
	2004 NE	0.4	0.8	1.1	1.4	2	5.2
>2.5 PL *(n=79)*	% of Row	1.3	10.1	3.8	3.8	7.6	**73.4**
	1993 NE	4.8	3.5	3	3	3.4	5.2
	2004 NE	0.3	0.7	1.1	1.4	2	8.4

* NE indicates real per-capita expenditures that have been normalized by the Hoogeveen and Özler (2005) poverty line.

The columns of Table 2 are defined using households' 2004 level of normalized well-being. and thus permit us to see the fate of each household over the 1993 to 2004 period. Looking across the first row, 38 per cent of the households whose 1993 standard of living was less than half the poverty are just as poor in 2004. Another 34 per cent of these households have modestly higher standards of living in 2004 (still below the poverty line, but above half of it). The remaining 28 per cent of these households now enjoy standards of living in excess of the poverty line. In addition to the percentages of households in a specific transition category, each cell of the table reports the average 1993 and 2004 standardized expenditures for households in the cell. For example, the households that made the transition from less than half the poverty line to more than 2.5 times the poverty line had average expenditures equal to 40 per cent of the poverty line in 1993, and equal to 3.6 times the poverty line in 2004. Finally, the main diagonal elements of the transition matrix are highlighted in bold and show the fraction of households in each row that have not changed their well-being category (for example, 73.4 per cent of households that had living standards in excess of 2.5 times the poverty line in 1993 were still above that level in 2004.

Table 2 as a whole reveals that several distinctive patterns of mobility may exist:

1. *Chronic and Transitory Poverty*
   More than 60 per cent of households that were poor in 1993 were also poor in 2004, represent the presence of significant chronic poverty as defined by Hulme and Shepherd (2003). At the same time, there is some upward mobility amongst those who were initially poor, although there is also substantial downward mobility (53 per cent) amongst those just above the poverty line. These figures are consistent with the existence of a core group of persistently poor people, surrounded by a somewhat smaller group of sometimes poor who move in and out of poverty over time, the transitory poor again following the approach of Hulme and Shepherd. This is an argument made earlier by Carter and May (2000).

2. *Instability and Bifurcation amongst the Nearly Poor*
   The two expenditures groups just above the poverty line appear to be quite unstable. Roughly 40 to 45 per cent of households that had expenditures between 1.0 and 1.5 times the poverty line in 1993 enjoyed expenditures more than 1.5 times the poverty line in 2004. Another 40 per cent or so of these households had fallen below the poverty line in 2004, with the remaining 10 to 15 per cent holding onto those middle positions. This pattern of apparent bifurcation (with some households slipping down, perhaps to a low level equilibrium and others rising, perhaps toward a high level equilibrium) is consistent with that identified by Adato, Carter and May (2006) based on the 1993 to 1998 KIDS data.

3. *Real Income Growth at the Top of the Income Distribution*
   Consistent with studies of the earlier rounds of the KIDS data, those households who were well above the poverty line in 1993 largely maintained their positions or moved ahead over time. On average, households that had expenditures more than 2.5 times the poverty line in 1993 had 61 per cent income growth over the 11 years of the study. Nearly 40 per cent of the households that had expenditures in 1993 between 1.5 and 2.5 times the poverty line moved ahead substantially over time and mean expenditure of this group grew by a massive 160 per cent. Again consistent with the findings by Adato, Carter and May (2006), there is little downward mobility amongst these better-off groups.

Not surprisingly, the combined effect these mobility patterns is to increase income inequality, a finding consistent with those of Hoogeveen and Özler (2004) and many others analysing South Africa's income distribution since 1995. Among the KIDS households, the Gini coefficient measure of inequality in the distribution of household expenditures has risen steadily from 0.42 in 1993, to 0.50 in 1998 and a remarkably high 0.57 by 2004. As discussed by Carter and May (2001), this increase in income inequality is neither surprising nor an unambiguously bad thing, although May, Carter and Padaychee (2004) caution that at some point high levels of inequality may impact upon economic growth rates and social stability.

While Table 2 presents an overall picture of the evolution of economic well-being for a cohort of KwaZulu-Natal households over the first decade of the post-apartheid economy, the KIDS data permit us a closer look at that history. As analyzed elsewhere (May *et al.*, 2000; Carter and May, 2001), the 1993 to 1998 period saw substantial increases in poverty and slippages at the bottom end of the income distribution, with substantially more improvement at the top end of the income distribution. The 1998 to 2004 period saw some moderation in this trend. Table 3 displays a transition matrix using the core KIDS households for the 1998 to 2004 period. This matrix is constructed identically to Table 2, although only the percentages of households in each cell are reported.

Table 3: 1998 to 2004 Transition Matrix*

		< 0.5 PL	< 1PL	<1.25 PL	<1.5PL	<2.5PL	>2.5PL
<0.5 *(n=221)*		**40.7--**	37.6	4.5	3.2-	8.6+	5.4++
<1 *(n=275)*		25.5---	**32.1-**	11.7	8.4	13.5++	8.8++
<1.25 *(n=82)*		17.3	24.7---	**9.9**	11.1-	22.2+++	14.8+
<1.5 *(n=68)*		16.2++	16.2---	25+++	**8.8**	13.2	20.6+
<2.5 *(n=109)*		3.7-	12.8---	11.9	5.5-	**22.9-**	43.1+++
>2.5 *(n=113)*		0	5.3	3.5-	2.7	11.5--	**77+++**

* Changes from the 1993 to 1998 transition matrix are indicated by '+'s' and '-'s.' An element which is between 2.5 and 5 percentage points lower is indicated by a '-'; between 5 and 10 percentage points lower by a '--'; and, greater than 10 percentage point decrease by a '---'. Similarly, '+' means between 2.5 and 5 percentage higher; '++' between 5 and 10 percentage points higher; and '+++' more than 10 percentage points higher.

In addition to these basic percentages, the table also includes a simple coding scheme that indicates how the 1998 to 2004 transitions differ from the 1993 to 1998 transitions. As can be seen, much less downward mobility occurs among the poorest households in the later period than during 1993 to 1998 period. For example, while 24.7 per cent of households that were just above the poverty line in 1998 had fallen below the poverty line in 2004, this fraction is more than 10 percentage points lower the corresponding transition figure over the 1993 to 1998 period (the figure from the 1993 to 1998 transition matrix, not shown here, is 38 per cent). More generally, downward mobility and chronic poverty rates for the three lowest well-being categories (while still high) are not as unfavourable as they were for the earlier sub-period of the KIDS study.

The fourth well-being category (those households whose 1998 expenditures were between 125 per cent and 150 per cent of the poverty line) shows a mixed pattern, with some elements of downward mobility increasing and others decreasing. Finally, the pattern of upward mobility amongst the relatively well-off (which was already apparent in the 1993 to 1998 period) has become even more pronounced during the more recent period.

Figure 1 provides contour graphs showing the joint distribution of well-being for two of the pairwise comparisons that are possible (93 with 98; 93 with 04). These graphs may be though

of a mobility planes, and as with the transition matrix, the axes refer to a normalised expenditure measure. In this instance, the x-axis uses a logarithmic scale to display a household's 1993 consumption as a percentage of its subsistence needs. The y-axis displays the same measure for 1998. Hence a household whose expenditures exactly equals its subsistence needs will have a value of zero and while a household on the 45° line will not have changed its position. The bottom left hand quadrant of each graph represents households who remained below the poverty line in both periods, and who might be through of as being chronically poor, again in the manner described by Hulme and Shepherd (2003), while the top left and bottom right quadrants are the transitory poor and the top right are the never poor. The spread of the contours reflects the distribution of well-being. The overall picture is that the 1998-2004 transition undid some of the downward movement seen in the 93-98 transition as documented by Carter and May (2001). The mode of 1993-2004 transition lies to the right of the 45° line and the 'mountain; is more symmetric, suggesting that there has been an improvement in upward mobility for close to the poverty line. Nonetheless, there is still plenty of spread indicating downward mobility and transitory poverty for many, as well as widening inequality. We will return to this mode of analysis to examine the impact of grants on the distribution of well-being.

Figure 1: Joint Distribution of Well-Being – 1993, 1998, 2004
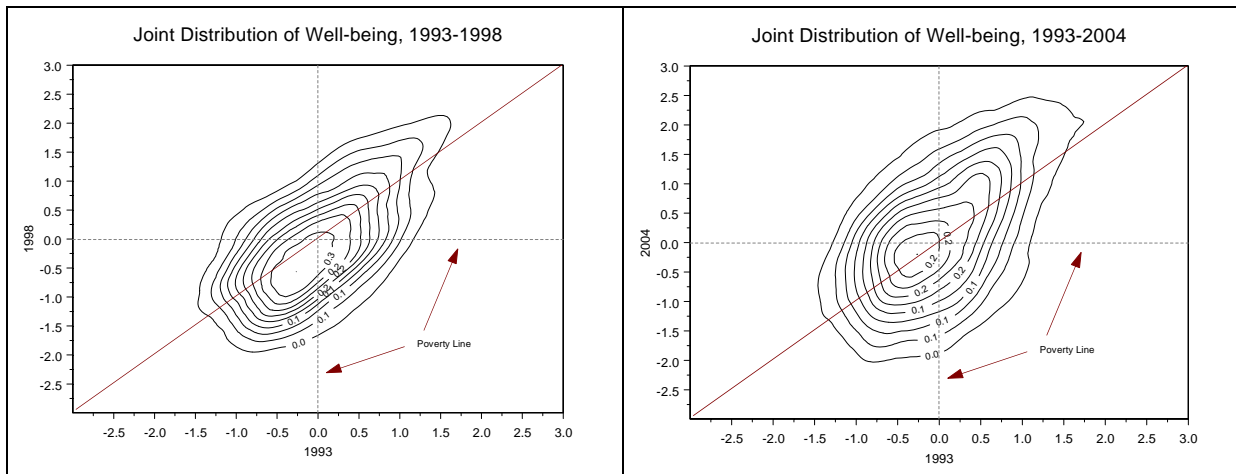
A number of possible reasons could explain the evolving distribution of economic well-being in the KIDS sample. After looking at other indicators of the well-being of the core KIDS cohort, and of their now adult children, we will return at the end of this section to consider these alternative reasons.

4.2   Household services and basic human needs

Improvements in the delivery of services have been identified by Statistics South Africa as an important achievement of the post-Apartheid government (Stats SA, 2002). As is shown in Table 4, positive changes have taken place in access of the surveyed households to the set of basic needs indicators gathered by all three waves of KIDS.

Table 4: Basic needs indicators for core KIDS households

Year	Have electricity connection	Live in formal house	Piped water supply	Toilet on stand	Own house	Median people/ room
1993	42.5	67.3	37.2	76.6	87.0	1.4
1998	64.8	n/a	41.5	67.2	88.7	1.2
2004	74.5	85.2	50.7	86.3	90.4	1.0

The most notable progress is in electricity connections, which improved by 75 percentage points between 1993 and 2004, from 43 per cent of the sample to 75 per cent. This is followed by the percentage of the sampled households who live in formal housing, which increases from 67 per cent to 85 per cent of the sample. Improvements in access to piped water has been more modest, while the percentage of households with access to a toilet in the dwelling or on the stand inexplicably declines between 1993 and 1998, perhaps due to definitional changes during fieldwork, before increasing to 86 per cent of the sample. Finally, some progress has also been made in the percentage of households who report owning their house and in room density, measured as the median number of people per room. Some caution is needed in interpreting these roles since information was not gathered concerning disconnections, while home ownership may not imply that the building can be sold or used as collateral arising from the form of tenure rights that are involved. Nonetheless, the picture suggested by the KIDS data concerning services is one of progress in a number of the key goals outlined by the Reconstruction and Development Programme in 1994.

4.3 KIDS: the next generation

The next point for this paper to consider is whether this progress is evident in the fortunes of the next generation of the KIDS sample, those that we have referred to as the K households. Cumulative distribution functions (CDF) are a convenient way of comparing the income levels of different samples. **Error! Reference source not found.** provides the CDF of a sub-sample of the KIDS data. In this figure we depict the 2004 income distribution of the adult children of the original KIDS sample who have established their own homes with their own children (K households) whose parents were still alive in 2004. The figure compares this distribution to that of the parental homes from which these K households came for 1993, 1998 and 2004. The intention is to map the progress of the next generation as compared with that of their parents and, once again, we employ the normalized real household expenditure measure described earlier.[5]

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[5]/ The maximum of the scale has been cut at 7 times the poverty line in order to better show the data at the lower end of the income distribution.

Figure 2: Cumulative Expenditure Distribution: 1993-2004
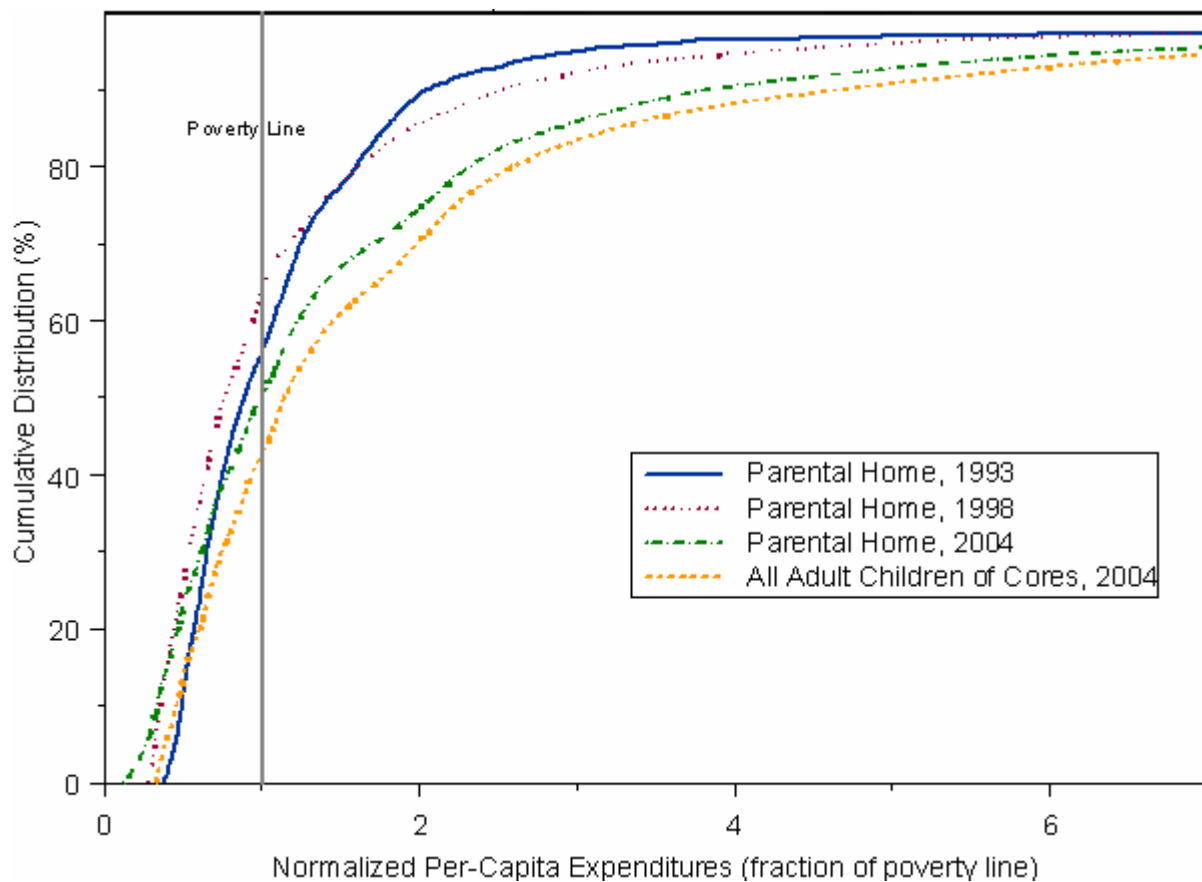
As before the CDF shows the catching up that has occurred between 1998 and 2004. A concern might be that this result is due to higher attrition being experience among poorer households between the second and third waves of KIDS. However, when CDF of per capita expenditure for 1998 is compared for the panel 1993-98 and for the full 1993-2004 panel, the null hypothesis that the CDF is the same in both datasets cannot be rejected[6].
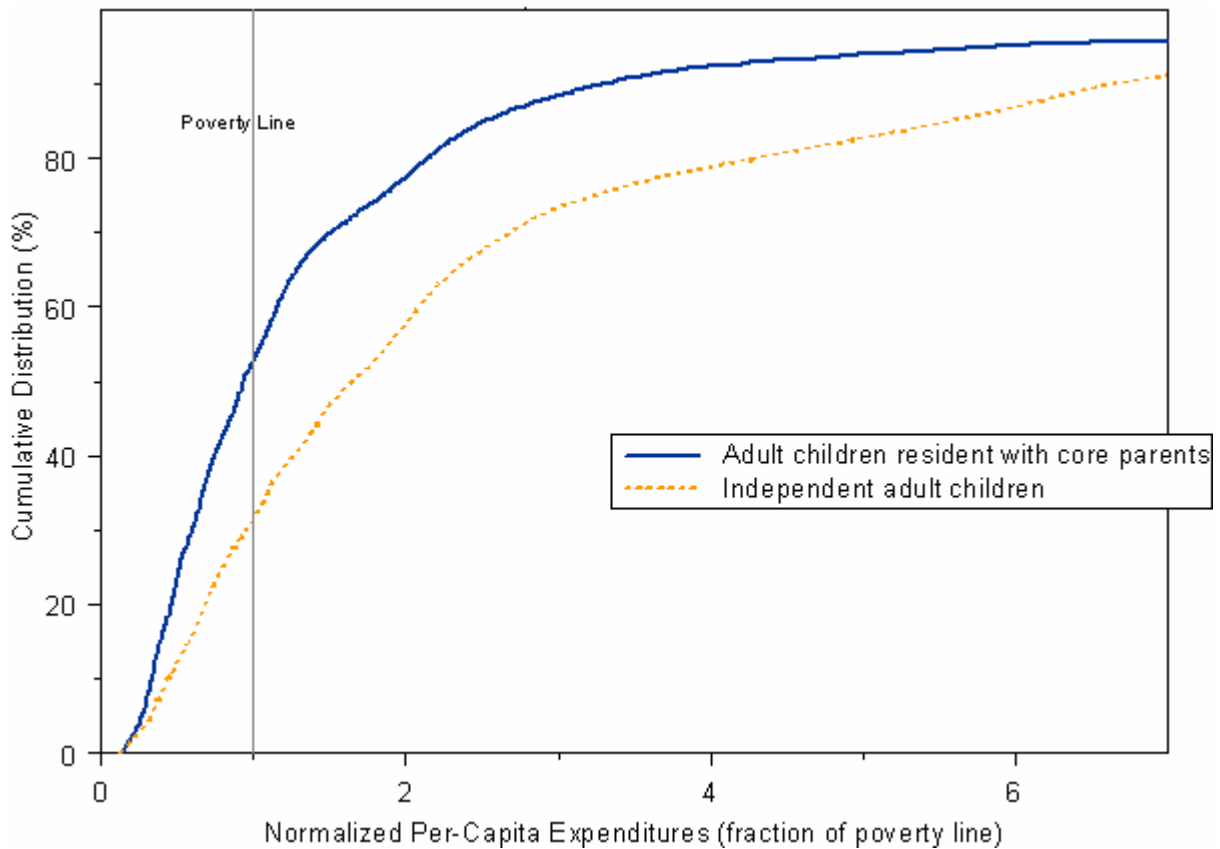
As far as the next generation K households are concerned, while the initial impression suggested by Figure 2 is that the independent adult children are doing noticeably better than their parents (their CDF lies below each of the CDF's for the parental homes at all per-capita expenditures), the story is more complex. First, the sample of independent adult children may not be representative of all children of the KIDS households who are of a similar age since not all adult children have been able to graduate to having their own homes. It may well be the more successful, perhaps better educated and higher earning children who have been able to successfully complete the transition to adulthood by establishing their own households. Poorer, less-educated children may have remained in the parental household having been unable to afford the costs of establishing an independent household such as *ilobola* (brideprice), the cost of obtaining and setting up a home or the cost of starting a family.

Supporting this idea, the situation of the sub-samples of adult children and their parental homes is quite different from that of all core households in the KIDS sample. The parental group is currently somewhat wealthier, and they have been so historically.

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[6]/ The value of the Kolmogorov-Smirnov test is 0.0399 and the p-value is 0.426.

As already mentioned, K questionnaires do not give us a representative sample of the next generation, these are more mobile households who may have done well and are thus able to move out of their parents' home. Those who remain behind may well be the less well-off or less mobile. A comparable cohort that represents this group is the resident children of core people who were 18 or older in 2004, but who were too young or without children in 1993/98 to have been declared cores. By duplicating the CDF reported above for this group and comparing them to the K households, we are able to reveal the difference between the K households, and a group who may represent 'unsuccessful' or 'pre-' K households.

Figure 3: Economic Well-Being of the Next Generation

The figure confirms that K households are better off that the households in which adult children are still resident with core parents. The core households in the graph are only for those dynasties that have next generation represented and include all young adults irrespective of whether they had children of their own. The result does not change if only those with children are included, and the CDF does not appear to be skewed by including only dynasties that contain a next generation.

Part of the explanation for this result lies in the characteristics of the 'next generation' who remained with the core parent (the 'pre-K' households), when compared to the K households.

Table 4: Characteristics of 'K' and 'Pre-K' Households

Characteristics	Stayed with core	Started their own family
Years of schooling	8.93**	9.77
Prop. with tertiary education	.06**	.09
Prop. with matric	.27**	.393
Age	33.7**	35.7
Formally employed (%)	9.0**	31.0
Monthly wages b/	2600	2800
No. of negative shocks a/	1.2	.87
No. of positive shocks a/	1.0**	.84
a/ Shock in the last 6 years b/ Median		
** Differences are statistically significant.		

The next-generation individuals who started their own family are more educated than those who stay with the core, they are also a little older and, on average, received less shocks (both negative and positive). They also tend to have a substantially higher labor participation rate. Hence, human capital differences, employment and less exposure to risk may explain why the ones who moved out got ahead in 2004.

5   KIDS: THE IMPACT OF GOVERNMENT TRANSFERS

Finally, in order to take a look at the impact of government programs on income distribution/well-being, we formed an expenditure measure purged of the effects of government transfers and taxes. We did this by taking measured expenditure, subtracting out government transfers (OAP, CSG, and so forth) and adding back in taxes paid (municipal rates plus reported payroll taxes). The value of housing or other such subsidies has not been netted out. In a few cases this resulted in negative net expenditures which have been truncated to zero on the assumption that these represent measurement error. To keep things in balance, the median measurement error defined in this way was given to all households.

A couple of comments are in order. Firstly this measure is similar to what Atkinson (1999) has used in his effort to distinguish the role of market forces versus government in driving increasing inequality in the OECD countries. Atkinson argues that market forces are driving large increases in inequality, and that while the reduction of government benefits explains some of the increase, he suggests that other dynamics play a role. He looks at this by graphing over time the true Gini versus the market based Gini. The difference between the two at any point in time gives the net effect of government on inequality.

A major caveat needs to be made about this method. In netting out the government, we are doing a purely accounting procedure and in no way do we account for the behavioural effects of government programs. So, for example, it is very unlikely that households whose expenditures are less than or equal to the government transfers would do nothing if those transfers did not exist. Presumably they would try to work more, get more help from family, etc. The net effect of ignoring endogenous labour supply and other response to government programs is that we tend to overstate the effect of government on the progressivity of the income distribution. Nonetheless, with this warning, it is still interesting to see the role of government programs in this way.

Table 5: Gini Co-Efficient of Actual and Market Expenditure[7]

Year	Actual Per Capita Expenditure	Market Per Capita Expenditure	Inequality Effect
1993	0.4858	0.5335	~4 points
1998	0.4980	0.5684	~7 points
2004	0.545	0.631	~8.5 points

Two trends are apparent from this analysis: the sharp upward drift in market-generated inequality (subject to the caveats above) which is line with global patterns of inequality. This is offset to some extent by the increasing inequality reduction effect achieved by the South African government through the transfer payments that are made. It is noteworthy that the biggest change in this effect took place between 1993 and 1998, which points towards improvements in the amount and coverage of the Old Age Pension (OAP). Overall, the correlation between grants received and our market-generated expenditure measure is -0.30, suggesting that the system works in a progressive way despite limited means-based targeting of the OAP.

We can now return to the mobility graphs described earlier to examine what mobility would have looked like without the change in government programs. The pictures are subject to the same weaknesses discussed above in that they assume no change in behaviour even if the program were eliminated.

Figure 4: Actual and Market Generated Joint Distribution of Well-Being
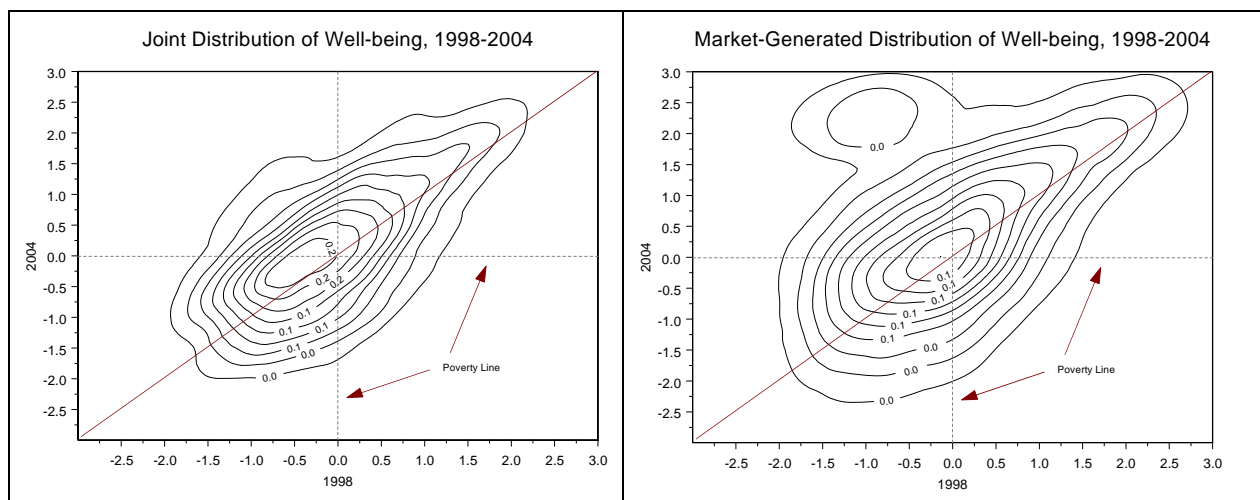
The mobility planes reveal that that market generated income leaves the mode below the 45-degree line, and result in a very spread out distribution, whereas the impact of government transfer programs lifts the mode above the immobility line and reduce the spread of the graph. In addition, transfers do succeed in lifting up the very lowest part of the distribution in the poor-poor quadrant.

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[7]/ If only transfers are netted out and taxes and rates are not added back, the Gini co-efficient for market per capita-expenditure is 0.613, still indicating a substantial redistributive impact of government transfers.

6   CONCLUSION

Trends in poverty during the first 10 years of South Africa's democracy have been obscured by the absence of a suitable and regular official poverty study, and by poor data collection and processing in the official statistics that are available. Nonetheless, most 'panel-beating' studies using both these and other national studies point to an increase in money-metric poverty until 2000. Data are scarce for the period subsequent to this, but it seems possible that this trend has at last been reversed, and that at least the poverty headcount index may have improved.

Although a comprehensive review of the different methodologies would be helpful, as would the introduction by Statistics South Africa of a specialised poverty and inequality study, other data sources can also shed light on the actual changes that occurred between 1994 and 2004. Panel data, in which the same households are re-interviewed are an especially useful source of information since these studies can reveal what has happened to individuals and households over time. Although no longer the only panel study in South Africa, the KIDS data base is unique in that the first wave of data collection predates the democratic elections in 1994.

In common with most national findings, the pattern of income distribution among the KIDS cohort is one of increasing poverty and inequality between 1993 and 1998. That said, there has been a partial reversal of some of these trends in the post-1998 period, with a decline in the headcount index to below the 1993 levels, and a recovery in the poverty gap and poverty severity indices. Nonetheless inequality continues to rise. Also somewhat hopeful is the improved well-being of at least some next-generation households, although those of the next-generation who have been unable to accumulate sufficient human capital, and have been unable to obtain employment remain in poor households with their parents, perhaps trapped there unless their circumstances change.

There are a number of possible explanations for these trends. Firstly, government expenditure on transfer payments increased throughout the post-Apartheid period, while the introduction of the Child Support Grant has dramatically increased the number of recipients of such grants. This is partly reflected in the KIDS data, which show that the amount of transfers per-household have doubled, although some of the explanation will no doubt lie with the overall aging of cohort. A simple accounting exercise using the KIDS data reveals that these grants have contributed towards dampening the impact of market-generated inequality. In addition to public action, a second area for analysis is then on the operation of the markets, particularly the labour market and the expansion or contraction of employment and change in wages for skilled as compared to less-skilled workers.

In line with other studies, KIDS also reports a substantial improvement in access to services, which may have enabled other improvements in well-being. This might include the reduction of the time poverty observed by Carter and May (1999), improved health status leading to improvements in the capacity for work, and income generating activities facilitated by access to services, such as from access to electricity.

Finally, the impact of multiple deaths preceded by a long illness is likely to have had a negative impact on household well-being, incomes and wealth. Mostly likely due to HIV/AIDS for the young adult population, these deaths will bring not only costs but apparent benefits through reducing the size of the family, furthering obscuring poverty trends in South Africa.

Fruitful avenues for future research then include: carefully measuring the impact of the government transfers; investigating long term mobility and its causes; examining inter-

generational poverty and mobility trends; the multiplier impact of the provision of services and finally untangling the impact of HIV/AIDS on household well-being.

Although it was never intended to become a panel survey, the effort put into the design of the original PSLSD has enabled an important and unique data resource to be developed for socio-economic and demographic analysis that remains relevant a decade after the data were first gathered. The updated three-wave KIDS data are scheduled to be placed into the public domain in January 2006 and can then be downloaded at no cost from http://sds.ukzn.ac.za/.

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