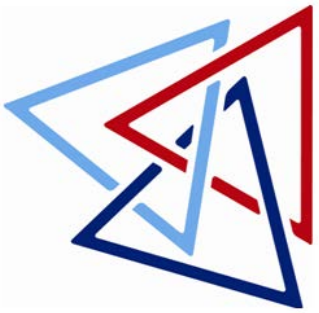

Informal sector employment and poverty in South Africa: identifying the contribution of 'informal' sources of income on aggregate poverty measures

Paul Cichello and Michael Rogan

Abstract

We examine the role that informal sector employment plays in poverty reduction using data from the National Income Dynamics Study (NIDS). Using a Shapley decomposition approach, we find that government transfers and formal sector jobs are the dominant drivers of aggregate poverty reduction. Informal sector jobs currently play a limited role in poverty reduction at the national level. This is primarily driven by the fact that there are relatively few informal sector jobs compared to formal sector jobs. On a per-job basis, the poverty reduction associated with formal sector jobs and informal sector jobs is quite similar. The poverty reduction associated with one informal sector job is generally between 50 to 100 per cent of the poverty reduction associated with one formal sector job (depending on the poverty measure, poverty line and year chosen). Therefore, from a poverty reduction standpoint, policy makers are encouraged to view job gains and losses in the informal sector approximately on par with gains and losses of formal sector jobs.

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Informal sector employment and poverty in South Africa: identifying the contribution of 'informal' sources of income on aggregate poverty measures

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1. Introduction

Against the backdrop of very high rates of unemployment in post-apartheid South Africa, the role of the informal sector, the informal economy or informal employment, more broadly[1], in employment creation and overall development has been marginalised. Former state president Thabo Mbeki famously, and somewhat controversially, identified informal workers as part of the 'second economy' which is characterised by poverty and under-development and which is structurally disconnected from the formal economy (see Devey et al., 2006; Valodia & Devey, 2012). Even where there has been some degree of recognition of the importance of the informal sector to employment creation and livelihoods, policy responses are often unsupportive. For example, the government's principle policy document, the National Development Plan (NDP), has projected that between 1.2 and two million new informal sector 'jobs' (including domestic work) will be needed by 2030 if the country is to meet its targets in reducing unemployment (National Planning Commission, 2012: 121). The document is almost completely silent, however, in terms of how the informal sector will be supported or how current policies can be extended to ensure that the informal sector grows in line with overall employment growth.

Policy gaps and the lack of recognition of the importance of the informal sector are not unique to the South African context and two of the key contrasting views of the informal sector have often suggested that, on the one hand, the sector is an indicator of a 'backward' and unproductive economy while, on the other hand, it is understood as a critical source of employment and earnings for workers on the margins of the labour market. In this paper we explore the case for supporting informal types of employment by considering the extent to which earnings from informal sector self-employment (and informal employment, more broadly) contribute to a reduction in income poverty. We argue that, by using a popular, intuitive and widely understood indicator of development, namely the poverty headcount rate,

[1] See the ILO (2013) or Hussmanns (2004) for an overview of these terms.

it is possible to make the case that the informal sector should be an important part of government's strategy to reduce income poverty.

The remainder of the paper is structured as follows. Section two provides a brief description of the informal sector in South Africa. In linking the sector to income poverty, the section also offers a brief review of the post-apartheid poverty literature as well as recent work on low earnings and 'working poverty'. Section three identifies the sources of data which are suitable for measuring both informal sector employment and income poverty. It then describes the decomposition method and the simulation techniques which we use to measure the contribution of various employment types to poverty reduction. Section four presents our findings of the decomposition, highlighting poverty reduction of various types of employment on both an aggregate and a per-job basis. We place special emphasis on comparing income from informal self-employment, where jobs are exclusively informal to income from our formal employment income, where jobs are almost exclusively from formal sector employers but also present results from other employment types that are either 'mixed' (i.e. incorporating both informal sector employers and formal sector employers) or other employment (i.e. neither formal nor informal sector employers). Section five presents alternative approaches. First, we decompose the change in poverty reduction over the 2008 and 2012 period. Second, we show the results of a simple simulation of poverty reduction following the addition of 1 million new informal self-employment jobs. Section six concludes by considering the case for supporting or developing the informal sector as a way of contributing to the reduction of poverty.

2 The informal sector and poverty in South Africa

2.1 The informal sector in South Africa

The informal sector constitutes a small share of the total workforce in South Africa, relative to other sub-Saharan African countries (ILO, 2013; Kingdon & Knight, 2004). Nonetheless, the sector still accounts for about 17 per cent of total employment or about 2.4 million jobs according to Statistics South Africa's official estimates (Statistics South Africa, 2015). A number of stylised facts about the broad characteristics of employment in the informal sector in South Africa are now widely accepted. For example, activities in the informal sector are concentrated largely in the wholesale, retail and trade sector (44 per cent), services (16 per cent), and construction (16 per cent) (Statistics South Africa, 2015). In terms of status in employment, most of those working in the informal sector (61 per cent) are self-employed while 36 per cent are employees (ILO, 2013).

While the informal sector remains a crucial livelihood source for many workers who exist at the margins of the labour market, it is vulnerable in a number of ways. An analysis (Verick,

2010) of the South African labour market during the 2008 global financial crisis suggested that, instead of absorbing workers who were displaced from the formal sector, the majority (64 per cent) of job losses during the immediate crisis period were actually in the informal sector. Moreover, the informal sector is often ignored in policy documents and, in some cases, policy responses are openly hostile towards workers in the sector. Further evidence that the informal sector is vulnerable is seen in work which has shown that informal self-employment is not a free-entry sector (Kingdon & Knight, 2004) and that there are a number of barriers to entry (Cichello et al. 2011). A more nuanced analysis, moreover, has suggested that there is significant segmentation within the South African informal sector itself (Heintz & Posel, 2008). The informal sector in South Africa, therefore, should not be characterised as a homogenous sector which can provide free-entry to the unemployed.

2.2 Poverty and the informal sector in South Africa

The main link between the informal sector and income poverty, in broad terms, is through its contribution to employment creation and earnings. According to a World Bank firm survey in Johannesburg, informal enterprises were found to generate an average of three jobs- the same number as small formal firms. While about 44 per cent of these jobs were allocated to household members, the vast majority (93 per cent) were full-time, paid jobs (Chandra et al., 2002). With respect to informal traders, in particular, there is additional evidence that opportunities to trade on a greater scale in concentrated areas (i.e. city centres and markets) creates the possibility of new opportunities, additional service industries and products (Philip, 2010).

Although earnings tend to be low in the informal sector, an estimate of the contribution by informal self-employment to total income earned from all employment in South Africa is about five per cent (Wills, 2009a). In terms of the wider economy, one measure suggests that the informal sector contributes about 26 per cent of total value added in South Africa. The same study found that, the sector contributes between 7-12 per cent of South Africa's total gross domestic product (GDP) (Budlender et al., 2001; Ligthelm, 2006). In terms of expenditure, an estimated R51.7 billion (or 6.3 per cent of total household expenditure) was spent at informal businesses in 2004 (Ligthelm, 2006).

Turning now to income poverty specifically, the main finding from the poverty literature in South Africa is that the increase in government transfers (in the form of means tested social grants) during the early 2000s has been the main driver of the well-documented decrease in income poverty over the past decade (Leibbrandt et al., 2010; Posel & Rogan, 2012; van der Berg et al., 2008). To some extent, this large impact of government transfers on poverty reduction has tended to overshadow the contribution of other income sources to reducing aggregate poverty levels. Nonetheless, a handful of studies (Posel & Casale, 2006; Rogan &

Reynolds, 2015; Vermaak, 2010, 2012) have investigated the link between labour market earnings and income poverty, specifically. However, most of this work does not distinguish between formal and informal sector earnings in their respective analyses. One exception is a study by Rogan and Reynolds (2015) which found that about 41 per cent of workers (both the self-employed and employees) in the informal sector were below the poverty line in 2012 (compared with 17 per cent of workers in the formal sector) and that about 37 per cent of the working poor in South Africa are from the informal sector (Rogan & Reynolds, 2015). To the best of our knowledge, however, there is no research on the contribution of the informal sector to poverty *reduction* in South Africa.

3. Data and methods

3.1 Data options: Statistics South Africa's household surveys

To estimate the contribution of informal-sector earnings to poverty reduction, two types of information are required. First, the survey must collect information on employment status which can be used to measure informal-sector employment. Second, the same survey needs to have comprehensive information on total household income with which to identify households that are below the poverty line. Despite the availability of many household surveys in South Africa, there are surprisingly few data sources that capture comprehensive and well-defined information on both employment and total household income.

Perhaps the logical starting point would be the official Labour Force Surveys (LFSs) (collected bi-annually between 2000 and 2007 and then quarterly from 2008). Both the LFSs and the Quarterly Labour Force Surveys (QLFSs) capture comprehensive information on labour-market status and earnings, and can clearly identify employment in the informal sector. Estimates of income poverty, however, are difficult to undertake when using the LFSs since they do not capture comprehensive information on total household income (e.g. income from social grants and remittances are not measured by most LFSs). The QLFSs are even less appropriate for poverty analyses since they only capture information on labour-market earnings (i.e. not total household income). There is, therefore, no possibility for using these data to analyse household poverty.

In terms of Stats SA's national household surveys, the 2008/09 Living Conditions Survey (LCS) and the Income and Expenditure Surveys (IES) are arguably the ideal sources for the analysis of poverty. The LCS is the source of Stats SA's official reports on both poverty lines and poverty levels; it was originally designed as a tool to monitor changes in living standards and poverty risks over time. In addition to comprehensive information on household income and expenditure (from which poverty can be measured), the LCS also captures some potentially useful data on employment. In practice, however, the LCS cannot be used to link

informal-sector earnings to poverty reduction because Stats SA released an aggregated income variable only, therefore it is not possible to link income with specific types of employment.[2] The IES is, of course, the other main source of poverty estimates in South Africa but it captures very little information on self-employment and wage-employment.

This leaves the annual General Household Surveys (GHSs) as the last possible source of 'official' data on the link between informal employment and poverty. However, the module on employment is not very detailed and the surveys, therefore, are fairly blunt tools with which to measure both poverty and informal-sector earnings.

3.2 Preferred data option: The National Income Dynamics Study (NIDS)

Given the limitations of Stats SA's official surveys in terms of linking informal-sector earnings with household poverty status, we turn now to an alternative source of data. The National Income Dynamics Study (NIDS) is a nationally representative household panel survey which is conducted by the Southern Africa Labour and Development Research Unit (SALDRU) at the University of Cape Town every two years (2008, 2010, 2012, 2014). The NIDS data currently offer the best possible way to link informal earnings with poverty reduction in South Africa, since a wide range of income sources are captured and the survey collects detailed information on employment.

However, in terms of the measurement of informal-sector employment there are two limitations associated with using the NIDS data. These relate to the important distinction between (1) informal-sector employment and (2) informal employment, a broader and different concept developed by the International Labour Organization (ILO) and the International Conference of Labour Statisticians (ICLS). The latter concept is concerned mainly with working conditions and specifically also includes employees *in the formal sector* that work 'informally' without regular contracts and/or benefits (also called 'unprotected workers').

Unfortunately, analyses of the NIDS data are not able to provide estimates of employment numbers for the informal sector as such. This is because the questionnaire does not allow for a distinction between informal employees *in the informal sector* and those *in the formal sector*. Thus, some formal-sector employees that work 'informally' are included in the NIDS 'informal wage-employment' numbers. A second limitation is that, when using the NIDS data, it is not possible to distinguish, among the informally self-employed, between own-account workers (enterprise owners *without* employees) and employers (enterprise owners *with* employees).

[2] Stats SA itself no longer has access to the raw earnings data from the survey so it is not possible to attempt to reconstruct the aggregate income variable in any way (personal correspondence with Stats SA).

The questionnaire is also different from Stats SA's labour market and household surveys in that it includes a separate section of questions for 'casual workers'. According to the fieldworker instructions, this category includes a range of occupations such as 'construction work, waitressing, gardening or paid domestic work'. Based on the definition[3] of casual work, it is likely that most workers identified in this category would be informal employees but, again, it is not possible to distinguish whether this employment is in the informal sector or in the formal sector. Moreover, it is not possible to identify the domestic workers within this category because 'domestic work'[4] is not an occupational code in the NIDS and there is no industry-code variable linked with casual work. (In any case, domestic workers are not part of the standard definition of the informal sector – see ILO 2013.) Consequently, the 'casual worker' category is problematic as well.

Therefore, the NIDS data leave us with a potentially useful but constrained data source in terms of analysing employment in the informal *sector*. Still, it appears to be the best source of data for the complex task at hand.

3.3 Definitions

We use the NIDS data to define five distinct employment categories (see Table 1). The two categories of primary use to this analysis are informal self-employment and informal regular wage-employment. The former includes only the self-employed in enterprises that are not registered for income tax or VAT. The latter category corresponds to the broad informality definition of the 17th ICLS. It includes a subset of regular[5] wage employees (from both formal- and informal-sector firms) that are deemed to have informal employment. For our purposes, we would like this category to be limited to only those workers hired by informal-sector firms. Therefore, the category adds an additional criterion, 'non-payment of UIF[6] contributions', to the standard (worker-based) definition of informal wage-employment. This will improve the likelihood that workers captured in this category are working in the informal sector.[7] (See Table 1 for definitions of the five categories.) As we still cannot eliminate all

[3] The actual definition for casual work is given as 'work that is irregular and short-term, or any work that the respondent does in addition to any work that she/he had described in the previous questions'.
[4] Only domestic workers with *regular* (i.e. not casual) wage-employment can be identified as a specific occupational category in the NIDS.
[5] The NIDS is unique in that it distinguishes between 'regular' employment and 'casual' employment and, as outlined earlier, the questionnaire has two separate modules for regular and casual employees. This makes the NIDS questionnaire somewhat different from the LFS and QLFS questionnaires.
[6] The Unemployment Insurance Fund (UIF) is a government-administered fund to which employees contribute, through monthly deductions from their wages. Upon involuntarily losing a job, the employee can claim benefits for a period, an amount that depends on the period of employment and ending wage/salary.
[7] This specific criterion has not been used in the South African literature (compare Heintz & Posel 2008 and Wills 2009). UIF payment is a potentially useful proxy for employment in the formal sector since all employers and workers are required by law to contribute to the UIF. The only exemptions are for workers working less than 24 hours a month for an employer; public servants; foreigners working on contract; workers who get a monthly state (old age) pension; or workers who earn only commission.

those employees who are working for formal-sector firms, this category is recognised as coming from 'mixed' sectors.

Table 1: Informal employment definitions

INFORMAL SECTOR	
Informal self-employment	Self-employed in enterprises that are not registered for income tax or VAT
MIXED: INFORMAL SECTOR PLUS FORMAL SECTOR	
Informal (regular) wage employment (augmented)	Employees with regular employment who do not receive both pensions and medical aid from their employers, and do not contribute to the Unemployment Insurance Fund (UIF) and who do not have written employment contracts
Casual employment	Employees with work that is irregular and short-term, or any work that the respondent does in addition to their first two wage jobs/self-employment businesses
FORMAL SECTOR	
Formal sector employment	Self-employed in VAT or tax-registered enterprises; *and* Employees with regular employment who have a written contract or who pay UIF contributions or who receive both employer-based pensions and medical aid
OTHER EMPLOYMENT CATEGORIES	
Domestic work	Employees with regular employment who work in 'private households'
Subsistence agriculture	Individuals engaged in subsistence agriculture. This is a relatively small component in the data and is often omitted in the analysis that follows

We suggest that the addition of the UIF criterion to the worker-based definition of informal wage-employment (i.e. the one frequently used in the South African literature) is a potentially useful way of narrowing the definition and measurement of 'informal employees' to increase the proportion of those inside the informal sector (i.e. since it is unlikely that informal-sector employers would deduct UIF payments from their employees). This might be particularly important when analysing the NIDS data since these data preclude the possibility of replicating the estimates of informal wage-employment inside the informal sector, as reported by Stats SA (2015) and the ILO (2013).

Despite the substantial differences in the way in which the NIDS questionnaire measures employment (compared to the QLFSs), 2008[8] estimates from the NIDS of the categories of employment in Table 1 are broadly in line with those from the QLFS. For example, we estimate that there were roughly 1.3 million workers in informal self-employment in wave 1 of the NIDS (2008), compared with about 1.5 million in the LFS of the second quarter of 2008 (own calculations from wave 1 of the NIDS and 2008 Q2 of the QLFS).

[8] We make this comparison with the first (2008) wave because NIDS is a longitudinal survey and the 2008 wave is the only one that is not affected by any type of survey attrition.

Notwithstanding the important limitations of using the NIDS data to measure informal employment and the informal sector, we therefore have some confidence that our estimates are broadly in line with those derived from the official QLFS.

3.4 Methods

In order to estimate how formal and informal sector employment impact poverty, we must first define and calculate poverty. In this paper, we use the Foster-Greer-Thorbecke (FGT) class of poverty measures. These measures include the popular poverty headcount ratio (P_0), as well as the poverty gap index (P_1) and the severity of poverty (P_2) which place increasing importance on reductions in poverty that occur further below the poverty line. We will construct these estimates using three possible poverty lines.[9]

The extent to which (formal or) informal sector employment reduces national poverty rates depends on three things: the number of jobs the sector creates, the earnings that these jobs bring to households and the extent to which that increased income reduces poverty in households below the poverty threshold. We begin our analysis by identifying how income from various income sources- both labour income and non-labour income- reduce national poverty levels in both absolute and relative terms, where the relative values are a per cent of total poverty reduction as compared to a counterfactual with no income. We use the Shapley decomposition approach (see Appendix A) to estimate the average marginal effect of individual income sources on the reduction of aggregate poverty rates (Shorrocks 2013). In order to estimate the decomposition, our analysis makes use of the Distributional Analysis STATA Package (DASP) module developed by Araar and Duclos (2007). The decomposition (Araar & Duclos, 2009a) identifies the contribution of each income source to the elimination of poverty by comparing what the FGT measures would have been without each respective source of income. By making use of the Shapley values, the model estimates the average marginal effect of each income source over all possible combinations of income sources.

Next, we consider the total number of jobs classified under each employment category (from Table 1) and estimate the per-job 'impact' on poverty for each type of employment. For ease of interpretation, we consider the per million jobs impact on national poverty rates. We then create ratios using formal employment as the numeraire so that we can estimate the impact of a typical informal self-employment job on poverty levels relative to a typical formal employment job.

We then use a similar approach to examine the change in poverty over the 2008 to 2012 period. We decompose the change in poverty rates over the 2008 to 2012 period based on the

[9] These poverty lines are as follows: R307, R424, and R594 monthly per capita household income in March 2010 (see Statistics South Africa 2014, Table 2).

changes in income from various income sources. In this case, the relative contributions represent the change in poverty rates due to an income source relative to the total change in poverty rates observed of the 2008 to 2012 period, i.e. the poverty reduction since 2008 is accounted for rather than poverty reduction compared to a counterfactual scenario with no income whatsoever. These poverty dynamics offer a different perspective and emphasise the recent changes in the economy. For example, using this approach, even a very valuable sector of the economy, if stagnant, will automatically offer no impact on the change in poverty, despite the fact that the income source may well have different poverty reduction levels attributed to it in the two cross-sectional periods. In practice, we estimated these changes over time by modifying the Araar and Duclos decomposition coding slightly to allow for an initial level of income and to list results more suitable for analysing changes over time.

Finally, we demonstrate a simple simulation which illustrates a 'back of the envelope' assessment of the impact that adding one million new informal self-employment jobs would have on national poverty rates. This simulation assumes that all jobs would be given to randomly selected unemployed individuals (either searching or non-searching) and that no other household income would be affected. We assume the new earnings would come from random draws from the distribution of earnings from current informal self-employment jobs.[10]

4. Findings

4.1 Poverty and informal employment

We begin by presenting aggregate poverty estimates for the South African population as a whole at Statistics South Africa's three official poverty lines. In line with the broader post-apartheid poverty literature, the table shows that, at the official upper-bound poverty threshold (R594 per capita monthly household income) roughly half of the population is identified as income poor in the first round (2008- wave 1) of NIDS. At the food poverty line (R307) about 30 per cent of South Africans live in poor households and therefore are not likely to be able to meet even their basic food and nutritional needs. While much more could be discussed in relation to the findings presented in the table, the key point is that the aggregate estimates of income poverty based on the NIDS data are closely in line with estimates from Statistics South Africa's household surveys (in particular the LCS and the GHSs). As such, the analysis can now be narrowed to a focus on poverty and informal employment.

[10] In practice, we identify the mean (μ) and standard deviation (s) of log earnings for existing informal self-employment jobs. For each unemployed individual that is randomly selected to get one of these new jobs, we create pay by taking $e^{(\mu+zs)}$ where z is a randomly generated number from the standard Normal distribution.

Table 2 Poverty estimates (P_α) for South Africa, 2008

	Z = 307	Z = 424	Z = 594
P_0	0.287	0.406	0.521
	(0.004)	(0.004)	(0.005)
P_1	0.122	0.183	0.264
	(0.002)	(0.002)	(0.003)
P_2	0.073	0.112	0.168
	(0.002)	(0.002)	(0.002)

Source: Own calculations from NIDS (2008)
Notes: Standard errors are in brackets. All poverty lines and income are measured in March 2010 prices. Household well-being is estimated as average per capita total household monthly income.

Income from the formal sector is of unparalleled importance when it comes to overall income received by South Africans. This is immediately apparent in the first column of Table 3, which shows that such income comprises 56.7% of total per capita income received by households. In comparison, informal self-employment adds just 3.1% and our two mixed categories- informal wage employment and casual employment- comprise just 2.4 and 2.2 per cent of income, respectively. Non-labour income categories are also important but none, other than imputed rental income (15.6%), garner more than a 7 per cent share of income.

However, the *relative* importance of income sources to poverty reduction[11] looks markedly different. When we decompose the contribution of income sources to poverty using, for example, the food poverty line of 307 Rand, income from formal sector employment accounted for a 26.9 percentage point reduction in the 2008 poverty headcount (see column 3). This 26.9 percentage point reduction in poverty represents 37.7 per cent of the total reduction in poverty (see column 2). While still the largest single contributing income source to poverty reduction, formal sector earnings now account for just 37.7 per cent of poverty reduction even though it accounted for 56.7 per cent of total income received. In contrast, social grants account for 20.7 per cent of overall poverty reduction despite accounting for just 6.6 per cent of all income received by households.

The reason for this is that social grant income is well targeted to households that would otherwise be below the poverty line. Additionally, the grant income is not so large that households who receive it end up well above the poverty line. Much more of the money is having a poverty reducing impact. In contrast, formal sector earnings are either not going to households that would otherwise be poor or are adding so much to those household incomes that the household ends up far beyond the poverty level (i.e. much of the income is not poverty-reducing).

[11] For the full poverty decomposition results for P_1 and P_2 see Appendix B.

Table 3 Decomposition of the poverty headcount (P_0) by income source, 2008

		Z = 307		Z = 424		Z = 594	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.031	-0.036	-0.025	-0.035	-0.021	-0.036	-0.017
	(0.005)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Informal regular wage emp.	0.024	-0.044	-0.031	-0.045	-0.027	-0.043	-0.020
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)
Casual employment	0.022	-0.038	-0.027	-0.038	-0.023	-0.033	-0.016
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Domestic work	0.010	-0.026	-0.018	-0.024	-0.014	-0.021	-0.010
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Formal sector employment	0.567	-0.377	-0.269	-0.438	-0.260	-0.500	-0.239
	(0.012)	(0.005)	(0.004)	(0.005)	(0.004)	(0.006)	(0.004)
Social grant income	0.066	-0.207	-0.147	-0.148	-0.088	-0.099	-0.047
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.001)
Investment income	0.070	-0.028	-0.020	-0.033	-0.020	-0.037	-0.018
	(0.007)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Remittance income	0.048	-0.056	-0.040	-0.054	-0.032	-0.048	-0.023
	(0.008)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Imputed rental income	0.156	-0.180	-0.129	-0.179	-0.106	-0.176	-0.084
	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)	(0.002)
Total	1	1	-0.713	1	-0.594	1	-0.479
	(0)	(0)	(0.004)	(0)	(0.004)	(0)	(0.005)

In Table 4 we present the share of poverty reduction from each income source divided by the overall share of income. These 'poverty-effectiveness' ratios fall between a range of 0.4 for investment income to 3.21 for social grants. The key finding from the table is that income from types of employment other than the formal sector is relatively effective in reducing poverty even if their absolute contribution to aggregate reductions in poverty was small. For example, the ratio of poverty reduction shares to income shares is greater than two (at all three poverty lines) for domestic work. This suggests, as outlined above, that income from domestic work is particularly well targeted to workers from poor households and that it is important in lifting domestic workers and their households above the poverty line. In terms of earnings from our two mixed categories of informal employment, the poverty-reducing effectiveness of these types of jobs is also relatively high. The ratios for informal regular wage jobs are just under two at all three poverty lines. Interestingly, the ratios for informal sector employment are somewhat lower (1.14, 1.13 and 1.16 at the three poverty lines, respectively). This suggests that income from informal sector enterprises is either less well targeted to workers below the poverty line or that, where it is received, it is not enough to move households out of poverty (relative to income from other types of informal employment). More broadly though, the income from informal sector self-employment still

has a substantially higher 'poverty-effectiveness' ratio than earnings from the formal sector (0.66, 0.77 and 0.88, respectively).

Before moving on, a few points are worth noting. First, using this simple approach, social grant income appears well targeted and it is clearly a critical lynchpin in aggregate poverty reduction. Second, formal sector employment- in aggregate- is crucial to overall poverty reduction in South Africa. Formal sector income may not be particularly well distributed (i.e. among those residing in poor households), but it is such a dominant portion of the overall income that it is a vital component to poverty reduction overall (even though the ratio of relative poverty reduction to overall income share is only 0.66). Third, policymakers should also distrust notions that increases in informal sector employment, alone, would solve national poverty issues. Despite a moderate level of poverty-effectiveness (the ratio of poverty reduction to the overall income share derived from informal self-employment, for example, is 1.14 at the food poverty line), the total income provided by this sector is too small to eliminate national poverty.

Table 4 Poverty-effectiveness ratios for the decomposition of the poverty headcount (P0), 2008

		Poverty-effectivenss ratios		
Income Source	**Income Share**	**Z = 307**	**Z = 424**	**Z = 594**
Informal self-employment	0.03	1.14	1.13	1.16
Informal regular wage emp.	0.02	1.86	1.90	1.81
Casual employment	0.02	1.74	1.72	1.48
Domestic work	0.01	2.59	2.41	2.13
Formal sector employment	0.57	0.66	0.77	0.88
Social grant income	0.07	3.12	2.24	1.49
Investment income	0.07	0.40	0.47	0.53
Remittance income	0.05	1.18	1.14	1.02
Imputed rental income	0.16	1.15	1.14	1.12

Tables 5 and 6 present the results of the same decomposition analysis for each of the FGT indicators based on 2012 data (using the official upper-bound poverty threshold of R594)[12]. These results demonstrate how the poverty-effectiveness of social grant income becomes more prominent for P_1 and P_2 measures as compared to the simple poverty headcount ratio (P_0). Likewise, formal sector earnings perform worse in poverty effectiveness as the alpha increases to 1 and 2. This is again intuitive. As the alpha increases, our poverty measure places increasing emphasis on income that draws households closer to the poverty line even if they don't reach it outright. Well-targeted social grant income, which flows into poor households that still don't get above the poverty line, will now receive more weight in poverty reduction measures, whereas a sizeable portion of formal sector earnings would have zero poverty impact once the household has crossed the poverty line.

Table 5 Decomposition of poverty (Z = 594) by income source, 2012

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.026	-0.037	-0.022	-0.037	-0.030	-0.036	-0.032
	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Informal regular wage emp.	0.024	-0.037	-0.022	-0.037	-0.030	-0.036	-0.032
	(0.004)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Casual employment	0.013	-0.027	-0.016	-0.029	-0.024	-0.030	-0.026
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Domestic work	0.012	-0.023	-0.014	-0.029	-0.024	-0.028	-0.025
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Formal sector employment	0.635	-0.543	-0.323	-0.390	-0.317	-0.339	-0.301
	(0.013)	(0.006)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Social grant income	0.071	-0.116	-0.069	-0.226	-0.184	-0.259	-0.230
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Investment income	0.057	-0.027	-0.016	-0.023	-0.019	-0.023	-0.020
	(0.007)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Remittance income	0.024	-0.034	-0.020	-0.042	-0.034	-0.043	-0.039
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Imputed rental income	0.135	-0.150	-0.089	-0.181	-0.147	-0.200	-0.178
	(0.005)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Total	1	1	-0.595	1	-0.813	1	-0.888
	(0)	(0)	(0.005)	(0)	(0.002)	(0)	(0.002)

The change in poverty-effectiveness of income from informal self-employment also tends to decline but only slightly as the p-alpha measures increase. For example, the decline in 2008 for the R 307 poverty line is from 1.14 to 1.06 as compared to a decline from 0.66 to 0.44 for formal sector employment. This small decline holds up across all our various poverty lines in each year. The same is true for informal wage employment. For casual employment, the

[12] Appendix C shows the results at the two lower poverty lines.

poverty-effectiveness ratios actually increase or hold almost identical. This is in stark contrast to the consistent large increases for social grants and decreases in formal sector earnings.

We now turn our focus to the per-job impact on poverty rather than the aggregate impacts. While the NIDS survey does not necessarily capture every job an individual has, it does capture the vast majority of jobs. For example, self-employment jobs are captured separately from regular (formal or informal) wage employment and casual employment. So if an individual has two jobs of different types, the survey captures both. Additionally, the NIDS questionnaire captures information on the first two of each respondent's regular wage employment jobs. The survey also captures whether the individual has more than one self-employment job but does not collect any information on this second job. In the analysis below, we assume the second self-employment job is in the same sector (formal or informal) as the first self-employment job.

Table 6 Poverty-effectiveness ratios for the poverty (Z = 594) by income source, 2012

		Poverty-effectiveness ratios		
Income Source	**Income Share**	**P_0**	**P_1**	**P_2**
Informal self-employment	0.03	1.40	1.39	1.36
Informal regular wage emp.	0.02	1.56	1.57	1.53
Casual employment	0.01	2.10	2.30	2.35
Domestic work	0.01	1.97	2.48	2.43
Formal sector employment	0.63	0.86	0.61	0.53
Social grant income	0.07	1.64	3.19	3.64
Investment income	0.06	0.48	0.41	0.40
Remittance income	0.02	1.38	1.71	1.78
Imputed rental income	0.14	1.11	1.34	1.48

Table 7 again shows that the formal sector employment is, by far, the largest source of employment, providing more than 10 million jobs in 2012[13]. Formal employment is also dominant with respect to the income it provides per job. The income from one million formal (sector) jobs would constitute a 6.1 per cent share of total income, while other types of employment provide no more than 2.0 per cent of aggregate income per million jobs. For the

[13] Appendix D shows the same estimates for the depth and severity of poverty. Similarly, Appendix E shows the full range of relative poverty impacts at all three poverty lines for P_0-P_2.

reasons highlighted previously, namely the relatively low poverty effectiveness of income from formal sector employment, the total poverty reduction per million jobs from formal sector employment is not exceptionally larger than the reduction from the other employment categories shown in the table. For example, the per-job impact on poverty from informal sector self-employment is approximately 63 per cent of that of a formal job if one uses the food poverty line (see column 4). Informal regular wage employment is even higher at 81 per cent. In other words, the decomposition analysis suggests that the loss of 100 informal sector self-employment jobs and the loss of 63 formal jobs have a similar impact in terms of overall poverty reduction.

Across all three poverty lines and p-alpha values, the per-job impact on poverty reduction, relative to formal jobs, ranges from 39 per cent (for casual work when measuring P_0 at the R594 poverty line) to 108 per cent (for both informal regular wage employment and domestic work when measuring P_2 at the R307 food poverty line). In other words, the relative contribution of different types of 'informal' jobs to poverty reduction varies considerably depending on the poverty line and the FGT measure (p-alpha values). More specifically, however, the decompositions show that, at the food poverty line, informal regular wage jobs and domestic work actually have a larger relative impact on the severity of poverty (P_2) per job than formal types of employment (as shown in Table E-3 in Appendix E). In terms of the impact of informal sector self-employment, the relative per-job impact on poverty reduction ranges from 48 per cent (P_0 at the R594 line) to 88 per cent (P_2 at R307 line). The key conclusion here, therefore, is that the importance of informal sector self-employment to poverty reduction is greater at the lowest poverty line and particularly for workers who live in households further below the poverty threshold. This particular finding is critically important for policymakers since it demonstrates that, for the poorest households, the impact of earnings from informal sector self-employment are almost as important as earnings from formal jobs, even though earnings are considerably lower in the informal sector. This again points to the conclusion that informal sector jobs are 'well targeted' to poor households and particularly to households relatively far below the poverty line.

Table 7 Relative impact of jobs on poverty headcount (P_0) by income source, 2012

			Z = 307		Z = 424		Z = 594	
Income Source	**Number of jobs**	**Share of income per million jobs**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**
Informal self-employment	1,462,314	0.018	-0.021	**0.63**	-0.018	**0.56**	-0.015	**0.48**
Informal regular wage emp.	1,185,124	0.020	-0.027	**0.81**	-0.023	**0.71**	-0.019	**0.60**
Casual employment	1,358,512	0.009	-0.018	**0.54**	-0.015	**0.45**	-0.012	**0.38**
Domestic work	923,511	0.013	-0.028	**0.85**	-0.024	**0.74**	-0.015	**0.48**
Formal sector employment	10,400,000	0.061	-0.033	**1**	-0.033	**1**	-0.031	**1**

5. Additional approaches

5.1 Change in poverty over time

Next we examine the changes in poverty over time during the 2008 to 2012 period using a panel of respondents in both the 2008 and 2012 survey and weights that adjust for attrition over time.[14] Table 8 shows the considerable decline in poverty over the 2008 to 2012 period is visible under all measures of poverty regardless of the poverty line.

Table 8 Change in poverty estimates (P_α) for South Africa, 2008-2012

	Z = 307	Z = 424	Z = 594
P_0	-0.077	-0.092	-0.104
	(0.004)	(0.004)	(0.004)
P_1	-0.038	-0.049	-0.064
	(0.002)	(0.003)	(0.003)
P_2	-0.024	-0.034	-0.045
	(0.002)	(0.002)	(0.002)

Growth in earnings from formal employment accounted for nearly all the change in income over the 2008 to 2012 period (See Table 9). Some income categories, such as informal self-employment, saw little change in aggregate income while the change in other categories counterbalanced each other, with some categories gaining income (informal regular wage employment and social grant income) and others suffering significant losses (remittances).

Formal sector employment accounts for the majority (60 per cent) of the reduction in the poverty headcount ratio in the 2008 to 2012 period. Social grants, again, play a vital role at 18 per cent. Despite a large decline in remittances, this had little to no impact on poverty rates. Informal wage employment seems to play a larger role on poverty reduction (8.0 per cent) than in the cross-sectional results while informal self-employment income has a similar relative effect on poverty reduction, accounting for 3.2 per cent of the change in poverty.

[14] One important caveat is that the aggregate poverty changes shown in Table 8 are much larger than those reported in the broader literature. Since NIDS is the only nationally representative panel survey in South Africa, the poverty results presented here are not easily comparable with repeated cross-sectional surveys. Nonetheless, caution should be exercised when interpreting the decompositions over time since the decreases in poverty are not in line with aggregate estimates from other studies. The results presented in Tables 9 and 10 are therefore only broadly illustrative of how informal sources of income contributed to poverty reduction in the NIDS sample.

Table 9 Decomposition of change in poverty (Z = 594) by income source.

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.002	0.032	-0.003	0.035	-0.002	0.031	-0.001
	(0.042)	(0.011)	(0.001)	(0.012)	(0.001)	(0.013)	(0.001)
Informal regular wage emp.	0.064	0.080	-0.008	0.064	-0.004	0.058	-0.003
	(0.03)	(0.011)	(0.001)	(0.012)	(0.001)	(0.014)	(0.001)
Casual employment	-0.016	0.030	-0.003	0.031	-0.002	0.032	-0.001
	(0.011)	(0.011)	(0.001)	(0.013)	(0.001)	(0.016)	(0.001)
Domestic work	0.022	0.053	-0.005	0.048	-0.003	0.035	-0.002
	(0.011)	(0.008)	(0.001)	(0.009)	(0.001)	(0.01)	(0)
Formal sector employment	0.971	0.596	-0.062	0.558	-0.036	0.542	-0.025
	(0.113)	(0.025)	(0.003)	(0.027)	(0.002)	(0.032)	(0.002)
Social grant income	0.081	0.178	-0.019	0.258	-0.016	0.288	-0.013
	(0.017)	(0.014)	(0.002)	(0.018)	(0.001)	(0.022)	(0.001)
Investment income	0.014	0.005	0.000	0.018	-0.001	0.022	-0.001
	(0.038)	(0.006)	(0.001)	(0.006)	(0)	(0.007)	(0)
Remittance income	-0.171	-0.007	0.001	-0.016	0.001	-0.011	0.000
	(0.108)	(0.012)	(0.001)	(0.013)	(0.001)	(0.015)	(0.001)
Imputed rental income	0.043	0.043	-0.004	0.017	-0.001	0.016	-0.001
	(0.034)	(0.012)	(0.001)	(0.014)	(0.001)	(0.018)	(0.001)
Total	1	1	-0.104	1	-0.064	1	-0.045
	(0)	(0)	(0.004)	(0)	(0.003)	(0)	(0.002)

Table 10 reminds us that the aggregate impact on poverty from one particular income source depends on both the size of the change in income and the resulting per-Rand reduction in poverty. As before, the per-Rand impact of formal sector income on poverty reduction appears to be quite low compared to many other sources of income. Informal self-employment and domestic work stand out for their high per-Rand effects on poverty reduction.

There is some caution in these results, however. The odd sign on the casual employment figures and the extremely large relative ratios for informal self-employment are likely signals that some of these results are driven by the change in the composition of households that are engaged in these activities over time, which this method does not model. For example, informal self-employment accounts for 3.2 per cent of poverty reduction despite only accounting for 0.2 per cent of income growth. It's unlikely that the same households were taking part in informal self-employment in both years and that this small increase in income suddenly moved a large number of them out of poverty. Instead, there was likely a shift in the composition of households that were engaged in informal self-employment, with a higher proportion of households who were just over the poverty line taking part. These small compositional shifts, and even measurement error problems, can have large impacts on our results in Table 10 as these are ratios where we use the *change in* the share of income over time in the denominator rather than the share of income at a point in time. These ratios are particularly susceptible if the ratio is near zero, as is the case with informal self-employment income (.002). Thus, while the results actually amplify the importance of informal

employment relative to formal employment compared to our earlier cross-sectional analysis, they are likely more prone to errors.

Table 10 Ratios for the decomposition of the change in poverty (Z = 594) by income source.

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**
Informal self-employment	0.00	14.70	1.54	15.75	1.00	14.01	0.63
Informal regular wage emp.	0.06	1.25	0.13	0.99	0.06	0.91	0.04
Casual employment	-0.02	-1.86	0.19	-1.96	0.12	-2.00	0.09
Domestic work	0.02	2.37	0.25	2.16	0.14	1.57	0.07
Formal sector employment	0.97	0.61	0.06	0.57	0.04	0.56	0.03
Social grant income	0.08	2.22	0.23	3.20	0.20	3.58	0.16
Investment income	0.01	0.32	0.03	1.29	0.08	1.60	0.07
Remittance income	-0.17	0.04	0.00	0.09	0.01	0.06	0.00
Imputed rental income	0.04	0.99	0.10	0.39	0.03	0.37	0.02

Our dynamic analysis also looked at the change in employment over time for each type of employment (results not shown). Despite the stagnant income, there was a considerable loss of informal self-employment jobs. The decline in informal self-employment jobs appears to be a lost opportunity for increased poverty reduction during this period.

5.2 Simulated increase of one million new informal self-employment jobs

The previous analysis offered one approach to understanding the impact of informal-sector jobs on poverty. The Shapley decomposition demonstrated a way to look at the observed aggregate poverty reduction at a point in time (or change across time) and attribute the influence of each income source to this poverty reduction. From the results of that decomposition, we could calculate the implied per-job impact on poverty reduction of an informal self-employment job or an informal wage-job. We could also use this information to identify the poverty reduction per one million informal-sector jobs.

In this section, we take an entirely different approach. We simulate a situation with additional informal self-employment jobs directly. Then, we see how much the poverty rates decline once the simulated additional earnings are added to household income per capita. Specifically, we simulate the impact that adding one million new, informal, self-employment jobs would have on national poverty rates using the 2012 data. We assume that the new jobs

would be given to randomly selected unemployed individuals (either searching or non-searching) and that no other household income would be affected. Likewise, we take household formation as exogenous. We also assume that the new earnings would come from random draws from the distribution of earnings from current informal self-employment jobs. Given that we start at the current household income level, there may be considerably lower impact on poverty rates than that found in earlier decomposition results. However, income levels in households with unemployed individuals could be lower than that of the current self-employed, resulting in a larger poverty impact.

In Table 11 we report results from this simple simulation by presenting the change in poverty for all the three poverty measures. For example, if one million more of these informal self-employment jobs were added to the economy, we estimate that the poverty rate at the R307 threshold would decrease from 19.2% to 17.5% (or decrease by 8.5%). At the upper-bound poverty line, the relative decrease in the poverty headcount after 'adding' these jobs would be about 6%. Again, this demonstrates that income from self-employment in the informal sector is particularly important for individuals in the poorest households. The fact that relative decreases in the severity of poverty are even greater after simulating one million new jobs, reinforces this point (e.g. the severity of the poverty index would decrease by 12.5% as compared to the 8.5% decline in the poverty headcount at the lowest poverty line under this simulated scenario). Across the various poverty lines and p-alpha measures, the simulation results in a reduction of poverty of between 6.0 and 12.5 per cent, with an average reduction of 9.6 per cent.

Table 11 Simulation: Change in poverty headcount if add 1 million new informal self-employment jobs

	Z = 307			Z = 424			Z = 594		
	2012	**Simulated**	**% change**	**2012**	**Simulated**	**% change**	**2012**	**Simulated**	**% change**
P(0)	0.192	0.175	**-8.5%**	0.294	0.269	**-8.5%**	0.405	0.381	**-6.0%**
P(1)	0.074	0.065	**-11.5%**	0.121	0.109	**-10.0%**	0.187	0.171	**-8.5%**
P(2)	0.041	0.036	**-12.5%**	0.068	0.061	**-11.1%**	0.112	0.101	**-9.8%**

One of the initial findings of this chapter was that formal employment is the dominant factor in explaining aggregate poverty reduction, with informal-sector employment offering relatively little impact on aggregate poverty rates. On the other hand, we found that, in terms of relative poverty-reducing effectiveness, changes in informal-sector income are more potent than formal-sector income – as also illustrated in the per-million-jobs impact analysis earlier. The simulation results here also suggest that a massive surge in informal self-employment jobs would lead to a significant reduction in national poverty figures. Therefore, this should be considered as an element of addressing poverty; however, even with such a massive growth in informal-sector jobs, there would still be vast swathes of poverty remaining. Thus, it cannot be the only strategy in the fight to reduce poverty.

6. Concluding remarks

Formal sector earnings and social grants are, by far, the most important sources of income in explaining the total amount of poverty alleviation in South Africa in 2008 and in 2012. Yet, the reasons are quite distinct. A large amount of formal sector earnings flows into non-poor households but the earnings form such a dominant share of total income in South Africa, 63.5% in 2012, that formal sector earnings accounts for 42.6% of poverty reduction using the food-poverty line. Social grants, on the other hand, are targeted overwhelmingly towards poor households. Thus, while they comprise just 7.1% of total income, they account for 20.9% of overall poverty reduction.

Similarly, earnings from formal sector jobs account for 24.1 times the amount of overall income as informal self-employment jobs but just 11.4 times the amount of aggregate poverty reduction as informal self-employment jobs. Still, this large disparity may make it tempting for policymakers to focus very heavily on improving the number of formal sector jobs in an attempt to ease poverty. We believe that is a faulty interpretation of reality.

The large disparity in aggregate poverty reduction is primarily driven by the fact that there are many more formal sector jobs not by the difference in poverty impact of a given job. When considering poverty impacts on a per-job basis, the relative worth of informal sector jobs is greatly amplified. For example, in 2012, there were 7.1 times as many formal sector jobs as informal self-employment jobs. Thus, on a per-job basis, in 2012, formal sector jobs were providing just 1.60 times the poverty reduction as informal self-employment jobs. Put differently, on average, an informal self-employment job had 63% of the poverty reduction impact of a formal employment job in 2012.

So what is a policy maker to learn from these results? First, do not shut down any informal sector jobs unless there is a dire reason to intervene. If you are considering a policy that would eliminate 100 typical informal self-employed jobs, ask yourself the following, “Would I be willing to lose 63 typical formal sector jobs to implement this policy?” Our decomposition analysis suggests that the poverty effects associated with those two scenarios is the same. Obviously poverty is not the only consideration, but we hope this puts the stark nature of the decision making in perspective.

Second, we believe the potential poverty reduction from growing informal sector jobs has been understated in policy discussions. While we long for the day when all South Africans can enjoy jobs with earnings levels well beyond the poverty line, we should not denigrate work that brings people in very low incomes closer to or just past the poverty line. Government should pride itself on helping these jobs to exist and should search for ways to promote such jobs. The search for cost-effective strategies of promoting such employment

should cover the entire spectrum of options, from street lighting or other infrastructure changes that can be provided, to improved regulatory environments for the informal sector, to provision of social protection, to helping informal sector firms bargain with formal firms, to effective training of such workers. A period of exploratory approaches, ideally accompanied by proper evaluations of effectiveness, could greatly improve the number and quality of informal sector jobs.

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Appendix A:

The poverty measures used in this decomposition are the p-alpha measures:

$$\hat{P}\left(z;\alpha;y=\sum_{k=1}^{K}S_k\right)=\frac{\sum_{i=1}^{n}W_i\left(1-{}^{y}/_{z}\right)^{\alpha}}{\sum_{i=1}^{n}W_i}$$

where y is income, z is the poverty line, there are K income sources and S_k represents income from source k. W_i is the weight given to individual i and n is the sample size.

The Shapley decomposition approach calculates the average marginal reduction in poverty when adding an income source over all possible combinations of income sources and all possible orderings. The method starts at zero income ($P_\alpha = 1$) and adds in one income source at a time, assessing the marginal poverty reduction at each step, until all income sources are included. The approach repeats this procedure over all possible orderings for our 11 different income sources. Conveniently, the Araar and Duclos coding reweights outcomes so that we can reduce this to 2^k orderings and poverty calculations, rather than completing the procedure using k! orderings (Araar & Duclos, 2009a, 2009b; Duclos & Araar, 2006).

Appendix B:

Table B-1 Decomposition of the poverty gap (P_1) by income source

		Z = 307		Z = 424		Z = 594	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.031	-0.034	-0.030	-0.034	-0.028	-0.034	-0.025
	(0.005)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Informal regular wage emp.	0.024	-0.041	-0.036	-0.042	-0.034	-0.042	-0.031
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Casual employment	0.022	-0.039	-0.034	-0.039	-0.032	-0.038	-0.028
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Domestic work	0.010	-0.026	-0.023	-0.026	-0.021	-0.025	-0.019
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Formal sector employment	0.567	-0.278	-0.244	-0.306	-0.250	-0.340	-0.250
	(0.012)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
Agricultural income	0.001	-0.004	-0.003	-0.003	-0.003	-0.003	-0.002
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Other income	0.005	-0.006	-0.005	-0.006	-0.005	-0.006	-0.004
	(0.001)	(0)	(0)	(0)	(0)	(0)	(0)
Social grant income	0.066	-0.264	-0.232	-0.245	-0.200	-0.219	-0.161
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Investment income	0.070	-0.025	-0.022	-0.026	-0.021	-0.028	-0.021
	(0.007)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Remittance income	0.048	-0.056	-0.049	-0.056	-0.046	-0.055	-0.040
	(0.008)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Imputed rental income	0.156	-0.228	-0.200	-0.217	-0.178	-0.209	-0.154
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Total	1	1	-0.878	1	-0.817	1	-0.736
	(0)	(0)	(0.002)	(0)	(0.002)	(0)	(0.003)

Source: Own calculations from NIDS using the DASP module developed by Araar and Duclos (2007)

Notes: The data are weighted.

Standard errors in brackets.

Income sources are expressed in monthly per capita terms (2010 prices).

Table B-2 Ratios for the decomposition of the poverty gap (P_1) by income source

		Z = 307		Z = 424		Z = 594	
Income Source	**Income Share**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**
Informal self-employment	0.03	1.09	0.95	1.09	0.89	1.10	0.81
Informal regular wage emp.	0.02	1.74	1.53	1.77	1.45	1.79	1.32
Casual employment	0.02	1.76	1.54	1.75	1.43	1.72	1.26
Domestic work	0.01	2.63	2.31	2.61	2.13	2.52	1.85
Formal sector employment	0.57	0.49	0.43	0.54	0.44	0.60	0.44
Agricultural income	0.00	3.88	3.41	3.43	2.80	3.18	2.34
Other income	0.00	1.37	1.20	1.32	1.08	1.24	0.92
Social grant income	0.07	3.99	3.50	3.70	3.02	3.31	2.44
Investment income	0.07	0.35	0.31	0.37	0.30	0.40	0.30
Remittance income	0.05	1.17	1.03	1.17	0.95	1.15	0.85
Imputed rental income	0.16	1.46	1.28	1.39	1.14	1.34	0.99

Table B-3 Decomposition of the squared poverty gap (P_2) by income source

		Z = 307		Z = 424		Z = 594	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.031	-0.033	-0.031	-0.034	-0.030	-0.034	-0.028
	(0.005)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Informal regular wage emp.	0.024	-0.039	-0.036	-0.040	-0.036	-0.041	-0.034
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Casual employment	0.022	-0.038	-0.036	-0.039	-0.034	-0.038	-0.032
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Domestic work	0.010	-0.025	-0.023	-0.026	-0.023	-0.026	-0.021
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Formal sector employment	0.567	-0.248	-0.230	-0.268	-0.238	-0.294	-0.244
	(0.012)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Agricultural income	0.001	-0.004	-0.004	-0.004	-0.004	-0.004	-0.003
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Other income	0.005	-0.006	-0.006	-0.006	-0.005	-0.006	-0.005
	(0.001)	(0)	(0)	(0)	(0)	(0)	(0)
Social grant income	0.066	-0.273	-0.253	-0.265	-0.235	-0.249	-0.207
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Investment income	0.070	-0.024	-0.022	-0.025	-0.022	-0.026	-0.021
	(0.007)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Remittance income	0.048	-0.055	-0.051	-0.055	-0.049	-0.055	-0.046
	(0.008)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Imputed rental income	0.156	-0.254	-0.236	-0.240	-0.213	-0.227	-0.189
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Total	1	1	-0.927	1	-0.888	1	-0.832
	(0)	(0)	(0.002)	(0)	(0.002)	(0)	(0.002)

Source: Own calculations from NIDS using the DASP module developed by Araar and Duclos (2007)

Notes: The data are weighted.

Standard errors in brackets.

Income sources are expressed in monthly per capita terms (2010 prices).

Table B-4 Ratios for the decomposition of the squared poverty gap (P_2) by income source

		Z = 307		Z = 424		Z = 594	
Income Source	**Income Share**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**
Informal self-employment	0.03	1.06	0.99	1.08	0.96	1.09	0.90
Informal regular wage emp.	0.02	1.66	1.54	1.70	1.51	1.74	1.45
Casual employment	0.02	1.73	1.61	1.74	1.55	1.74	1.45
Domestic work	0.01	2.53	2.34	2.57	2.28	2.57	2.13
Formal sector employment	0.57	0.44	0.41	0.47	0.42	0.52	0.43
Agricultural income	0.00	4.45	4.13	4.08	3.62	3.71	3.08
Other income	0.00	1.36	1.27	1.36	1.21	1.32	1.10
Social grant income	0.07	4.13	3.83	4.00	3.55	3.77	3.13
Investment income	0.07	0.34	0.32	0.35	0.31	0.37	0.31
Remittance income	0.05	1.14	1.06	1.16	1.03	1.16	0.96
Imputed rental income	0.16	1.63	1.51	1.53	1.36	1.45	1.21

Appendix C:

Table C-1 Decomposition of poverty (Z = 307) by income source

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.026	-0.038	-0.030	-0.036	-0.033	-0.035	-0.033
	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Informal regular wage emp.	0.024	-0.039	-0.032	-0.036	-0.034	-0.035	-0.033
	(0.004)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Casual employment	0.013	-0.030	-0.024	-0.030	-0.028	-0.030	-0.029
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Domestic work	0.012	-0.032	-0.026	-0.028	-0.026	-0.027	-0.026
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Formal sector employment	0.635	-0.426	-0.344	-0.320	-0.297	-0.286	-0.274
	(0.013)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)
Agricultural income	0.001	-0.003	-0.003	-0.004	-0.003	-0.004	-0.004
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Other income	0.002	-0.003	-0.002	-0.002	-0.002	-0.002	-0.002
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Social grant income	0.071	-0.209	-0.169	-0.275	-0.255	-0.286	-0.274
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Investment income	0.057	-0.023	-0.019	-0.022	-0.021	-0.022	-0.021
	(0.007)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Remittance income	0.024	-0.042	-0.034	-0.044	-0.041	-0.044	-0.043
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Imputed rental income	0.135	-0.155	-0.125	-0.202	-0.187	-0.228	-0.219
	(0.005)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Total	1	1	-0.808	1	-0.926	1	-0.959
	(0)	(0)	(0.003)	(0)	(0.002)	(0)	(0.001)

Source: Own calculations from NIDS using the DASP module developed by Araar and Duclos (2007)

Notes: The data are weighted.

Standard errors in brackets.
Income sources are expressed in monthly per capita terms (2008 prices).

Table C-2 Ratios for the decomposition of poverty (Z = 307) by income source

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**
Informal self-employment	0.03	1.42	1.15	1.35	1.25	1.32	1.27
Informal regular wage emp.	0.02	1.65	1.33	1.52	1.41	1.45	1.39
Casual employment	0.01	2.36	1.90	2.36	2.19	2.41	2.31
Domestic work	0.01	2.76	2.23	2.42	2.24	2.30	2.20
Formal sector employment	0.63	0.67	0.54	0.50	0.47	0.45	0.43
Agricultural income	0.00	2.68	2.17	3.06	2.83	3.58	3.43
Other income	0.00	1.29	1.04	1.13	1.05	1.15	1.10
Social grant income	0.07	2.95	2.38	3.88	3.59	4.03	3.86
Investment income	0.06	0.40	0.33	0.39	0.36	0.39	0.37
Remittance income	0.02	1.72	1.39	1.82	1.68	1.82	1.75
Imputed rental income	0.14	1.15	0.93	1.49	1.38	1.69	1.62

Table C-3 Decomposition of poverty (Z = 424) by income source

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative**	**Absolute**	**Relative**	**Absolute**	**Relative**	**Absolute**
Informal self-employment	0.026	-0.038	-0.027	-0.036	-0.032	-0.035	-0.033
	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Informal regular wage emp.	0.024	-0.039	-0.028	-0.037	-0.033	-0.036	-0.033
	(0.004)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Casual employment	0.013	-0.028	-0.020	-0.030	-0.026	-0.030	-0.028
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Domestic work	0.012	-0.032	-0.022	-0.029	-0.026	-0.028	-0.026
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Formal sector employment	0.635	-0.483	-0.341	-0.353	-0.310	-0.310	-0.289
	(0.013)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Agricultural income	0.001	-0.002	-0.002	-0.003	-0.003	-0.004	-0.004
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Other income	0.002	-0.003	-0.002	-0.002	-0.002	-0.002	-0.002
	(0)	(0.001)	(0)	(0)	(0)	(0)	(0)
Social grant income	0.071	-0.160	-0.113	-0.253	-0.222	-0.276	-0.257
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)
Investment income	0.057	-0.025	-0.017	-0.023	-0.020	-0.022	-0.021
	(0.007)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Remittance income	0.024	-0.038	-0.027	-0.043	-0.038	-0.044	-0.041
	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Imputed rental income	0.135	-0.151	-0.106	-0.190	-0.167	-0.213	-0.199
	(0.005)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Total	1	1	-0.706	1	-0.879	1	-0.932
	(0)	(0)	(0.004)	(0)	(0.002)	(0)	(0.002)

Source: Own calculations from NIDS using the DASP module developed by Araar and Duclos (2007)

Notes: The data are weighted.

Standard errors in brackets.

Income sources are expressed in monthly per capita terms (2008 prices).

Table C-4 Ratios for the decomposition of poverty (Z = 424) by income source

		P_0		P_1		P_2	
Income Source	**Income Share**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**	**Relative Ratio**	**Absolute Ratio**
Informal self-employment	0.03	1.44	1.02	1.37	1.21	1.34	1.25
Informal regular wage emp.	0.02	1.64	1.15	1.56	1.37	1.49	1.39
Casual employment	0.01	2.25	1.59	2.34	2.06	2.38	2.22
Domestic work	0.01	2.72	1.92	2.49	2.19	2.37	2.21
Formal sector employment	0.63	0.76	0.54	0.56	0.49	0.49	0.45
Agricultural income	0.00	2.08	1.46	2.87	2.52	3.29	3.07
Other income	0.00	1.72	1.21	1.20	1.06	1.16	1.08
Social grant income	0.07	2.25	1.59	3.57	3.13	3.88	3.62
Investment income	0.06	0.43	0.30	0.40	0.35	0.39	0.36
Remittance income	0.02	1.57	1.11	1.78	1.56	1.81	1.69
Imputed rental income	0.14	1.12	0.79	1.41	1.24	1.58	1.47

Appendix D:

Table D-1 Jobs Stuff of the poverty headcount (P_1) by formal income source								
			Z = 307		Z = 424		Z = 594	
Income Source	**Number of jobs**	**Share of income per million jobs**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**
Informal self-employment	1,462,314	0.018	-0.023	**0.79**	-0.022	**0.73**	-0.020	**0.67**
Informal regular wage emp.	1,185,124	0.020	-0.028	**1.00**	-0.028	**0.93**	-0.026	**0.84**
Casual employment	1,358,512	0.009	-0.020	**0.71**	-0.019	**0.64**	-0.017	**0.57**
Domestic work	923,511	0.013	-0.028	**0.99**	-0.028	**0.93**	-0.026	**0.84**
Formal sector employment	10,400,000	0.061	-0.029	**1.00**	-0.030	**1.00**	-0.030	**1.00**
Agricultural income	298,937	0.004	-0.011	**0.39**	-0.010	**0.33**	-0.009	**0.28**

Table D-2 Jobs Stuff of the poverty headcount (P_2) by formal income source								
			Z = 307		Z = 424		Z = 594	
Income Source	**Number of jobs**	**Share of income per million jobs**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**
Informal self-employment	1,462,314	0.018	-0.023	**0.87**	-0.023	**0.81**	-0.022	**0.75**
Informal regular wage emp.	1,185,124	0.020	-0.028	**1.07**	-0.028	**1.01**	-0.027	**0.94**
Casual employment	1,358,512	0.009	-0.021	**0.81**	-0.021	**0.74**	-0.019	**0.67**
Domestic work	923,511	0.013	-0.028	**1.06**	-0.028	**1.01**	-0.027	**0.95**
Formal sector employment	10,400,000	0.061	-0.026	**1.00**	-0.028	**1.00**	-0.029	**1.00**
Agricultural income	298,937	0.004	-0.014	**0.51**	-0.012	**0.44**	-0.011	**0.37**

Appendix E:

Table E-1 Jobs Stuff of the poverty headcount (P_0) by formal income source								
			Z = 307		Z = 424		Z = 594	
Income Source	**Number of jobs**	**Share of income per million jobs**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**
Informal self-employment	1,504,590	0.021	-0.017	**0.49**	-0.014	**0.42**	-0.011	**0.37**
Informal regular wage emp.	1,201,757	0.020	-0.026	**0.75**	-0.022	**0.66**	-0.017	**0.55**
Casual employment	1,474,585	0.015	-0.019	**0.54**	-0.015	**0.46**	-0.011	**0.35**
Domestic work	769,514	0.013	-0.024	**0.70**	-0.019	**0.56**	-0.013	**0.43**
Formal sector employment	7,788,926	0.073	-0.034	**1**	-0.033	**1**	-0.031	**1**
Agricultural income	1,261,647	0.001	-0.001	**0.03**	-0.001	**0.03**	-0.001	**0.03**

Table E-2 Jobs Stuff of the poverty headcount (P_1) by formal income source								
			Z = 307		Z = 424		Z = 594	
Income Source	**Number of jobs**	**Share of income per million jobs**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**
Informal self-employment	1,504,590	0.021	-0.020	**0.63**	-0.019	**0.58**	-0.017	**0.52**
Informal regular wage emp.	1,201,757	0.020	-0.030	**0.96**	-0.028	**0.88**	-0.026	**0.81**
Casual employment	1,474,585	0.015	-0.023	**0.74**	-0.021	**0.67**	-0.019	**0.59**
Domestic work	769,514	0.013	-0.030	**0.96**	-0.028	**0.86**	-0.024	**0.75**
Formal sector employment	7,788,926	0.073	-0.031	**1.00**	-0.032	**1.00**	-0.032	**1.00**
Agricultural income	1,261,647	0.001	-0.003	**0.08**	-0.002	**0.07**	-0.002	**0.06**

Table E-3 Jobs Stuff of the poverty headcount (P_2) by formal income source								
			Z = 307		Z = 424		Z = 594	
Income Source	**Number of jobs**	**Share of income per million jobs**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**	**Change in poverty per million jobs**	**Change in poverty relative to formal job**
Informal self-employment	1,504,590	0.021	-0.020	**0.69**	-0.020	**0.65**	-0.019	**0.60**
Informal regular wage emp.	1,201,757	0.020	-0.030	**1.02**	-0.030	**0.97**	-0.028	**0.90**
Casual employment	1,474,585	0.015	-0.024	**0.82**	-0.023	**0.76**	-0.022	**0.69**
Domestic work	769,514	0.013	-0.030	**1.03**	-0.030	**0.97**	-0.028	**0.88**
Formal sector employment	7,788,926	0.073	-0.029	**1.00**	-0.031	**1.00**	-0.031	**1.00**
Agricultural income	1,261,647	0.001	-0.003	**0.11**	-0.003	**0.09**	-0.002	**0.08**

The **Research Project on Employment, Income Distribution and Inclusive Growth (REDI3x3)** is a multi-year collaborative national research initiative. The project seeks to address South Africa's unemployment, inequality and poverty challenges.

It is aimed at deepening understanding of the dynamics of employment, incomes and economic growth trends, in particular by focusing on the interconnections between these three areas.

The project is designed to promote dialogue across disciplines and paradigms and to forge a stronger engagement between research and policy making. By generating an independent, rich and nuanced knowledge base and expert network, it intends to contribute to integrated and consistent policies and development strategies that will address these three critical problem areas effectively.

Collaboration with researchers at universities and research entities and fostering engagement between researchers and policymakers are key objectives of the initiative.

The project is based at SALDRU at the University of Cape Town and supported by the National Treasury.

Consult the website for further information.

Tel: (021) 650-5715

REDI3X3

Research Project on Employment, Income Distribution & Inclusive Growth

Towards an integrated response to unemployment, inequality and poverty