Snakes and Ladders and Loaded Dice:
Poverty dynamics and inequality in South Africa between 2008-2017

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Introduction

Poverty is experienced in two dimensions: over time and in space. In the developing country context, poverty analysis is most often undertaken using cross-sectional survey data. As long as this data is representative at a certain geographical level (local, regional or national), it can meaningfully illuminate something of the extent, depth severity and correlates of poverty in space, at a single point in time. However, poverty is not experienced as a static and stable state – it is experienced as a dynamic phenomenon. That is, households move into and out of poverty over time, remain trapped in poverty, or are able to keep their heads above water. Reflecting this dynamic nature of poverty, much of the economic behaviour of households is determined by this dynamism: Even poor households shape their economic decision making around not merely meeting basic needs in the present, but also attempting to plan ahead to move up and out of poverty while at the same time trying to prevent descents into deeper poverty. In this sense, a cross-sectional and static perspective on poverty, by missing this dynamic element, is fundamentally limited in understanding the nature and determinants of poverty.

Panel data, which follows individuals (or households) over time, provides a way of incorporating a dynamic perspective into the analysis of poverty. While nationally representative panel data is rare in developing countries, South Africa is fortunate to have a nationally representative panel study spanning almost 10 years. The National Income Dynamics Study (NIDS) collected its first round of data in 2008 from a sample of approximately 28,000 individuals, and returned to these individuals approximately every two years, with the latest round of data having been collected in 2017. The availability of this data provides researchers a unique opportunity to undertake poverty analysis which is not blind to the crucial dynamic element.

This paper draws on a body of research which the authors have produced between 2016 and 2018 using the first four waves of NIDS data (Zizzamia, Schotte, Leibbrandt and Ranchhod, 2016; Schotte, Zizzamia and Leibbrandt, 2017a, Schotte, Zizzamia and Leibbrandt, 2017b, Finn and Leibbrandt,

2017, Finn, Leibbrandt and Ranchhod, 2017, Schotte, Zizzamia and Leibbrandt, 2018, Schotte, 2018; Zizzamia, 2018). This paper is structured around three aims: First, the key empirical findings of this existing body of work are brought up to date by exploiting the full five waves of data now available. Since methodological details are fully covered in this existing work, in this paper we do not cover these methodological specifics, and instead refer interested readers to the relevant papers.

Second, this paper aims to take stock of the state of the art of poverty dynamics research in South Africa by showing how this research has advanced our understanding of the South African poverty landscape in three important dimensions. These are:

a. By observing the same individuals at multiple points over time, we are able to understand what proportion of poverty observed in a cross-section is chronic. Not only can we now understand how much of the experience of poverty in South Africa is chronic, but we can also learn what some of the key correlates of chronic poverty are – such as the demographic profile and geographic concentration of the chronically poor. A corollary of our ability to illuminate the extent and nature of chronic poverty is that we are also able to understand how much of cross-sectional poverty is transient – that is, more likely to be short-lived. Since chronic poverty and transient poverty often affect different populations, and affect these different populations differently, understanding the correlates of chronic versus transient poverty is essential for designing effective policy tools to target poverty alleviation measures appropriately. For instance, chronic poverty associated with structural unemployment in rural areas will elicit a different policy response compared to transient poverty associated with employment volatility in urban areas.

b. In the same way that we identify those households that are poor, but fall within the ranks of the transient poor, we are also able to identify those *non-poor* households who find themselves in a position of economic precariousness – teetering on the brink of poverty and facing a high likelihood of falling. While a static perspective uses a monetary poverty line to carve a clear distinction between the poor and non-poor, we have shown that adopting a dynamic perspective blurs the distinction between the transient poor and vulnerable non-poor who straddle the poverty line. Households in these two groups frequently swap places, suggesting that the poverty line used to divide these groups is, in a dynamic sense, little more than a statistical artefact which belies the structural affinity of these two groups. These findings motivate expanding the South African poverty literature to deal with chronic

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poverty and economic precarity as related but distinct concepts. Throughout our work, we find that the quality and stability of vulnerable households' attachment to the labour market is a key determinant of whether they are currently poor/non-poor and whether this position can or cannot be sustained.

c. A central element of our existing work is on using NIDS panel data to identify South Africa's "middle class". We define the middle-class as that group of non-poor households which are distinct from the vulnerable non-poor in the sense that they are unlikely to fall into poverty over time. The availability of panel data has allowed us to operationalise this notion by using past waves of data to predict household's vulnerability to poverty based on household and individual level characteristics. We have found that relatively few South Africans are middle class, being both not poor and not vulnerable to falling into poverty.

Finally, we take the opportunity in this paper to discuss some of the open questions in the dynamic study of poverty and inequality in South Africa. In particular, we suggest some ways in which the study of inequality dynamics in South Africa (and other developing countries, as the availability of panel data gradually increases) might be informed by the existing body of research on poverty dynamics. More precisely, in our existing work we have framed our investigation into the three key dimensions of poverty dynamics research discussed above – chronic poverty, vulnerability, and the middle class – through the lens of social stratification. This perspective brings into focus the forces which determine (dis)advantage beyond a narrow money metric – that is, the multidimensional factors through which individuals and households are empowered to achieve upward mobility and prevent downward mobility. Framing poverty dynamics in this way is useful in that it facilitates an understanding of how these multiple factors, which reflect deeply rooted and structured inequalities, are consequential in determining mobility patterns. In this way, we have attempted to bridge the gap between state of the art poverty dynamics research and the conceptualisation of inequality. However, this attempt has not moved far beyond a conceptual contribution to the state of inequality research. In particular, serious work remains to be done in matching these conceptual innovations with a theoretically robust and empirically operationalizable way of measuring inequality in a way that takes the dynamics of poverty into account.

This paper is structured as follows: A first section surveys the existing literature on poverty and inequality dynamics in South Africa. The second section provides a brief description of the methods and data used in these studies, and which of these are used directly in this paper. The third section presents

descriptive statistics. The forth section reports results relating to chronic poverty in South Africa. The fifth section focusses on vulnerability and the determinants of poverty transitions. The sixth section covers issues relating to the definition and characteristics of South Africa's stable middle class and elite. A final section raises several of the open questions in the intersection between poverty dynamics, social stratification and inequality, and suggests some avenues through which future research may be able to find answers. This final section also concludes.

Section 1: Literature review

An established literature exists on the patterns and determinants of poverty in post-apartheid South Africa (see Finn et al. (2014) for a short review). The general consensus is that, since the democratic transition in 1994, substantial progress has been made in reducing the depth of poverty in South Africa, largely due to redistributive transfers in the form of government grants (Leibbrandt et al., 2011). While there has also been some progress in reducing the incidence of poverty, this has been slow, with poverty rates remaining exceptionally high for a middle-income country (Leibbrandt et al., 2011). In 2017, Stats SA reported that in 2015, 55.5 percent of the South African population could not afford to meet their basic needs – down from 66.6 percent in 2006, but up from 53.2 percent in 2011 (Stats SA, 2017).

However, as noted in the introduction, these cross-sectional perspectives are limited in the set of questions they are able to answer. Where poverty is experienced as a game of snakes and ladders for households, these studies remain blind to the "snakes" that lead households to fall into poverty and the "ladders" which facilitate poverty escapes. Put differently, a fundamental shortcoming of most existing analyses is that they are often blind to the fact that poverty is *lived* in a world of risk and uncertainty (Dercon, 2006). Poverty is not a static, timeless state – it is a dynamic and evolving phenomenon, with a past and a future (Calvo and Dercon, 2009).

The first attempts at using panel data to investigate the dynamics of poverty in South Africa were undertaken in studies which exploited the panel dimension of South Africa's first household panel survey - the KwaZulu-Natal Income Dynamics Study (Carter and May, 2001; Aliber, 2003; Woolard and Klasen, 2005; Adato et al., 2006; Adato et al., 2007 *inter alia*). Aliber (2003) focuses on the dynamics of poverty below the poverty line, decomposing poverty into a chronic and transient component. He finds that 18-24 percent of South African households are chronically poor, and that structural unemployment is largely responsible for this chronic unemployment. Carter and May (2001), on the other hand, argue

that the concepts of transitory and chronic poverty are ill-suited to understanding the dynamics of poverty because this conceptual distinction is unable to distinguish between, on the one hand, structural mobility due to asset accumulation or dissolution, and, on the other hand, stochastic mobility due to temporary shocks. Thus, they propose a distinction between structural and stochastic poverty based on endowments, where structural mobility leads to a change in permanent income while stochastic mobility is expected to be temporary. Drawing on these distinctions, they find that the majority of those who remained poor and fell into poverty were "trapped" in structural poverty, and similarly, that the majority of movements out of poverty were stochastic.

Woolard and Klasen (2005), also using KIDS data, decompose the determinants of poverty transitions into their demographic and economic components. They find that about one quarter of movement is due to demographic events, and the rest due to economic events. Amongst economic events, changes in employment are clearly dominant – a symptom of unemployment and a high degree of churning in the labour market. Further, they find suggestive evidence that those in large households and those with no access to or experience in the labour market are trapped in chronic poverty. A small mixed-methods literature using KIDS exists which has been able to shed light on the complex determinants of household dynamics and the role of social capital in determining economic resilience. Adato et al (2006;2007) combine qualitative methods with KIDS to explore the role of social capital in determining resilience to poverty and upward mobility. They find that social capital tends to smooth consumption and stabilise welfare, thereby preventing downward mobility, rather than providing a mechanism for promoting upward mobility.

These early studies were, however, limited by the lack of availability of nationally representative panel data. KIDS was a two-wave panel study, but only followed 1,200 African households in the KwaZulu-Natal province, thereby limiting its ability to reveal much about poverty dynamics in South Africa as a whole.

Finn and Leibbrandt (2013, 2014, 2017) are the first to use NIDS to investigate poverty dynamics in South Africa. They show that about 30 percent of the South African population is chronically poor, and that single parent households with children have the highest poverty rates. Like Woolard and Klasen, Finn and Leibbrandt find that race, household size and labour market insertion are the most important determinants of poverty status and that changes in household size and labour market status dominate

as determinants of poverty transitions.[1] However, using an endogenous switching model to predict poverty transitions (Cappellari and Jenkins, 2002, 2004, 2008), they also find that there is substantial genuine state dependence underlying poverty dynamics, meaning that independent of other correlates of poverty, the experience of poverty itself is implicated as a determinant of poverty persistence.

Schotte et al. (2017b), also using the first four waves of NIDS, find that eight out of ten South Africans find themselves in a situation of poverty at least once over the six-year time period between 2008 and 2014/15. Schotte et al. show that, of these eight, four are located persistently below the poverty line during this period. Using a similar methodology as Finn and Leibbrandt (2017) to predict poverty transitions, they find that the chronically poor are characterized by exceptionally low levels of human capital and financial assets as well as geographical isolation from markets and employment opportunities. The transient poor, on the other hand, are more urban, better educated and rely more heavily on income earned in the labor market than the chronically poor. The economic instability this group experiences is closely linked to their vulnerable position in the labor market, since many in this group rely on precarious forms of employment which are unlikely to be sustained, even once attained. Zizzamia (2018), who combines the analysis of NIDS with data from a qualitative case study of Khayelitsha, Cape Town, provides further support for this finding.

Using the same methodology as Schotte et al. (2017b) and Finn and Leibbrandt (2017), Schotte et al. (2017a, 2018) extend the analysis of poverty dynamics to those above the poverty line. Schotte et al. (2017a, 2018) argue that even those who are observed to be non-poor at any given point in time may nevertheless be highly vulnerable to falling into poverty, just as some among the poor are much more likely than others to escape poverty over time. They argue that, from a dynamic perspective, those households which straddle the poverty line are structurally more similar than a dichotomous poor/non-poor distinction would suggest.

Schotte et al.'s work, by extending the study of poverty dynamics to those vulnerable households above the poverty line, engage with an emerging international literature in which growing attention has been paid to the study of vulnerability to poverty, broadly understood as the risk of

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[1] While Finn and Leibbrandt find that an increase in household size plays a larger role in determining poverty entries relative to the findings of Woolard and Klasen, this is largely a mechanical issue with differences in poverty measurement. Woolard and Klasen use an equivalised measure of household income which derives a per capita measure which takes into account differences in consumption for adults and children and considers household economies of scale, while Finn and Leibbrandt use a measure where household consumption is simply divided by household size to derive a per capita figure. This means that in Finn and Leibbrandt's analysis household consumption is mechanically more sensitive to an increase in household size.

remaining poor or falling (deeper) into poverty (see, *inter alia*, Klasen and Waibel, 2013; Dercon, 2006; Cafiero and Vakis, 2006; Hoddinott and Quisumbing, 2003).

There are three main reasons that motivate the growing focus on vulnerability as a distinct area of inquiry in poverty dynamics research: First, vulnerability reduces the well-being of households, even if a deterioration in material well-being does not materialize. Evidence from the psychological and health literature has exposed economic insecurity as a source of considerable discomfort (see Cafiero and Vakis, 2006). This implies that it is not only current income or consumption levels that matter for actual welfare, "but also the risks a household faces, as well as its (in)ability to prevent, mitigate and cope with these" (Klasen and Waibel, 2012: 17). In consequence, vulnerability can both aggravate the material deprivation of those who are already poor and present a serious threat to the well-being of households who are presently non-poor but remain at the edge of slipping into poverty.

Second, vulnerability has the potential to create poverty traps. Combining research on poverty dynamics with research on risks, shocks and coping mechanisms (Holzmann et al., 2003; Klasen and Waibel, 2012), a number of studies have argued that poverty tends to be self-perpetuating, for example, because households that face a high ex-ante risk to poverty are more likely to opt for stable, low-return sources of income than to invest in activities with more lucrative but also more uncertain outcomes (see Dercon, 2006; Cafiero and Vakis, 2006). Also, if the poor are more exposed to risk than the non-poor and/or are less able to deal with negative economic shocks when they do occur, then this vulnerability will contribute significantly to poverty as a persistent state. This applies, for example, if households are forced to liquidate their productive asset base, decrease caloric intake, or if children are taken out of school to work (Dercon, 2006). Empirical evidence also suggests that poverty repeated over time has a more detrimental impact on people's lives, especially for children, than poverty that does not recur (Foster, 2009). For example, a longer time spent in poverty has been associated with increased stunting and diminished cognitive abilities (Brooks-Gunn and Duncan, 1997), compromised health outcomes (McDonough and Berglund, 2003), and increased risks of remaining poor (Stevens, 1994).

Third, measures of economic vulnerability aim to identify the (types of) households with highest risks of future poverty, whether this means *remaining* poor or *becoming* poor in the future. This forward-looking perspective is critical for the design appropriate poverty reduction policies, given that to fight poverty in the long run, "it is at least as important to prevent future poverty as it is to combat existing poverty" (Klasen and Waibel, 2012: xi). In the South African context, both Finn and Leibbrandt (2017) and Schotte et al. (2017b) have shown there to be substantial genuine state dependence of

poverty, with the consequence that "preventing people from falling into poverty in the first place will likely yield greater returns in the long-run, rather than targeting the individual correlates of poverty directly" (Finn and Leibbrandt, 2017: 48). In this context, it is important to know who is at highest risk of becoming poor, and what characteristics make poverty persistent at an individual or household level.

While the importance of understanding vulnerability in the analysis of poverty dynamics is evident, much of this work in developing countries is limited by the lack of availability of nationally representative panel data. Where research on vulnerability exists in developing countries, it mainly focuses on risk factors predominant in rural settings. In rapidly urbanizing Sub-Saharan Africa, empirical research that investigates poverty dynamics at a national level and which includes the large and growing urban population remains scarce, presenting an invaluable opportunity to researchers working with NIDS data.[2]

Zizzamia et al. (2016) and Schotte et al (2018) have extended the analysis of poverty dynamics and vulnerability to poverty in South Africa by applying these same methodologies to a distinct, but closely related issue: the application of a "vulnerability approach" to the definition and identification of a middle class.

In this regard, the economic literature on vulnerability to poverty has proven to be a natural complement to the literature on middle classes in developing countries. Following López-Calva and Ortiz-Juarez (2014), who pioneered a vulnerability approach to defining the middle class in Latin America, Zizzamia et al. (2016) and Schotte et al. (2018) apply a similar methodology to identifying the economically stable middle class in South Africa.

A debate has emerged in the economics literature on how to measure the middle class in developing country contexts, where those in the literal middle of the consumption distribution often fall below the poverty line (for detailed discussion of this debate, see Zizzamia et al., 2016). In the recent literature on the middle class in developing countries, scholars have begun to converge on the understanding that a meaningful definition of the middle class does not simply classify all non-poor households as middle class. Rather, the middle class is seen as a class which is distinct in terms of consumption behaviour, political participation, social norms, and economic empowerment and stability. These criteria are not automatically met when a poor household's income moves above the poverty line.

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[2] Bigsten and Shimeles (2004), Kedir and McKay (2005), Islam and Shimeles (2006), Faye et al. (2011), and Azomahou and Yitbarek (2014) are among the exceptions that analyze poverty dynamics in urban Sub-Saharan Africa, excluding South Africa.

Acknowledging this, an increasing number of researchers have adopted a vulnerability-based definition of the middle class, in which the middle class is distinguished from a non-poor but "vulnerable" group situated between the middle class and the poor (López-Calva & Ortiz-Juarez, 2014; Zizzamia et al., 2016; Schotte et al., 2018; Corral Rodas et al., 2018).

The adoption of a vulnerability-based approach to the definition of the middle class fits well within methodologies developed to investigate poverty dynamics, since, by identifying those among the non-poor who are vulnerable to poverty, we also by extension are able to identify those among the non-poor who are *not* vulnerable to poverty. In this regard, Schotte et al. (2018) use state of the art poverty dynamics methodologies (Cappellari and Jenkins, 2002, 2004, 2008) to translate the analysis of mobility patterns into the development of a consistent and integrated schema of social stratification. This schema is subdivided into five strata: the chronic poor, the transient poor, the vulnerable non-poor, the middle class, and an elite.

Defining and operationalising this schema using NIDS data, they find that, with an average population share close to 24 per cent between 2008 and 2014/15, the share of South Africans who can be considered as stably middle class or elite is considerably smaller than most other studies suggest. They also find that the transient poor and the vulnerable, at 27 per cent, constitute a considerable share of South Africa's population and that these two groups, despite being separated by the poverty line, are strikingly similar in terms of their average household characteristics. They also reveal that the quality of labour market insertion is a crucial distinguishing factor between the middle class and the transient poor/vulnerable non-poor classes. While most household heads in the middle class and elite are formally employed with a permanent work contract and union coverage, their equivalents among the transient poor and vulnerable are more often employed in precarious employment relationships and a larger share is either unemployed or economically inactive. In particular, much of the churning around the poverty line which characterises the transient poor and vulnerable is driven by the precariousness of their employment arrangements. Finally, Schotte et al. (2018) also draw attention to the finding that approximately 50 percent of the South African population is trapped in chronic poverty in that they are both poor and highly unlikely to escape poverty. Echoing the findings of Woolard and Klasen (2005), Aliber (2003), and Finn and Leibbrandt (2017), Schotte et al. find that chronic poverty is driven primarily by structural unemployment and geographical isolation from economic opportunity.

In what follows, we update the findings of this body of work using all five waves of NIDS data, synthesising these findings into an narrative which integrates the analysis of poverty dynamics within a

broader schema of social stratification revealing the ways in which structured inequalities are consequential in shaping mobility patterns.

Section 2: Methods and data

This paper uses NIDS panel data (SALDRU 2016a,b,c,d,e). NIDS is South Africa's only nationally representative household panel study, which began in 2008 with a sample of over 28,000 individuals in 7,300 households. There are currently five waves of data available spanning the nine years from 2008 to 2017, where each wave of data is spaced approximately two years apart.

In most of the analysis in this paper we use the balanced panel of respondents to exploit the full longitudinal scope of the data. In some sections, however, we pool data from pairs of consecutive waves ($t-1$ and t), such that the analysis of changes over time represent changes between 2008 to 2010/11, 2010/11 to 2012, 2012 to 2014/15 and 2014/15 to 2017 respectively, controlling for period-specific fixed effects. We have indicated clearly when we have pooled wave-to-wave transitions rather than using the balanced panel.

In line with the research upon which this paper draws, we use expenditure rather than income as a measure of economic welfare. This requires the assumption that expenditure is a good proxy for the resources which are available to individuals and hence reflective of their overall living standards and economic wellbeing.[3] Expenditure is used most often in South Africa to undertake analyses of poverty, since it is assumed that, to the extent that households are able to smooth consumption, expenditure is a better approximation of permanent household income.[4] To facilitate comparisons across time, all monetary figures are deflated using the Stats SA consumer price indices and are calibrated to March 2017.[5] To convert household income and expenditure to a per capita measure, household figures are simply divided by the number of members in a household. This follows an established precedent in the

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[3] This is not to overlook expenditure's well-known limitations as a proxy for economic welfare. For instance, expenditure is measured at the household level, while my analysis is undertaken primarily at the individual level. This presumes that expenditure is divided equally within the household – an assumption which is almost certainly universally untrue (De Vreyer & Lambert, 2016).
[4] The consumption expenditure variable used excludes "lumpy" once-off expenditure items, such as motor vehicles and furniture.
[5] To adjust for inflation, for each line the food component (equal to the FPL) is inflated by using the food specific Stats SA CPI and the non-food component (equal to the difference between the FPL and the UBPL) is inflated by using the non-food specific Stats SA CPI.

South African microeconomics literature (see, in addition to our own work, Stats SA., 2017; Budlender et al., 2015).[6]

Poverty is defined using the StatsSA upper-bound poverty line (UBPL), the StatsSA food poverty line (FPL), and occasionally the 2015 SALDRU upper-bound poverty line (SALDRU-UBPL) – all three of which use Ravallion's (1994) cost-of-basic-needs (CoBN) approach designed to indicate various degrees of poverty (Budlender et al., 2015; StatsSA, 2015b). According to Ravallion's methodology, the FPL represents the level of consumption below which individuals are not able to purchase sufficient food to meet their caloric requirements, even if all expenditure is dedicated to food. An upper bound poverty line (UBPL) is calculated to indicate the expenditure level at which individuals can satisfy both their food and non-food needs.[7] Expressed in March 2017 Rands, the three poverty lines are respectively R515, R1,136, and R1,503 per capita, per month.

Panel weights are used to correct for the presence of panel attrition in NIDS. Of the 26,775 sample members who were successfully interviewed in 2008, 15,673 were re-interviewed in all four subsequent waves, giving an attrition rate for the balanced panel of 41.47 percent. However, between-wave attrition, which is most important in this study, is substantially lower, ranging from 9.3 to 21.1 percent. When analysis is undertaken on pooled wave-to-wave samples, weights are created separately for each sub-period (2008 to 2010/11, 2010/11 to 2012, 2012 to 2014/15, 2014/15 to 2017), benchmarking the characteristics of the sample that did not attrite against characteristics in the original sample. That is, for each sub-period, new weights are derived which adjust the original baseline survey design weight to ensure that the weighted distribution of households by gender of the household head,

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[6] Recognising that income in a family of four is "stretched" further than a per capita equivalent in a single-person household, it may be prudent to use an "equivalence scale" to derive an "adult-equivalent" measure of individual income/consumption which is adjusted to account for differences in the consumption needs of adults and children in a household. This can be further adjusted to consider economies of scale in larger households. However, since there is no consensus as to how to adjust for adult-equivalents and economies of scale, Deaton (1997) has suggested that the use of such scales may raise as many issues as they resolve, and their usefulness has been disputed in the South African context by Woolard and Leibbrandt (2006).

[7] I omit reporting results using Ravallion's method for calculating a lower-bound poverty line (LBPL), since, as Budlender et al. (2015) note, this indicator is conceptually weak as a cost of basic needs indicator. While it allows for spending on non-food items, it requires that individuals sacrifice some food consumption in order to fulfil these non-food needs.

geographic location (area and province), poverty headcount and race is the same for the subperiod in question as in the cross-sectional distribution in the survey's baseline wave.[8]

Finally, it is important to note that NIDS is a panel tracking individual respondents. This implies that, although our poverty measure is defined at the household level, changes in the poverty status over time will be observed at the level of the individual and will not necessarily be identical across members initially belonging to the same household, as the household composition may change.

Section 3: Descriptive statistics

In 2017 Stats SA released a report on poverty trends in South Africa between 2006 and 2015. Figure 1 below illustrates trends in the national poverty headcount ratio, showing a fall in poverty between 2006 and 2011, followed by a slight rise between 2011 and 2015. While NIDS began as a nationally representative panel in 2008, broader demographic shifts as well as the presence of systematic attrition (at approximately 40 percent for the balanced panel) may have compromised the representativeness of NIDS. This is evidenced in Table 1: Poverty rates, balanced panelTable 1, where the poverty headcount using the Stats SA UBPL (highlighted in grey) is initially consistent with the Stats SA estimates in Figure 1, but does not follow the same trend over time. This merely serves to illustrate that the purpose that NIDS serves is not so much as a source of nationally representative cross-sectional statistics, but rather as providing a uniquely valuable insight into precisely those dynamic issues which are the object of this study.

Figure 1: Poverty headcounts (FPL, LBPL and UBPL) between 2006 and 2015

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[8] We follow a procedure proposed by Wittenberg (2010) to compute panel survey weights which are as close to the design weights as possible. For more details see Schotte et al. (2017a, 2017b), who use the same methods to design weights as in this analysis.
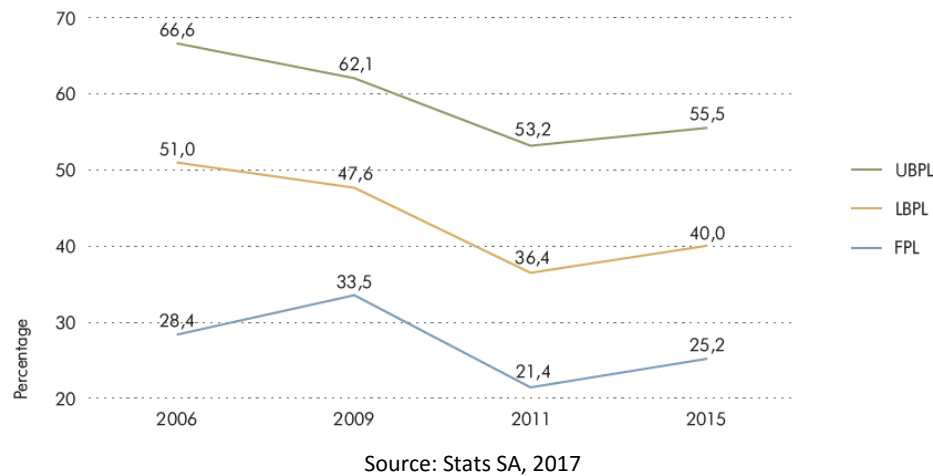
Source: Stats SA, 2017

Table 1: Poverty rates, balanced panel

	2008	2010	2012	2014/15	2017
StatsSA food poverty line (R515)	35.87%	38.26%	31.68%	25.06%	20.40%
StatsSA upper bound poverty line (R1136)	64.93%	63.54%	59.65%	51.27%	49.90%
SALDRU upper bound poverty line (R1504)	72.03%	72.03%	65.83%	60.59%	59.94%

Notes: All cell proportions are weighted using panel weights.

Behind these aggregate poverty figures, a great deal of economic mobility is hidden. Fortunately, NIDS allows us to illuminate these patterns. Table 2 contains five poverty transition matrices – for 2008 to 2010, 2010 to 2012, 2012 to 2014/15, 2014/15 to 2017, as well as the pooled sample of wave-to-wave transitions between time *t-1* and *t*. These matrices distinguish between three gradations of economic wellbeing – the non-poor, the poor, and the food-poor – and illustrate the extent of movements between these states. The food-poor and the non-poor display the greatest degree of stability, in all matrices. For example, looking at the pooled wave-to-wave transitions in Table 2e, 63.4 percent of the food-poor and 76.9 percent of the non-poor remained in the same state, while 40.7 percent of the poor remained poor, with 30.6 percent moving into food poverty, and 28.7 percent moving out of poverty. The trend in poverty dynamics over time (Table 2a-d) suggests a gradual reduction in poverty in line with Table 1, with an increase in resilience to poverty, and a decrease in the persistence of extreme poverty.[9]

Table 2: Poverty transition matrices

a)

2008

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[9] Bearing in mind the inconsistency between cross-sectional poverty estimates and the trends displayed in the NIDS panel (Table 1 and Figure 1), this optimistic finding should be interpreted with caution.

		Not-poor	Poor	Food-poor
2010	Not-poor	70.17%	20.01%	7.45%
	Poor	18.42%	37.36%	19.48%
	Food-poor	11.41%	42.62%	73.07%

b)

		2010		
		Not-poor	Poor	Food-poor
2012	Not-poor	73.19%	26.65%	8.56%
	Poor	17.65%	40.86%	25.93%
	Food-poor	9.16%	32.49%	65.51%

c)

		2012		
		Not-poor	Poor	Food-poor
2014/15	Not-poor	79.38%	34.78%	15.87%
	Poor	14.95%	39.39%	28.92%
	Food-poor	5.67%	25.83%	55.21%

d)

		2014/15		
		Not-poor	Poor	Food-poor
2017	Not-poor	77.15%	31.20%	14.28%
	Poor	17.05%	45.92%	31.17%
	Food-poor	5.79%	22.88%	54.56%

e)

Pooled wave-to-wave transitions

		t		
		Not-poor	Poor	Food-poor
t+1	Not-poor	76.89%	28.72%	10.54%
	Poor	15.93%	40.65%	26.05%
	Food-poor	7.18%	30.62%	63.41%

Section 4: Chronic Poverty

Table 2, shows little more than the extent of mobility across welfare categories over time. A more illuminating insight into mobility patterns is to exploit the full longitudinal scope of the NIDS data, and to disaggregate mobility patterns by demographic and household characteristics. Table 3 does this by dividing the population into six groups by the number of spells of poverty, with those in the left-most row having been observed in all five waves to be poor, and those in the rightmost column having been observed in none of the five waves to be poor. An obvious limitation is that Table 3 says nothing of the

poverty status of households in the approximately two years between waves, meaning, for example, that it is possible that those observed to be poor in all NIDS waves were actually transitioning into and out of poverty between waves. We interpret Table 3 with these limitations in mind.

The top row reports statistics for the population as a whole. Similarly to Schotte et al. (2017b), who use the first four waves of NIDS, we find that only a small portion of panel members remained consistently non-poor through the five waves of NIDS, with only 14.7 percent of the panel remaining non-poor in all waves. In contrast, 36.1 percent of all panel members remained consistently below the poverty line in all five waves, with an additional 21.3 percent being poor in four out of five waves. In the rows below, results are reported for several sub-samples of households based on different household characteristics. Although the sample size is small, it is striking that of the 274 white individuals who were tracked in all five waves, none were observed to be poor in four or five waves, while 93.6 percent were observed to be consistently non-poor. In the African sample, in contrast, 62.9 percent were observed to be poor in four or five waves, with only 8.9 percent remaining non-poor in all five waves. Education of the household head (measured in Wave 1) is similarly strongly associated with mobility patterns. Those in households with households heads with less than matric are much more likely to experience multiple spells of poverty than those in households with better educated household heads. Those in households with heads who have post-matric qualifications are highly unlikely to experience prolonged spells of poverty and are much more likely to have remained stable non-poor between 2008 and 2017.

A clear distinction is also apparent in the dynamic poverty patterns across the urban/rural divide. A meagre 2.5 percent of rural households remained non-poor throughout 2008 to 2017, while 82.86 were poor in four or five waves. In contrast, 24.7 percent of urban households remained stably non-poor (and 34.2 percent being non-poor in four or five periods), and 42.7 percent were poor in four or five periods. While clear that chronic poverty is widespread even in urban South Africa, it remains true that chronic poverty continues to dominate the poverty landscape in rural areas.

Confirming the findings of Finn and Leibbrandt (2017), we also find that single-parent households are substantially more likely to be poor in four or five periods, and are about half as likely as the population average to remain out of poverty in all five waves. However, in Table 3, household type is defined only on the basis of Wave 1 variables, meaning that household compositional changes may confound the relationship we observe between household type and mobility patters. For subsamples defined on the basis of the gender of the household head, however, we apply the variable restriction in all periods. 71.8 percent of households which are female-headed in all five waves remained in poverty in

four or five waves, compared to only 29.1 percent of those in male-headed households. It is worth noting that female-headed households are three times as likely as male-headed households to be single-parent households.

Table 3: Number of spells poor by various characteristics

	No. of spells in poverty						
	Always poor	**4**	**3**	**2**	**1**	**Never poor**	*No. of obs.*
Total	36.06%	21.27%	13.28%	7.78%	6.86%	14.74%	*16786*
Race							
African	40.08%	22.84%	13.80%	7.88%	6.57%	8.83%	*14122*
White	0.00%	0.00%	0.05%	1.94%	4.46%	93.55%	*247*
Education (household head)							
< Matric*	41.87%	23.41%	13.94%	7.88%	5.48%	7.41%	*13558*
Matric*	11.65%	13.19%	12.06%	7.09%	12.50%	43.50%	*1104*
Tertiary*	1.26%	5.33%	7.14%	8.94%	14.82%	62.51%	*779*
Household type							
Single parent household*	42.09%	26.30%	14.20%	4.82%	4.92%	7.67%	*2773*
Two-adult household*	30.10%	18.81%	12.58%	7.30%	7.28%	23.94%	*1294*
Gender (household head)							
Female	50.63%	21.14%	10.93%	4.96%	4.45%	7.89%	*4916*
Male	13.14%	15.94%	13.14%	9.90%	13.00%	34.88%	*1503*
Area							
Rural	59.61%	23.25%	8.71%	3.68%	2.23%	2.53%	*6776*
Urban	23.92%	18.75%	13.92%	9.24%	9.50%	24.67%	*6644*

Notes:
a) All cell proportions are weighted using Wave 5 panel weights.
b) Age variables are defines as described in Table 3 above.
c) Single parent households are defined as households with a single adult and one or more children. Two-adult households are defined as households with at least two prime-aged adults, with or without children.
d) Stars (*) denote those cases in which restrictions applied (Column 1) are defined using Wave 1 variables (2008) only. In these cases, where changes in household composition occur, these variables may not apply across waves for individuals. For example, we distinguish between households on the basis of the education of the household head in 2008. Household members of these households may move to other households where the household head is more (or less) educated, but here they remain classified as belonging to the group classified on the basis of the education of their household head in 2008.

When chronic poverty is so dominant in the poverty landscape, a challenge arises regarding how we ought to factor this dynamic element into poverty measurement. Two dominant approaches are typically used to decompose poverty at one point in time into a long-run, chronic component, and a short-run transient component: The *components* approach, developed by Jalan and Ravallion (1998), calculates the "permanent" component of a household's income (or consumption expenditure) by taking the intertemporal average. The chronically poor are then identified as those for whom this component falls below the poverty line. Alternatively, the *spells* approach, accounts more explicitly for

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the time spent in poverty by counting the number of poverty spells experienced over a given number of time periods and defining a duration cut-off above which households are classified as chronically poor (Bane and Ellwood, 1986; Calvo and Dercon, 2009; Foster, 2009).

Applying both approaches to South Africa suggests, unsurprisingly, that chronic poverty is the dominant contributor towards total poverty. In Table 4 we present the results of the *components* approach. We find that between 83 and 89 percent of the poor can be classified as chronically poor. That is, for a relatively large share of the population, poverty is a permanent state. The share of the transient poor appears to have been highest in 2010/11, when – likely in reaction to the global economic crisis – a number of households had been temporarily pushed below the poverty line.

Using the *spells* approach, in Table 5 we decompose the standard set of Foster-Greer-Thorbecke poverty measures into chronic and transient components following an approach developed by Foster (2009). This allows us to investigate the link between the duration of time spent in poverty and the standard FGT dimensions of incidence, depth and severity. Since there are five periods, we can separately look at individuals that were poor in none, one, two, three, four, or all five waves. In line with our findings using the components approach, we observe that chronic poverty is the dominant contributor to total poverty in all survey waves. If a minimum of four spells spent in poverty is specified as the duration cut-off, then chronic poverty is observed to be responsible for between 76 and 85 percent of the total poverty headcount. If we were to define only those as chronically poor who fell below the poverty line in all five waves, the chronic poor would still make up over 50 percent of the overall poverty headcount.

When looking at the depth and severity of poverty, that is, when we take the distance of the poor to the poverty line into consideration, the share of poverty attributable to the chronic poor increases further. Those who were poor in four or five waves make up about three quarters of the total poverty gap and about nine tenths of the squared poverty gap or poverty severity index (see Table 5). That is to say that the chronically poor (i.e., those who were poor in four or five waves) tend to be those who experience the highest levels of deprivation. Naturally, the further the distance to the poverty line, the lower the chances someone has to escape poverty.

Table 4: Chronic versus transient poverty components, 2008-2017

	Upper bound poverty line (R1136)					
	2008	**2010**	**2012**	**2014**	**2017**	**Total**

Chronic poor (%)	83.61	80.69	83.21	88.17	88.84	84.66
Transient poor (%)	16.39	19.31	16.79	11.83	11.16	15.34

Source: Author's calculations using NIDS waves 1 to 5 balanced panel (weights corrected for panel attrition).
Note: Following Jalan and Ravallion (1998), for each respondent, we calculate the intertemporal average of per capita household expenditure. The chronically (transient) poor are then identified as those who were observed to be poor in the respective period and for whom this permanent expenditure component (i.e., the intertemporal average) falls below (above) the respective poverty line.

Table 5: Duration in poverty and contribution to poverty measures (UBPL), 2008-2017

# of waves in poverty	share in poverty headcount (%)					share in poverty gap (%)					share in poverty severity (%)				
	2008	2010	2012	2014	2017	2008	2010	2012	2014	2017	2008	2010	2012	2014	2017
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	2.1	3.5	3.5	1.4	1.6	1.4	1.9	1.7	0.7	0.9	1.0	1.3	1.0	0.5	0.6
2	6.2	6.6	4.1	3.4	3.9	4.5	4.7	2.6	2.3	2.4	3.7	3.8	2.0	1.8	1.6
3	13.2	13.6	13.5	9.8	8.5	10.4	11.7	10.6	7.1	5.7	9.1	10.8	8.9	5.7	4.3
4	25.2	26.1	27.2	27.5	23.0	24.9	24.9	26.2	24.5	20.4	24.5	24.0	25.4	22.6	19.4
5	53.2	50.2	51.6	58.0	63.1	58.7	56.7	58.9	65.4	70.6	61.9	60.1	62.7	69.4	74.1
4+5	78.4	76.3	78.9	85.4	86.1	83.7	81.6	85.1	89.9	91.0	86.3	84.1	88.1	92.0	93.5

Source: Author's calculations using NIDS balanced panel for waves 1 to 4 (weights corrected for panel attrition).

Section 5: Vulnerability

In Section 4 we saw that chronic poverty affects primarily African, single parent, female-headed, and rural households. Members of these households are often poorly educated and long-term unemployed. However, we also see that, between 2008 and 2017, poverty affected many more South Africans than those who are counted among the chronic poor. The fact that only 14.7 percent of all panel members were never observed to be poor over the five waves shows that poverty, experienced as a transient state, affects a large portion of the South African population. The urban African population, in particular, appears to be afflicted by transient poverty, with those who are poor often moving out of poverty, and those who are not poor often falling (back) into poverty over time.

In this section, we try to understand the determinants of vulnerability to poverty and the routes through which the poor escape poverty and the non-poor fall into poverty. As a first step, we investigate the effect that various economic shocks have on per capita household consumption. To do so, we anchor the analysis of consumption volatility around the UBPL and in this way measure the strength of the association between various events and transitions across this threshold using a methodology developed by Jenkins (2011). While this approach does not allow us to give a causal interpretation to the

impact of these events, it does permit us to understand something of the strength and nature of the association between earnings volatility and poverty transitions. The results from this analysis are reported in Table 6 and Table 7.

The trigger events listed in Table 6 and Table 7 are split between labour market events, non-labour market income events, and demographic events. For each event, we report the prevalence with which the event occurred for those who were non-poor (Table 6) or poor (Table 7) in the initial period. These prevalence rates are reported in the first column of the respective tables.

In the second column, we report the poverty entry rate (Table 6) or exit rate (Table 7), conditional on event occurrence - that is, the poverty entry/exit rate among the subset of the population which experienced the trigger event in question. This can be compared to the unconditional population poverty entry rate of 23.1 percent or exit rate of 18.0 percent, as reported in the second column of the two tables. This second indicator is a measure for event "intensity" – the more "intense" the event, the more likely a transition out of or into poverty is, conditional on the experience of the event. However, here it is also worth noting that the event intensity indicator reveals one of its limitations: Intensity rates are biased by the confounding impact of other factors not considered in this associational analysis. For example, while the results in Table 6 suggests that the loss of a formal job has no effect on likelihood of entering poverty, this is merely because those with access to formal jobs in the first place are also more likely to have access to other mechanisms which protect them from poverty descents.

The final column in Table 6 and Table 7 indicate the proportion of total poverty transitions which are associated with particular events. These figures are jointly determined by those reported in columns 1 and 2: The total share of poverty transitions associated with an event will be a function of how frequently an event occurs, and how often it leads to a poverty transition when it does occur.

These results are useful for getting a sense of the importance of labour market events in determining poverty transitions. The fact that more than one quarter of all poverty entries are associated with a job loss in the household suggests a strong link exists between the ability to maintain a job and economic resilience. Similarly, approximately one third of all poverty escapes are associated with job gains in a household.

A change in household size, on the other hand, is associated with approximately half of all poverty entries and poverty exits respectively. While this suggests that demographic events are more

important, this is at least partly explainable by the mechanical effect that a change in household size has on poverty measurement when household consumption is divided by household size to derive a per capita measure. Further, as noted above, this associational analysis fails to take into account that the strength of associations between job losses (gains) and poverty entries (exits) may be confounded by factors which the associational analysis fails to account for.

Table 6: Trigger events and poverty entry (UBPL)

	Event prevalence	Poverty entry rate conditional on event	Share of poverty entries associated with event
Poverty entry rate		23.13	
Labour market events			
Fall in number of workers	27.37	28.76	27.37
Fall in number of workers (formal)	20.01	23.40	20.01
Fall in number of workers (informal)	24.71	33.64	24.71
Fall in number of workers (household size constant)	9.87	25.09	9.87
Fall in labour income (-10) (number of workers constant)	12.90	20.57	12.90
Non-labour income events			
Fall in income from public grants (-10)	3.89	43.40	3.89
Demographic events			
Change in gender of household head (male to female)	15.35	23.03	15.35
Increase in household size	43.55	41.24	43.55
Birth of a child (0 to 2 years)	33.15	43.66	33.15
Death of a household member	7.96	37.32	7.96
Death of a household member (with life insurance)	6.24	14.49	6.24
Movement from urban to rural	1.39	28.74	1.39

Notes: NIDS waves 1 to 5 pooled panel of wave-to-wave transitions (weights corrected for panel attrition).

Table 7: Trigger events and poverty exit (UBPL)

	Event prevalence	Poverty exit rate conditional on event	Share of poverty exists associated with event
Poverty exit rate		18.03	
Labour market events			

Rise in number of workers	31.26	18.55	31.26
Rise in number of workers (formal)	27.10	23.08	27.10
Rise in number of workers (informal)	20.04	16.29	20.04
Rise in number of workers (household size constant)	12.85	21.17	12.85
Rise in labour income (+10) (number of workers constant)	13.60	25.57	13.60
Non-labour income events			
Rise in income from public grants (+10)	4.80	12.17	4.80
Rise in income from remittances (+10)	0.62	20.41	0.62
Demographic events			
Change in household head from female to male	14.78	23.40	14.78
Decrease in household size	45.22	25.03	45.22
Movement from rural to urban	8.05	51.33	8.05

Notes: NIDS waves 1 to 5 pooled panel of wave-to-wave transitions (weights corrected for panel attrition).

Note: All figures and tables below are taken from previous work and need to be updated with Wave 5 data, and the discussion written up. This will follow the structure given below, and outlined in the introduction.

Table 3: Multivariate probit model: Poverty transitions

Probability of being poor in *t* conditional on poverty status in *t-1*	Poverty persistence			Poverty entry		
	Average Marginal Effect	Coeff. Estimate	s.e.	Average Marginal Effect	Coeff. Estimate	s.e.
Characteristics of the household head (HoH) in t-1						
HoH age	0.001	0.006	(0.004)	-0.005	-0.018**	(0.008)
HoH age squared (x0.01)	-0.002	-0.009**	(0.004)	0.000	-0.001	(0.008)
HoH is female	0.017	0.070***	(0.024)	0.095	0.330***	(0.041)
HoH race group (base: African)						
Coloured	-0.005	-0.022	(0.053)	-0.121	-0.411***	(0.064)
Asian/Indian	-0.407	-1.278***	(0.153)	-0.293	-1.144***	(0.116)
White	-0.426	-1.336***	(0.279)	-0.287	-1.109***	(0.107)
HoH education (base: no schooling)						
Less than primary completed	0.011	0.050	(0.032)	-0.110	-0.356***	(0.088)
Primary completed	0.023	0.102**	(0.044)	-0.128	-0.415***	(0.096)
Secondary not completed	-0.027	-0.113***	(0.034)	-0.202	-0.656***	(0.085)
Secondary completed	-0.067	-0.265***	(0.051)	-0.288	-0.952***	(0.101)
Tertiary	-0.215	-0.752***	(0.078)	-0.340	-1.147***	(0.107)
HoH employment status (base: inactive)						
Unemployed (discouraged)	0.021	0.094	(0.059)	-0.066	-0.233**	(0.110)
Unemployed (strict)	0.002	0.007	(0.039)	0.056	0.194**	(0.079)
Subsistence farmer	0.010	0.045	(0.064)	0.003	0.010	(0.149)
Casual worker/ helping others	0.029	0.127**	(0.061)	0.148	0.511***	(0.181)
Self-employed	-0.021	-0.087	(0.054)	0.076	0.262***	(0.079)
Self-employed # Formal[a]	-0.066	-0.322*	(0.174)	-0.217	-0.493***	(0.134)
Employee	0.000	0.001	(0.041)	0.047	0.161**	(0.069)
Employee # Permanent contract	-0.032	-0.128**	(0.052)	-0.090	-0.150**	(0.061)
Employee # Union member	-0.025	-0.101*	(0.062)	-0.098	-0.178***	(0.057)
Employee # Share public sector[b]	-0.057	-0.225**	(0.093)	-0.153	-0.372***	(0.093)
Characteristics of the household (HH) in t-1						
Composition of the HH						
No. of HH members	0.007	0.027***	(0.008)	0.037	0.125***	(0.020)
No. of employed members (excl. HoH)	-0.021	-0.087***	(0.015)	-0.058	-0.208***	(0.029)
No. of children (<18 years)	0.024	0.099***	(0.011)	0.005	0.016	(0.025)
No. of elderly members (60+ years)	-0.002	-0.007	(0.021)	0.057	0.200***	(0.037)
HH has access to basic goods and services (shelter/water/sanitation/electricity)	-0.040	-0.165***	(0.032)	-0.027	-0.095**	(0.046)
Geographic location (base: traditional)[c]						
Urban	-0.006	-0.026	(0.032)	-0.058	-0.198***	(0.055)
Farms	0.031	0.138***	(0.048)	0.060	0.205**	(0.091)
Constant		0.825***	(0.123)		0.923***	(0.205)
Province fixed effects		YES			YES	
Time fixed effects		YES			YES	
Log-likelihood				-97,980,000		
Model chi2 (d.f.=174)				23,842		
Number of observations				67,117		

Asymptotic standard errors are robust for the presence of repeated observations on the same individual.
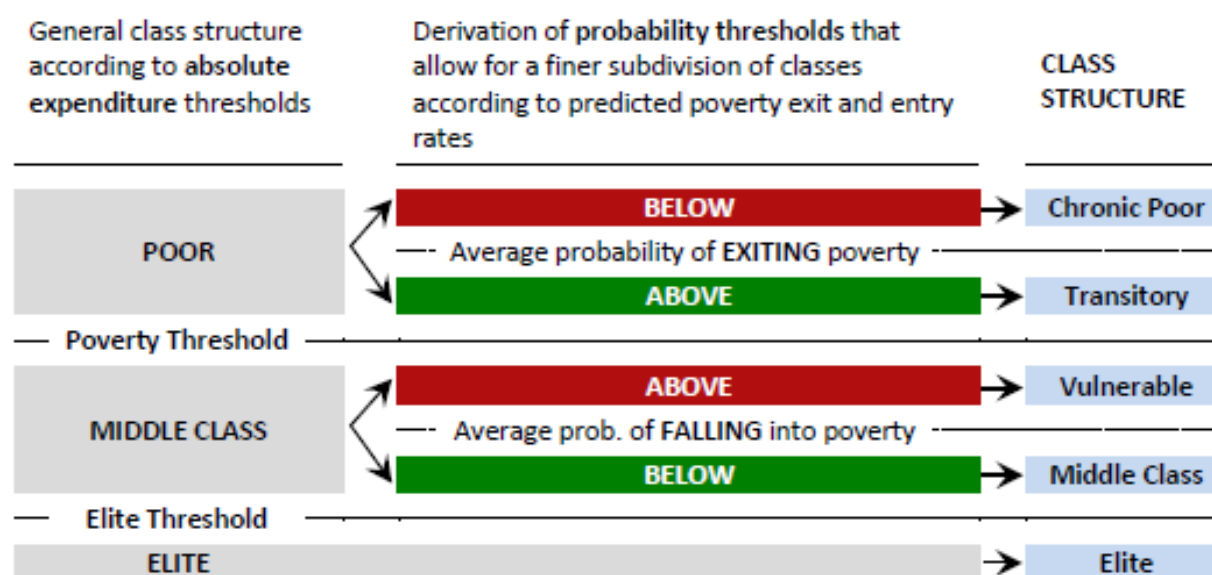*** p<0.01, ** p<0.05, * p<0.1

Section 6: The Middle Class and Elite

Figure 1: Schema of social stratification based on current living standards and mobility patterns

General class structure according to absolute expenditure thresholds	Derivation of probability thresholds that allow for a finer subdivision of classes according to predicted poverty exit and entry rates	CLASS STRUCTURE
POOR	BELOW — Average probability of EXITING poverty — ABOVE	Chronic Poor / Transitory
Poverty Threshold		
MIDDLE CLASS	ABOVE — Average prob. of FALLING into poverty — BELOW	Vulnerable / Middle Class
Elite Threshold		
ELITE		Elite

Source: Authors' representation.

Note: Solid lines denote absolute expenditure thresholds. Dashed lines denote probability thresholds.

Table 4: Probability thresholds and associated monetary thresholds

	(a) Probability threshold (%)				(b) Associated monetary threshold			
	Mean	Std. Err.	[95% Conf. Int.]		Mean	Std. Err.	[95% Conf. Int.]	
Average probability of **EXITING** poverty for those who were poor in the last period	16.52	0.16	16.21	16.84	543	6	532	555
Average probability of **FALLING** into poverty for those who were non-poor in the last period	25.91	0.36	25.21	26.61	2,590	85	2,422	2,757

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).
Note: Poverty transition probabilities are predicted using parameter estimates from our regression model. The associated monetary thresholds are calculated as the average per capita household expenditure of those falling into the 95% confidence interval around the respective probability threshold. All monetary values are expressed in January 2015 Rands.

Table 7: Average class size and mobility patterns by identification method, 2008 to 2014/15

	Probability Thresholds			Monetary Thresholds		
	Population Share (%)	Share (%) that fell into poverty	Share (%) that moved out of poverty	Population Share (%)	Share (%) that fell into poverty	Share (%) that moved out of poverty
Chronic Poor	49.44	..	10.63	43.21	..	10.53
Transient		..	40.28		..	31.02
Poor	12.80			19.03		
Vulnerable	14.37	49.72	..	19.24	40.24	..
Middle class	19.69	9.54	..	14.82	9.72	..
Elite	3.70	2.80	..	3.70	2.80	..

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).
Note: All monetary values are expressed in January 2015 Rands.

Table 8: Stability of the middle class by identification method, 2008 to 2014/15

Pooled Sample (two consecutive waves)		wave *t*					
		Chronic	Transient	Vulnerable	Middle Class	Elite	Total
wave *t* − 1	Middle class (Probability Threshold)	2.15	7.39	12.11	70.95	7.40	100
	Middle class (Monetary Threshold)	4.06	5.65	25.02	56.20	9.07	100

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).

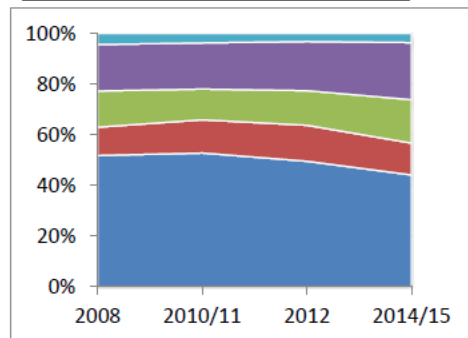**Figure 2: Class sizes, 2008 to 2014/15**

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).

Table 11: Average household (HH) characteristics by social class, 2008 to 2014/15

	Chronic Poor	Transient Poor	Vulnerable	Middle Class	Elite	Total
Weighted share of respondents	49.4%	12.8%	14.4%	19.7%	3.7%	100%
- *As percentage of poor*	79.4%	20.6%	n.a.	n.a.	n.a.	n.a.
Weighted share of respondents under 15 years old	64.9%	9.7%	11.4%	12.7%	1.3%	100%
Mean household expenditure per capita	390	617	2,045	3,987	19,251	2,063
Median household expenditure per capita	342	617	1,586	3,319	15,347	658
No. of members in HH	7.0	4.3	3.9	3.4	2.7	5.3
No. of workers in HH	0.9	1.3	1.1	1.5	1.2	1.1
Age composition						
No. of children (<18 years)	3.5	1.4	1.5	1.1	0.5	2.3
No. of members in working age (18-60 years)	3.1	2.7	2.2	2.1	1.8	2.7
No. of elderly members (60+ years)	0.4	0.3	0.3	0.3	0.3	0.4
Income by source [a]						
Share of income derived from source						
Labour	37.0%	68.0%	68.8%	84.2%	81.6%	56.6%
Government grants	54.0%	25.1%	19.4%	6.5%	1.9%	33.9%
Remittances	6.4%	5.4%	8.5%	2.9%	1.7%	5.7%
Subsistence agriculture	0.9%	0.2%	0.4%	0.1%	0.1%	0.5%
Investments	1.7%	1.3%	3.0%	6.3%	14.7%	3.3%
Mean income from source (if non-zero)						
Labour	3,414	5,237	6,887	16,091	38,347	3,414
Government grants	1,688	1,240	1,195	1,486	1,326	1,688
Remittances	1,357	1,055	1,811	1,966	16,249	1,357
Subsistence agriculture	208	169	476	829	1,367	208
Investments	1,684	1,446	2,989	11,395	17,008	1,684
Access to services						
House, cluster, town house	60.0%	74.2%	68.2%	79.7%	88.4%	67.9%
Tap water in house/on plot	58.7%	87.8%	83.1%	97.4%	98.1%	75.0%
Flush toilet in/outside house	31.6%	75.2%	66.9%	95.3%	97.9%	57.3%
Access to electricity	76.8%	88.2%	88.4%	96.4%	97.3%	84.6%
HH has access to basic goods and services (shelter/water/sanitation/electricity)	20.0%	57.4%	44.5%	74.7%	84.5%	41.4%
Geographic location [b]						
Traditional	55.8%	16.8%	26.5%	4.6%	3.0%	34.6%
Urban	39.4%	78.2%	67.9%	91.7%	95.2%	60.8%
Farms	4.8%	5.0%	5.5%	3.7%	1.8%	4.6%

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).
Notes: All monetary values are expressed in January 2015 Rands.

[a] Imputes rental income has been excluded. Government grants include i) State old age pension, ii) Disability, iii) Child Support, iv) Foster Care, and v) Care dependency grant. Other income from government includes i) Unemployment Insurance Fund and ii) Workmen's compensation. Investment Income includes i) Interest/dividend income, ii) Rental income, and iii) Private pensions and annuities.

[b] In line with the 2011 census, three settlement types are distinguished in NIDS:

1. Urban - A continuously built-up area that is established through cities, towns, 'townships', small towns, and hamlets.
2. Traditional - Communally-owned land under the jurisdiction of traditional leaders. Settlements within these areas are villages.
3. Farms - Land allocated for and used for commercial farming including the structures and infrastructure on it.
Those parts of the country falling under the jurisdiction of traditional authorities (or traditional chiefs) are considered as rural, mainly due to their lack of infrastructure due to past legacy.

Figure 3: Geographic split of South Africa's five social classes, 2008 to 2014/15
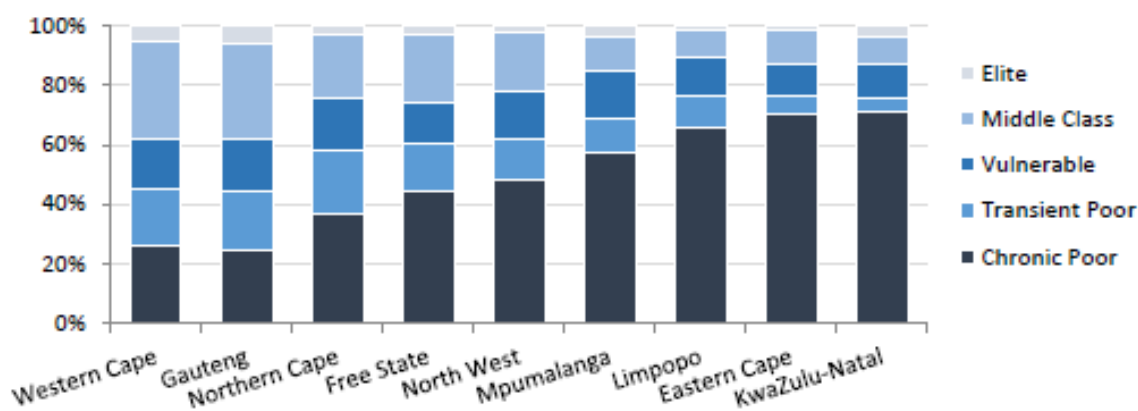
Source: Authors' calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights).

Figure 4: Racial composition of South Africa's five social classes, 2008 and 2014/15
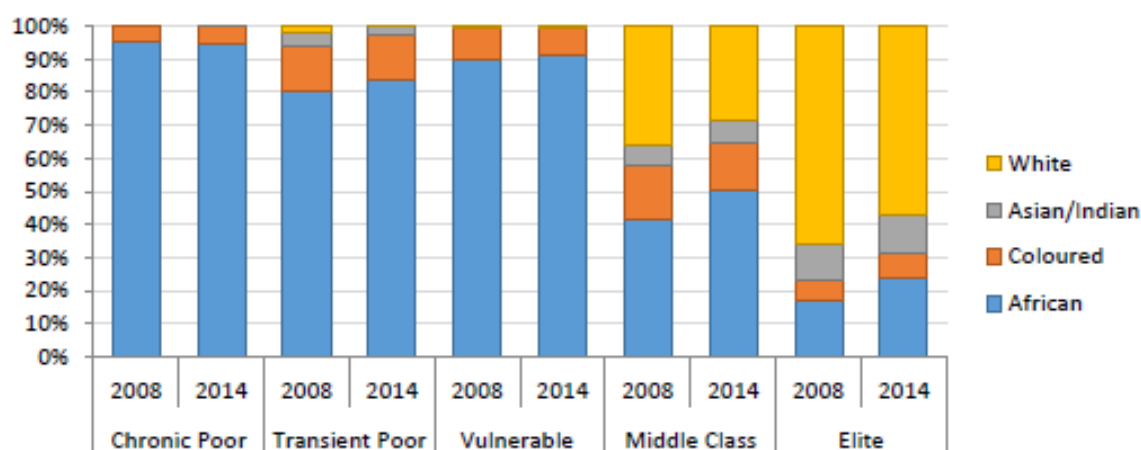
Source: Authors' calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights).

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Table 12: Average characteristics of the head of household (HoH) by social class, 2008 to 2014/15
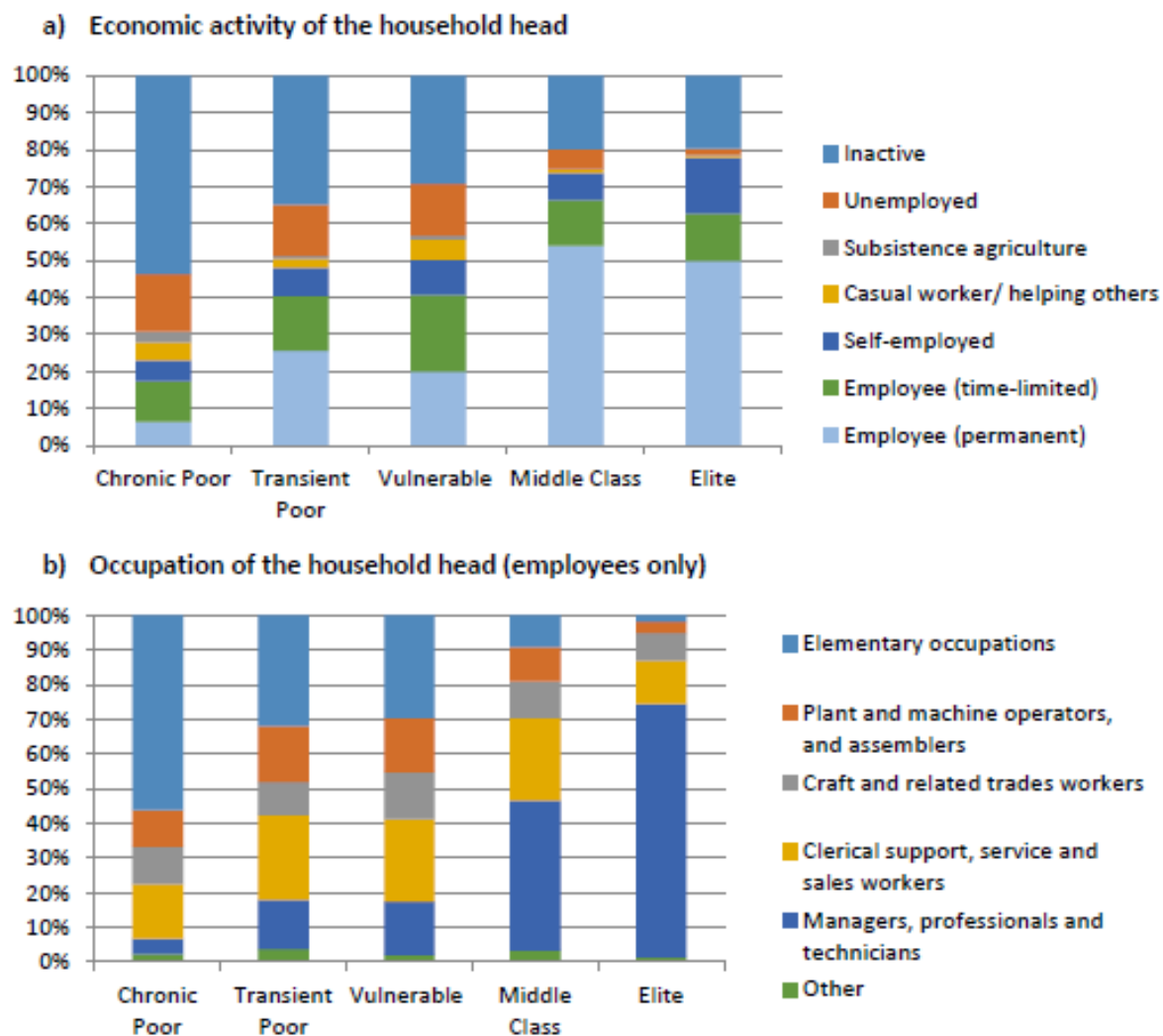
	Chronic Poor	Transient Poor	Vulnerable	Middle Class	Elite	Total
Age	50	45	42	46	48	47
Female	69.4%	51.6%	58.3%	31.4%	28.1%	56.5%
Race						
African	94.8%	81.6%	89.7%	45.7%	17.7%	79.9%
Coloured	5.2%	14.0%	9.2%	14.0%	7.0%	8.7%
Asian/Indian	0.0%	2.5%	1.0%	7.7%	10.0%	2.3%
White	0.0%	1.9%	0.1%	32.7%	65.4%	9.1%
Education (average level if 25 years or older)	5	9	9	12	14	8
No schooling	25.5%	10.0%	8.7%	0.2%	0.7%	15.2%
Less than primary completed (grades 1 to 6)	27.0%	14.0%	15.5%	2.5%	1.3%	17.8%
Primary completed (grade 7)	11.7%	3.2%	8.3%	2.0%	1.9%	7.8%
Secondary not completed (grades 8 to 11)	31.0%	43.1%	45.6%	32.6%	8.9%	34.0%
Secondary completed (grade 12)	4.6%	14.3%	13.0%	24.0%	16.2%	11.3%
Tertiary	0.2%	15.4%	8.9%	38.8%	71.1%	13.8%
Employment status						
Inactive	53.6%	34.9%	29.2%	19.9%	19.7%	39.9%
- of which share of pensioners	35.6%	37.5%	27.3%	33.3%	35.6%	34.7%
Unemployed (discouraged)	3.6%	1.3%	2.0%	1.8%	0.5%	2.6%
Unemployed (strict)	12.0%	12.7%	12.0%	3.5%	1.2%	10.1%
Employed	30.8%	51.2%	56.7%	74.8%	78.6%	47.4%
Employment type (if EMPLOYED)	6.5%	6.3%	8.6%	6.9%	10.2%	7.2%
Employee	55.3%	77.3%	69.9%	85.5%	75.5%	71.4%
- of which share in formal sector	52.6%	75.6%	71.2%	94.8%	92.3%	77.3%
- of which share with permanent contract	36.2%	63.4%	48.9%	81.2%	79.6%	61.8%
- of which share member in trade union	13.8%	33.3%	23.9%	51.0%	29.7%	33.3%
- of which expected share in public sector	12.9%	21.1%	15.0%	28.9%	23.7%	21.1%
Self-employed	17.7%	14.7%	16.3%	9.4%	18.1%	14.5%
- of which share in formal sector	2.6%	14.4%	12.6%	63.1%	70.0%	23.0%
Casual worker/ helping others	15.7%	4.6%	9.6%	1.0%	0.7%	7.7%
Subsistence agriculture	9.1%	1.3%	1.8%	0.3%	0.3%	3.5%

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).

Amongst those who are employed, we differentiate between five types of economic activity, including subsistence agriculture (which accounts for a marginal share of total employment in South Africa), casual work, self-employment, employees with a temporary or time-limited work contract, and employees with a permanent work contract. We find that precarious forms of work including casual employment and employment without a permanent work contract constitute the largest share of all jobs among the poor and the vulnerable, whereas among the middle class and elite 80 per cent of all household heads who work as employees have a permanent contract (see Table 12 and Figure 5a). In line with the observed education patterns, among those who engage as employees, household heads of chronically poor households are most likely to be employed in elementary occupations. Similarly, for household heads belonging to transient poor and vulnerable households, elementary occupations also dominate, followed in significance by service and sales

Figure 5: South Africa's five social classes in the labour market, 2008 to 2014/15

a) Economic activity of the household head

Legend:
- Inactive
- Unemployed
- Subsistence agriculture
- Casual worker/ helping others
- Self-employed
- Employee (time-limited)
- Employee (permanent)

b) Occupation of the household head (employees only)

Legend:
- Elementary occupations
- Plant and machine operators, and assemblers
- Craft and related trades workers
- Clerical support, service and sales workers
- Managers, professionals and technicians
- Other

Source: Authors' calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights).

Note: Figures represent employment status and occupational category limited to heads of households.

Table 13: Movements across classes, 2008 to 2014/15

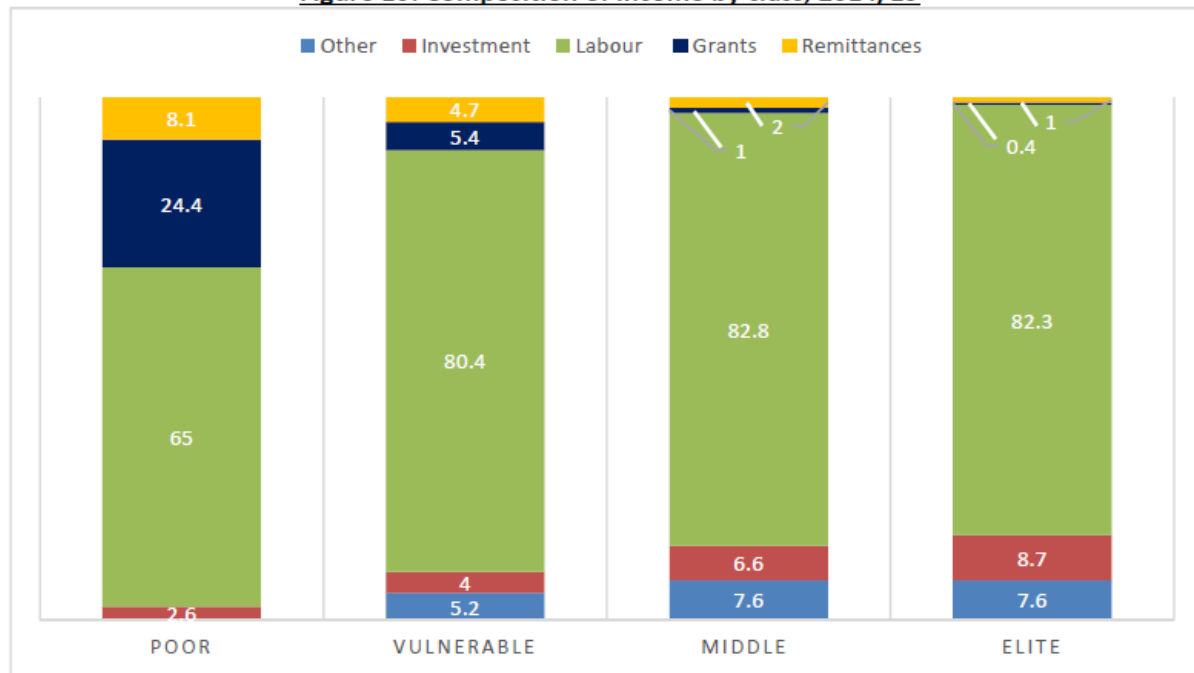| Pooled Sample (two consecutive waves)		wave t					
		Chronic	Transient	Vulnerable	Middle Class	Elite	Total
wave t − 1	Chronic poor	80.46	8.91	8.97	1.53	0.14	100
	Transitory poor	23.57	36.15	23.44	16.46	0.37	100
	Vulnerable	29.43	20.28	31.8	17.23	1.25	100
	Middle class	2.15	7.39	12.11	70.95	7.4	100
	Elite	0.94	1.86	3.41	45.86	47.93	100
	Total	50.98	13.59	14.31	18.35	2.77	100

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).

Table 14: Poverty entry and exit, 2008 to 2014/15

Share (%) by class that…		Pooled	2008-2010	2010-2012	2012-2014
1) …exited poverty:	Chronic Poor	10.64	8.37	8.58	14.98
	Transient	40.27	31.21	40.22	46.39
2) …fell into poverty:	Vulnerable	49.71	58.80	53.35	38.55
	Middle class	9.54	9.79	9.83	9.09
	Elite	2.80	4.94	2.52	1.61

Source: Author's calculations using NIDS waves 1 to 4 pooled sample (post-stratified weights corrected for panel attrition).

Figure 10: Composition of income by class, 2014/15

Legend: Other | Investment | Labour | Grants | Remittances

POOR: Remittances 8.1, Grants 24.4, Labour 65, Investment 2.6

VULNERABLE: Remittances 4.7, Grants 5.4, Labour 80.4, Investment 4, Other 5.2

MIDDLE: 2, Grants 1, Labour 82.8, Investment 6.6, Other 7.6

ELITE: 1, Grants 0.4, Labour 82.3, Investment 8.7, Other 7.6

Source: Own calculations using NIDS Wave 4 applying post-stratified weights.
Notes: Figures represent percentage composition of the sum of the five income sources represented in the graph.

Conclusion:

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Appendix:

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Average balanced panel, all waves
N	15631	17626	18689	22740	23891	6859
African	0.79	0.81	0.81	0.82	0.78	0.84
Less than matric	0.84	0.84	0.83	0.82	0.79	0.77
Matric	0.10	0.10	0.10	0.10	0.12	0.13
Tertiary	0.05	0.06	0.06	0.08	0.10	0.10
Youth (16-29)	0.25	0.25	0.26	0.26	0.26	0.34
Prime (30-49)	0.22	0.22	0.22	0.22	0.21	0.37
Older (50-64)	0.11	0.10	0.10	0.10	0.09	0.18
Female	0.54	0.54	0.54	0.54	0.54	0.68
Rural	0.44	0.44	0.44	0.43	0.40	0.45
Urban	0.48	0.48	0.49	0.51	0.54	0.48

Notes: All cell proportions are unweighted.

Poverty rates

Table: Poverty rates, cross-section

	2008	2010	2012	2014/15	2017
StatsSA food poverty line (R515)	36.32	42.00	37.81	30.38	24.71
StatsSA upper bound poverty line (R1136)	61.93	65.69	63.82	56.89	52.24
SALDRU upper bound poverty line (R1504)	67.72	71.99	69.50	65.62	61.03

Notes: All cell proportions are weighted using post-stratified weights.

Table: Poverty rates, balanced panel

	2008	2010	2012	2014/15	2017
StatsSA food poverty line (R515)	35.87	38.26	31.68	25.06	20.40
StatsSA upper bound poverty line (R1136)	64.93	63.54	59.65	51.27	49.90
SALDRU upper bound poverty line (R1504)	72.03	72.03	65.83	60.59	59.94

Notes: All cell proportions are weighted using panel weights.

Table: Panel vs cross section: descriptives

		Wave 1		Wave 2		Wave 3		Wave 4		Wave 5	
		Cross-section	Balanced panel	Cross-section	Balanced panel	Cross-section	Balanced panel	Cross-section	Balanced panel	Cross-section	Balanced panel
Total	poor	61.93	64.93	65.69	66.03	63.82	63.95	56.89	55.75	52.24	51.38
	Ave. p/c expenditure	2455.0	1901.6	2252.7	1917.4	2091.3	1946.7	2436.7	2270.4	3026.7	2358.3
African	poor	72.35	69.86	75.81	72.20	73.15	69.24	65.34	60.76	59.12	56.47
	Ave. p/c expenditure	1293.0	1345.1	1169.7	1318.7	1266.4	1416.2	1531.2	1676.0	1889.3	1825.5
White	poor	2.83	2.95	4.32	3.22	3.90	2.15	0.31	0.00	1.48	0.00
	Ave. p/c expenditure	10690.4	12085.6	10120.9	10767.6	8802.0	9808.4	10410.4	10610.2	13763.7	9518.2
Less than matric	poor	70.53	73.19	73.66	74.58	72.33	73.77	64.92	65.82	62.02	62.30
	Ave. p/c expenditure	1554.2	1153.7	1427.6	1185.1	1347.0	1243.1	1553.2	1446.0	1781.0	1383.9
Matric	poor	39.16	51.32	45.50	55.23	45.45	54.44	39.63	44.35	34.46	40.84
	Ave. p/c expenditure	3944.3	2675.1	3725.2	2679.7	3083.3	2589.4	4139.8	3321.5	4124.3	2926.6
Tertiary	poor	15.15	24.54	23.53	31.74	20.58	27.58	17.38	24.88	14.07	19.60
	Ave. p/c expenditure	8743.2	6341.6	7458.3	5105.3	6703.7	4677.8	6769.4	4680.0	9021.5	5506.6
Youth	poor	62.72	71.12	64.88	73.07	58.40	67.00	47.47	57.76	44.62	51.88
	Ave. p/c expenditure	2093.7	1265.5	2368.2	1311.9	2118.4	1475.0	2553.8	1846.8	2529.9	1970.1
Prime	poor	51.20	58.32	51.64	60.34	50.57	61.29	41.27	52.32	45.23	48.78
	Ave. p/c expenditure	3137.3	2025.7	3273.2	2000.3	2799.4	1999.8	3413.8	2497.8	2691.3	2533.1
Older	poor	52.39	62.74	53.61	60.93	50.71	59.97	46.47	55.29	56.83	55.03
	Ave. p/c expenditure	4071.9	2860.5	3623.3	2876.0	4095.0	2715.9	5757.1	2679.0	2564.2	2846.1
Female	poor	64.59	69.24	68.54	70.72	67.03	69.23	60.14	61.48	55.70	56.51
	Ave. p/c expenditure	2329.2	1675.1	2088.7	1745.2	1938.9	1712.2	2286.7	1949.5	2719.6	2117.0
Male	poor	59.11	57.22	62.66	58.07	60.45	55.00	53.49	45.96	48.66	42.74
	Ave. p/c expenditure	2588.7	2307.3	2427.3	2209.7	2251.4	2344.7	2593.7	2819.1	3344.1	2764.4
Rural	poor	87.20	84.85	87.64	85.19	87.02	83.62	80.41	77.43	78.21	73.80
	Ave. p/c expenditure	734.3	800.0	742.7	921.2	732.0	835.8	968.0	1068.6	995.7	1098.4
Urban	poor	46.27	50.31	52.47	54.16	49.98	51.56	42.90	42.64	38.84	38.65
	Ave. p/c expenditure	3544.7	2728.5	3218.9	2583.4	2925.9	2676.4	3343.4	3026.5	4111.5	3124.7

Notes:

a) Cross sectional cell proportions weighted using post stratified weights, balanced panel cell proportions weighted using Wave 5 panel weights.

b) Age variables defined in Wave 1 (2008) with "Youth" identifying those aged 16 to 29 in 2008, "Prime" identifying those aged 30 to 49 in 2008, and "Older" identifying those aged 50 to 64 in 2008. Thus, these categories are dynamic, with "Youth" identifying those aged 24 to 38 in 2017, "Prime" identifying those aged 39 to 58 in 2017, and "Older" identifying those aged 59 to 73 in 2017.

c) Monetary figures are expressed in March 2017 Rand values.