



UNIVERSITY OF CAPE TOWN

CENTRE FOR
SOCIAL SCIENCE RESEARCH

**The quality of South African wage data:
accounting for deductions, debt and
disclosure**

Jeremy Seekings

CSSR Working Paper No. 397

December 2016



Published by the Centre for Social Science Research
University of Cape Town
2016

<http://www.cssr.uct.ac.za>

This Working Paper can be downloaded from:

<http://cssr.uct.ac.za/pub/wp/397/>

ISBN: 978-1-77011-384-8

© Centre for Social Science Research, UCT, 2016

About the author:

Jeremy Seekings is Professor of Political Studies and Sociology, and Director of the CSSR. Email: jeremy.seekings@uct.ac.za.

Acknowledgements:

I am grateful for comments from the audience when I presented an early version of this, as part of a longer paper on the post-apartheid labour market, in UCT's School of Economics.

The quality of South African wage data: accounting for deductions, debt and disclosure

Abstract

Whilst close attention has been paid to many methodological challenges to the estimation of (un)employment and poverty rates in South Africa, the challenge of under-reported earnings data has been neglected. Comparison of data on earnings from household surveys with data from firm surveys, national accounts and some other sources suggests that earnings are under-reported in household surveys. The most likely explanation is that deductions (not only tax and contributions to pension funds and medical aid schemes, but also debit and garnishee orders linked to personal debt) result in an under-reporting of both gross and net earnings. Insofar as deductions are the likely explanation, earnings (and trends in earnings) are most likely to be flawed for workers in the upper part of the income distribution. Mean wages are more likely to be affected, and by much more, than median wages. This has consequences for analyses of changing real incomes and the efficacy of the institutional regulation of wages. An additional likely explanation is a deepening culture of under-stating earnings, as earners do not fully disclose their pay in order to contain the demands made on them by household members, kin, neighbours and others. The distributional effects of this understatement of earnings are unknown.

Introduction

Analyses of changing distributional patterns in post-apartheid South Africa have been bedevilled by concerns over the quality of the available data and the methodologies for addressing these concerns. This has been debated in some detail with respect to data on income poverty trends. Scholars have paid attention to a series of problems: the imputation of missing data, outlier data, bracketing, and problems with sampling and weights (Ardington *et al.*, 2005; Leibbrandt *et al.*, 2006; Wittenberg and Pirouz, 2013; Wittenberg, 2014) in the household income and expenditure and labour market surveys conducted by the parastatal Statistics South Africa ('StatsSA'). In response to the apparent worsening overall of under-

reporting of household income in such surveys, Van der Berg *et al.* (2006, 2008) controversially proposed a new methodology for estimating trends in income poverty, forgoing StatsSA data in favour of data collected by the South African Advertising Research Foundation (SAARF).¹ Van der Berg *et al.* concluded that income poverty had declined, in contrast to the findings of previous studies (including Meth and Dias, 2004; Hoogeveen and Özler, 2006; Leibbrandt *et al.*, 2006). While Van der Berg's methodology attracted detailed criticism (Meth, 2006), there is now a consensus that income poverty did decline in the 2000s (Leibbrandt *et al.*, 2010; Bhorat and van der Westhuizen, 2012; Finn and Leibbrandt, 2013; Seekings, 2011, 2015a).

If household income data have been substantially under-reported, this must be because labour market earnings have been under-reported, given the overwhelming predominance of earnings in total household income. This has obvious implications for analyses of how different groups of earners have fared since the end of apartheid. Many scholars have argued or asserted that 'workers' or the 'working class' have suffered since the end of apartheid, usually attributing this to the government's 'neoliberalism' (see, for example, Webster, Lambert and Bezuidenhout, 2008; Pons-Vignon and Anseeuw, 2009; Barchiesi, 2011; Marais, 2011; Di Paola and Pons-Vignon, 2013; Habib, 2013). A series of economists reported declining earnings and incomes after 1996 (Casale, 2004; Banerjee *et al.*, 2006; Leibbrandt, Levinsohn and McCrary, 2005; and, based on these, Altman, 2006; Marais, 2011). Elsewhere I have argued that 'this general interpretation is woven out of a mix of facts with inaccuracies and half-truths'. Whilst 'it is clearly the case that the upper classes – including managers and professionals – prospered disproportionately in post-apartheid South Africa, ... not all "workers" were "losers"' (Seekings, 2015b). Many quantitative analyses relied on inflated 1995 wage data (see Wittenberg, 2014) which disguised the generally upward trend in real wages. Qualitative studies, meanwhile, tended to focus on specific groups of workers who either suffered setbacks (through, for example, informalisation) or were disappointed by their failure to join in the rising affluence – and conspicuous consumption – of the rich. These studies thus neglected groups of workers who have prospered post-apartheid.

Progress in establishing changing distributional patterns requires that close analysis be applied to the quality of data on wages as well as data on overall household incomes. This paper reviews what we know about the quality of wage data, building on the work of Wittenberg (2014) and colleagues at the DataFirst

¹ Since renamed the South African Audience Research Foundation.

Resource Centre at the University of Cape Town, who integrated household-survey data into a more consistent series, the Post-Apartheid Labour Market Series (PALMS).

Data quality

South Africa has abundant data on employment and earnings since the end of apartheid, from both household and firm surveys, mostly collected by the parastatal Statistics South Africa (StatsSA) but supplemented with surveys conducted by universities and private companies. StatsSA releases most of its household survey data but not its firm survey data into the public domain, and most university-based survey data are also available for public scrutiny. The different sources of data tell somewhat or vastly different stories. StatsSA's firm surveys (the Survey of Employment and Earnings then the Quarterly Employment Statistics surveys) consistently recorded lower employment levels and much higher wages than StatsSA's household surveys (including its October Household Surveys to 1999, its Labour Force Survey or LFS from 2000 to 2007, and its Quarterly LFSs since 2008).

In the first rush of enthusiasm to use newly-available quantitative data after 1994, many scholars failed to consider thoroughly the differences in the samples and questionnaires used in different surveys, and too often mistook the effects of changing methodologies for real changes in post-apartheid society. In the 2000s, and especially in the 2010s, more attention has been paid to the importance of changing survey methodology, and we can be more confident of identifying and measuring real changes. The primary focus of methodological reflection was on employment data, prompted by the widespread assertions by political leaders that unemployment was not as high (or rising as fast) as household surveys suggested, because informal employment was being under-reported (see Seekings, 2006). In response, both questionnaire design and sampling improved, resulting in better coverage of a range of forms of work. Ironically, methodological improvements made it more difficult to construct a time series from consecutive household surveys until – although many of the problems have now been addressed through PALMS provided more consistent data.

The result is improved clarity and certainty about employment trends. It became evident that economic growth after 1994 was not entirely ‘jobless’.² Household surveys clearly showed that, between 1994 and 2008, there was weak employment growth, mostly in low-paying semi-formal ‘jobs’ and informal work (Casale, Muller and Posel, 2004; Borat and Oosthuizen, 2006). The global economic downturn in 2009 resulted in a sharp reduction in employment and corresponding increase in the unemployment rate, with employment returning to its pre-recession level only in 2012 (according to household survey data) (Wittenberg, 2014: 23) or 2013 (using firm survey data) (SARB, 2014: 14-21). Notwithstanding their improved quality, data on employment continued to exhibit weaknesses. Household surveys under-reported employment in mining (Wittenberg, 2014: 44) and commercial agriculture. The strenuous efforts to identify part-time work meant that the extent of underemployment was hidden in the employment data. An implausible drop in the expanded definition of unemployment between 2007 and 2008 appears to be the result of methodological rather than real changes. There remains little certainty over how to reconcile firm and household survey data. In 2012 the labour broker and consultancy Adcorp repeatedly claimed that employment statistics massively underestimated employment in the ‘unofficial’ sector (although Wittenberg and Kerr (2012) wrote a devastating rebuttal).

Less attention has been paid to the quality of wage data than to the quality of employment data, largely because the wage data had less immediate political importance. By correcting for changes in sampling (and especially changes in the coverage of poorer households and lower-earning work), PALMS provided wage data that were more consistent over time. PALMS data exposed the fallacy of the ‘collapse’ in earnings between the mid-1990s and early 2000s as ‘almost definitely an artefact of changing survey practice’, especially with respect to improvements in both sampling among the poor and the enumeration of informal sector activity (Wittenberg, 2014: 60; also Kerr and Wittenberg, 2013; Wittenberg and Pirouz, 2013).

Wage data – including the wage data in PALMS – suffer from continuing quality problems. Data from firm surveys suggest that earnings were much higher, and rose faster after 2000, than was suggested by the household-survey data used in PALMS. Wittenberg (2014) considers some of the inconsistencies between firm

² It needs to be noted that the critique of growth as jobless did not necessarily imply that *no* jobs were created. Rather, it suggested that the employment elasticity of growth was low (but not necessarily zero), i.e. growth resulted in few jobs. It was the case that South Africa continued to exhibit a low employment elasticity of growth, relative to other countries at the same time (Nattrass and Seekings, 2015).

and household surveys. Some reasons for the discrepant data are clear: the household surveys covered a much wider range of work than the firm surveys, probably under-sampled high-earners, and classified employers and employees slightly differently. Even taking these factors into account, it is likely that household surveys under-recorded earnings, and did so by a rising margin in the 2000s.

The gap between countrywide income from the national accounts and the national income calculated from household surveys grew over time. Starting with Van der Berg and his colleagues, estimates of poverty trends tried to adjust household-survey data for under-reported income. The most thorough study is by Yu (2013), which compared total income as reported in household surveys with the national accounts data, reported income from grants with data on payments from the Treasury, and reported income tax paid with data provided by the tax agency SARS. Yu found that total income was under-reported to different extents between different surveys, but under-reporting tended to worsen over time. Grants, however, were fairly well-reported. Income tax was increasingly under-reported, whereas income tax payments reported in the 1995 IES (which seems to have inflated earnings generally) did match SARS data on tax receipts. The reported income tax paid in the 2000 IES amounted to only 40 percent of SARS receipts, but the ratio improved to just under 60 percent in the 2005/06 IES. The pension and tax data suggest that underreporting was worse among higher earners than among poor pensioners and other grant recipients, and that this became truer over time. Insofar as this was the case, underreporting resulted in the underestimation of inequality more than of poverty.

Given that almost all household income came from salaries and wages, under-reported income must have been due to either under-reported employment or under-reported salaries and wages. It seems very unlikely that employment has been greatly underestimated. In light of this, we can assume that the reason for under-reported income must be understated earnings.

The extent to which earnings are under-reported in household surveys is highlighted by the comparison of the earnings reported by employees with the expenditure on salaries and wages reported by employers. Referring to the mining sector, Wittenberg reports that average earnings as reported by firms are 40% higher than as reported in household surveys, and suggests that ‘the firm figures for the mining sector are likely to be as accurate as they can be’ (2014: 45-6). A comparison by Van der Berg of the earnings reported by public sector teachers in household surveys with government payroll data suggests that the former

accounted for only 70% of the latter.³ This implies that the household survey data on teachers' earnings should be inflated by more than 40% - in line with the mining sector. Preliminary research on domestic work (being conducted by Kevin Elliott and myself) suggests that domestic workers report earnings substantially lower than the expenditures reported by their employers. Scholars using household-survey wage data rarely, however, adjust these data for under-reporting in ways comparable with the adjustments made for poverty estimates.

Wittenberg calculates that *even* if the PALMS wage data was adjusted upward by 40% – which is the approximate adjustment implied by the sectoral data – this would still not entirely suffice to eliminate the unexplained discrepancy between household- and firm-survey data (Wittenberg, 2014: 47). This may be because the discrepancy is due to *both* the under-reporting of earnings in the household surveys *and* the exclusion of low-earning employment from the firm survey sample.

Explaining under-reporting

Whilst there is no systematic research into the under-reporting of earnings, there is some evidence as to why this might be widespread – and why lack of income disclosure might have worsened over time and why it affects the earnings distribution. Four reasons probably overlap with one another: problems of data collection from non-earners, problems of data collection on earners with more than one source of earnings, under-estimation of deductions and hence of gross earnings and an increasingly widespread culture of incomplete disclosure of earnings.

First, in most of the household surveys incorporated into PALMS, one respondent in each household was asked about the work done – as well as pay and benefits earned – by every person in the household of working age.⁴ For most of this period, approximately one half of the employment and earnings data was collected from the workers themselves, whilst the other half was collected indirectly from another household member.⁵ Research using data from a 2000 survey suggested that survey respondents underestimate the earnings of other members of their households (and hence total household income) (Skordis and Welsh, 2004). Non-

³ Personal communication. We are grateful to Servaas van der Berg for sharing this with us.

⁴ If the respondent was unable or unwilling to give a precise figure, he or she was asked to place the pay in one of a set of income categories. Respondents could answer in terms of pay per week, month or year.

⁵ The unweighted proportion collected directly rose to above 60% from 2008.

earners are more likely to know about the earners' net earnings, i.e. the money they have to spend after deductions, than their gross earnings. Proxy information is thus likely to under-report gross earnings if there are deductions for medical aid, pensions, debit or garnishee orders, or if workers earn bonuses or allowances in addition to the basic wage. Earners may even deceive other members of their households with regard to their true earnings (see below).

Respondents tend to under-report their own total earnings in cases where they have more than one job, because some of the household surveys asked only about an individual's 'main job' and did not collect data on other jobs (Wittenberg, 2014: 44).⁶

Much more importantly, respondents might under-report their own earnings if their take-home pay is lowered as a result of deductions other than tax. With the exception of 1994 and 1995, StatsSA's household surveys asked about *gross* wages. The LFS for September 2005, for example, asked 'What is the person's total salary/pay at his/her main job, including overtime, allowances and bonus, *before* any tax or deductions' (emphasis added). Accurate responses require knowledge of the person's payslip, or at least of deductions made to their pay. This knowledge may not be widespread even among workers, and is very unlikely to be common among proxy respondents. The QLFS (for 2013 quarter 3) similarly asked about 'wages or salary *before* taxes or any other deductions'.⁷ NIDS also asked about gross earnings in the person's 'main job before any deductions for tax, medical aid or pension' (although NIDS followed this with a question about 'take-home pay', as we shall see below).

There are at least three forms of deductions that respondents would need to take into account in order to report their gross earnings accurately, assuming that they knew their take-home pay. In each case, there are good reasons to think that deductions and under-reporting have increased over time, with the result that the growth of real earnings for many workers has been underestimated. The most obvious deduction is for *tax*. The proportion of workers from whom tax was deducted 'at source' (by employers) rose in the 2000s as SARS became more efficient (and despite a steady rise in the real income threshold below which individuals do not need to submit tax returns or to pay income tax). Most formal

⁶ Some surveys did ask whether each worker had one or more than one employer, so it would be possible to begin to model the effect of asking only about one job.

⁷ This was the phrasing of the question about whether wages were paid monthly, weekly, daily or by the hour. When respondents were asked for the actual amount earned, the question referred simply to 'before deductions', without any mention of tax.

employees also contributed to the public Unemployment Insurance Fund (UIF). Secondly, the proportion of workers contributing (through employer deductions) to *pension or provident funds and medical aid schemes* has been rising. The effects can be deeply felt. Barchiesi reports that workers in different sectors on the East Rand paid between 11% and 20% of their gross earnings in medical expenses; one worker's payslip showed him taking home only 20% of his gross earnings, largely due to medical aid deductions (2011: 214-5). Thirdly, many workers have *deductions to pay retailers or banks* (often through debit orders straight from their bank accounts), and some have court-sanctioned garnishee orders to pay creditors. Household debt exploded in the 2000s, with the ratio of debt to disposable income rising from less than 60% to more than 80% (SARB, 2008: 9; 2014: 11). In combination, these deductions explain why, according to research commissioned by trade unions as early as 2004, 'eight workers out of ten took home less than 40 percent of their wages' (Barchiesi, 2011: 210). In addition to this, some workers have substantial earnings on top of their basic wages, such as the 'living out allowance' paid to mineworkers who do not live in company accommodation, as well as annual 'bonuses'.

The platinum workers' strike of early 2014 provided a public example of the vast difference that even routine non-tax deductions can make. The basic wage for entry-level underground workers on mines owned by the company that paid the lowest wages, Amplats, was R5,000 per month. Their trade union (AMCU, the Association of Mineworkers and Construction Union) demanded that the minimum be more than doubled, to R12,500 per month. The basic wage did not take into account, however, a 13th cheque (worth R417 per month), a living out allowance for workers not living in company accommodation (R1,757 per month), medical aid (R700 per month) and pension fund contributions (R750 per month), which raised the total pay by more than 60% to R8,604 per month.⁸ Similarly, in gold-mining, the entry-level basic wage for an underground worker was approximately one half of the actual pay, inclusive of bonuses and allowances.⁹ Workers' take-home pay would be reduced by tax, as well as by any debit or garnishee orders related to workers' debts. Newspaper reports repeatedly suggested that many mineworkers had considerable consumer debt, and many had garnishee orders.

Under-reporting might explain a substantial part of the difference between earnings reported in household and firm surveys. Wittenberg (2014) begins to examine why the QLFSs (i.e. household surveys) report earnings about one-third below the QES

⁸ Data from the employers' website: www.platinumwagenegotiations.co.za/.

⁹ Data from the employers' website: <http://www.goldwagenegotiations.co.za/>.

(i.e. firm surveys). He notes that the 1994 October Household Survey allowed respondents to report their earnings either net or gross of deductions. The respondents who reported gross earnings were asked to report also their deductions, and the fact that they were able to do so suggests (to Wittenberg) that most respondents understood the difference between gross and net earnings. Wittenberg concludes, without giving reasons, that ‘it is somewhat difficult to believe that the bulk of the respondents would get the question’ about gross earnings as ‘badly wrong’ as the firm survey data suggested (2014: 44). He also notes the fact that the proportion of the earnings data collected directly from the earners rose over time, suggesting that any ‘proxy’ effect would have diminished.

Wittenberg does not consider, however, the effects of non-tax deductions, including contributions to pension funds, medical aid, or under garnishee orders). Moreover, as Wittenberg and Pirouz noted, two out of three respondents reporting earnings in 1994 clarified in a subsequent question that they reported take-home pay, net of deductions (Wittenberg and Pirouz, 2013: 3). Such findings point to the possibility that most people intuitively think in terms of net earnings (or take-home pay), not gross earnings (prior to deductions). Insofar as respondents might report take-home pay even when asked about ‘pay before deductions’, this is likely to occur more and more often, with ever greater consequences, as the scale and scope of deductions grew in the two decades after 1994.

Preliminary qualitative research with earners in the Western Cape suggests that many workers do initially report earnings net of deductions. For example, one unskilled worker in formal employment reported earning less than R2000 per month. Probing revealed that he earned almost R6,000/month gross from this job (not counting his annual Christmas ‘bonus’), and additionally had modest earnings from informal and casual work. About R500 was paid into a pension fund and R500 was paid in tax, so that about R5,000 per month was paid into his bank account. He had three debit orders to his own bank (for a fixed-term personal loan and credit card debt) and to African Bank (for a second personal loan). After these debit orders were processed, he was left with less than R2,000 per month.

Evidence from NIDS

NIDS is one household survey that explicitly asked about both *gross earnings* and *take-home pay*. Table 1 reports the mean gross earnings and deductions (as well as the reported prevalence of additional benefits) for each earnings quintile. Most

respondents reported both their gross earnings (‘before any deductions for tax, medical aid or pension’) and their ‘take-home pay’. Overall, 23% of gross earnings were reportedly deducted, i.e. aggregate reported take-home pay was 77% of aggregate reported gross earnings (for those individuals who reported both). Deductions were much larger – in absolute terms, of course, but also as a share of gross earnings – for higher earners. In addition, benefits-related deductions were much more prevalent in higher earning quintiles.

Table 1: Gross and net wages, 2008

Earnings quintile	Mean gross earnings (Rand/month)	Mean deductions (Rand/month)	Deductions as a proportion of gross earnings	Proportion of earners receiving or paying		
				Pension (%)	Medical aid (%)	UIF (%)
1	702	31	0.04	9	4	30
2	1426	121	0.08	20	4	54
3	2622	322	0.12	51	11	73
4	5448	1196	0.23	71	38	82
5	15716	4423	0.28	82	64	79
total	5115	1146	0.23	46	24	63

Source: NIDS wave 1, own calculations.

Notes: Earnings quintiles are defined in terms of gross earnings, including for individuals who only reported gross earnings (through bracket responses) but without imputed data for missing data. The fourth column shows deductions as a proportion of gross earnings only for individuals who provided data gross and net data.

Any under-reporting due to these deductions (i.e. for pension or provident funds, medical aid, and tax, which might be understood as including UIF) is likely to affect higher-earners more than lower-earners. Higher-earners were also much more likely to earn unrecorded earnings (such as annual bonuses). They also have more tax deducted at source. Both the 1994/1995 StatsSA household surveys and the 2008 NIDS found that the proportion of net earnings deducted was almost zero among low-earners and much higher among higher-earners. It is therefore unlikely that this deduction-related under-reporting makes much difference in the lower half of the earnings distribution (as Wittenberg himself notes, 2014: 47), but the

PALMS data probably underestimates real growth in the top half of the earnings distribution.

Comparison of the NIDS data with earnings data from StatsSA's household surveys suggests that the 'gross' earnings data in the latter really did correspond with the gross earnings data from NIDS, i.e. that respondents in the StatsSA surveys did understand (to some extent, at least) the difference between gross and net earnings, even when they were only asked about the former. Unfortunately the StatsSA QLFS in 2008 and early 2009 did not ask about earnings, hence Table 2 below compares mean and median earnings data from the LFSs from 2007 and the QLFS from early 2010 – i.e. the StatsSA surveys which did ask about earnings, on either side of the NIDS survey – with the NIDS data from mid-2008. LFS/QLFS data are from PALMS. The data are presented in both current prices and constant June 2008 prices, i.e. when the NIDS data were collected.¹⁰

The supposedly gross real earnings data from the 2007 LFSs seem broadly in line with the 2008 NIDS gross earnings data, showing the expected trend of a modest rise in mean real earnings, but little clear trend in median real earnings. Real take-home pay in NIDS was substantially lower than the real earnings reported in the LFS. The QLFSs are less easy to assess. In real terms, the QLFS earnings data are markedly lower than the gross earnings data from NIDS. Other data suggest that the global economic downturn led to a sharp decline in employment but only a modest and very short-lived downturn in real earnings in South Africa. By 2010 earnings should have been back at or higher than their 2008 level. On the face of it, the QLFS data are under-reporting gross earnings relative to the earlier LFSs and NIDS.

The comparison of the LFS and NIDS data seems to corroborate Wittenberg's scepticism that deductions are responsible for large-scale under-reporting of earnings, but the QLFS data are less clear. Even taking the LFS/NIDS comparison into account, it is likely premature to dismiss the possibility of major under-reporting of gross earnings. Respondents in NIDS may have been able to give different figures for gross and take-home pay, but there is no evidence to suggest that they reported their gross earnings correctly. Respondents might underestimate deductions and thus under-report gross earnings. Without systematic analysis of pay slips and employers' payroll records, and comparison with what working people themselves (or household members on their behalf) report, it is not possible

¹⁰ Ranchod (2009) compares NIDS and QLFS employment data (using 2008 Q2) but does not attempt to compare the earnings data.

to establish the extent of under-reporting. It needs to be noted that NIDS found deductions of only 23% among the top earnings quintile in 2008 (see Table 1), whereas the 1994/95 StatsSA household surveys found that deductions rose to about 40% among high earners (Wittenberg and Pirouz, 2013: 5). Deductions of only 23% among high earners seem far too modest.

Table 2: Comparison with NIDS gross and net earnings with LFS/QLFS gross earnings, 2007-09: Monthly earnings (Rand, in current and June 2008 prices)

	LFS Mar 2007	LFS Sep 2007	NIDS 2008 gross earnings	NIDS 2008 take- home	QLFS 2010 Q1	QLFS 2010 Q2
Mean (current prices)	3998	4612	5115	3890	5365	5675
Median (current prices)	2165	2500	2500	2000	2800	2816
Mean (2008 prices)	4510	5016	5115	3890	4469	4608
Median (2008 prices)	2442	2719	2500	2000	2332	2287
In/deflator	1.70	1.43	0	0	0.637	0.614

Note: In/deflator uses CPI (total, all urban areas) from SARB

Debt and disclosure

The 2008 NIDS questions make no allowance for ‘deductions’ other than for pensions, medical aid or tax. It is not clear whether respondents understand ‘take-home pay’ to be net also of garnishee or debit orders for consumer debt. Consumer debt grew rapidly in South Africa after the end of apartheid (Hurwitz and Luiz, 2007). The National Credit Regulator collates data on household debt, which may or may not include debt contracted informally through unaccredited ‘mashonishas’ or informal money lenders. The official data show that the ratio of consumer debt to household income rose from 56% in 2004 to 75% in 2011. Approximately 20 million South Africans are ‘credit-active’, meaning that they have personal debts. Growing numbers of South Africans were unable to service their debts. Statistics from Stats South Africa suggest that about 75 000 consumer debt default

judgments were being issued every month by November 2006, and about 4 million South Africans had been blacklisted by credit bureaux. The value of garnishee orders has risen accordingly. Civil servants were reported to be paying R1 billion through garnishee orders by 2006/07 (Ssebagala, 2014: 2-6).

If debit (and garnishee) orders are a factor in the under-reporting of earnings, then the distribution of personal debt might provide an indication of the allotment of under-reporting. NIDS asked a set of questions about debt in its first three waves (in 2008, 2010 and 2012). Nationally, 18% of the entire adult sample reported having any consumer debt in the first wave. The proportion was lower in the second and third waves. More than half of the individuals detailing any consumer debt (and 10% of the entire sample) reported having retail credit card debt. About half as many people reported owing on their credit cards or for vehicle finance. Surprisingly few adults reported debts to family or friends, or to mashonishas. Possible reasons for this include that debts to family and friends are not considered to be debts, and debts to informal moneylenders may be of a short duration, such that few people have debts at any one time even if many more people have such debts at some time over the year. Debtors in NIDS reported spending, in total, 14 percent of their earnings on servicing their debts, an average of more than R1,100 per month in 2008.¹¹ Debts were highest among people in their 40s and 50s. The total value of debt varied little across the bottom three quintiles, but was higher in the fourth quintile and much higher in the fifth (richest) quintile – although the ratio of debt-service to income was much lower among the very rich than anyone else (Ssebagala, 2014).

This – as well as other research (including Hurwitz and Luis, 2007; James, 2014) – suggests that debt is a serious problem for the ‘urban working class’ and lower middle-classes, whose formal employment allows them to borrow heavily from banks (for renovations to houses, car purchases, and to meet social obligations such as funerals). Few non-rich individuals have big debts for cars or houses (see Table 3). Poorer households have lower debts, but are more likely to borrow informally and significant minorities use store cards or buy on hire purchase (see Table 3). They often pay much higher interest rates, which sometimes result in high debt service costs relative to earnings. As Ssebagala (2014) found, the people with the most crippling debts are often people whose circumstances changed, either because their earnings plummeted (perhaps due to retrenchment) or because

¹¹ But Ssebagala also reports that the mean debt-service ratio was 31%. The data need to be reanalysed.

they incurred additional expenses (perhaps because they acquired additional dependents).

Table 3: Further characteristics, waged employees, 2008

Earnings quintile	mean gross earnings (Rand/month)	owns a car (%)	has home-loan (%)	has store card or HP (%)
1	480	3	<1	10
2	1170	4	<1	20
3	2250	11	3	29
4	4850	33	11	43
5	19630	68	40	45
Total	5600	23	11	29

Source: NIDS wave 1, own calculations.

Note: these earning quintiles are defined as inclusive of all earnings, including second jobs.

Some debt is linked to a desire to proclaim and display affluence as a marker of success: some consumption is ‘conspicuous’ (the most extreme example being the phenomenon of izikhotane, who burn expensive clothes and even money). At the same time, social pressure leads many others to downplay or hide their earnings. Qualitative researchers find that pressures on earners to redistribute (the so-called ‘black tax’) lead some, possibly numerous, earners to downplay their capacity to assist financially kin or non-kin. In a context of high unemployment and dependency rates, pleading poverty is used as a way for working people to manage the claims made on them. One reason for contributing to stokvels or burial societies is to put money aside, out of the reach of dependents.

Most of what we ‘know’ about the sociology of disclosure of earnings comes indirectly, from studies of other topics. As such, there is a clear and pressing need for research into how earners (and non-earners) understand and report earnings.

Implications for the analysis of real earnings

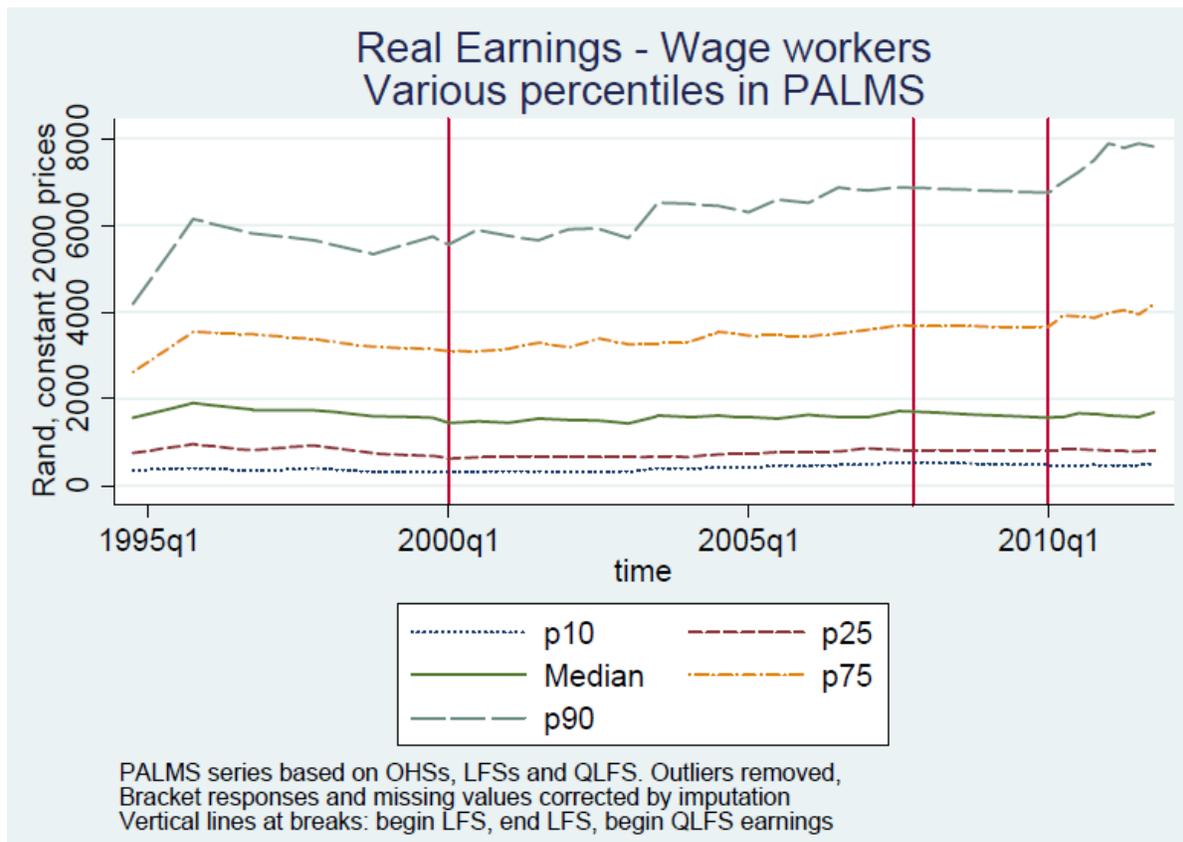
The discrepancy between household-survey wage data and firm-survey data, the national accounts and sectoral data (mining, teaching, domestic work) suggest that we need to use the former with care. The limited research into deductions, debt and

the sociology of disclosure underscore the need for caution. The published PALMS dataset takes the self-reported gross wage data from household surveys at face value, without any adjustment for under-reporting. Insofar as the discrepancy between household-survey data and other data is due to under-reporting in the former, then PALMS understates the actual growth of real earnings. Considering that under-reporting is more prevalent among higher-earners, then the earnings of above-median earners and the ‘working poor’ probably diverged even more sharply than suggested by Wittenberg, using PALMS data. Precisely how this would affect the median earner is not clear.

Some working people have been clear ‘winners’ in the post-1994 labour market, whilst others – and of course the unemployed – have not. Disaggregated wage trends are fundamental to distinguishing whether workers were or were not ‘winners’. Most existing analyses, based on flawed, incomplete or no data, underestimate the number of winners. Despite the major flaws in the wage data, the PALMS dataset is the best place to start an analysis of wage trends. The PALMS data suggest that mean real wages among wage-earners rose, probably from 1994 and certainly from 2000 (Wittenberg, 2014: 9-11). Even using revised weights, the 1995 data were anomalously high (see Figure 1, from Wittenberg, 2014: Figure 15), almost certainly reflecting methodological rather than substantive factors. Regressing mean real earnings by year shows that the average growth rate between 1994 and the end of 2011 was 2.2% per year.¹² Insofar as the PALMS data underestimate gross earnings, they also underestimate the growth of real earnings over time.

PALMS shows that wage growth was distributed unevenly, however, as is shown in Figure 1 (from Wittenberg, 2014). There seems to have been some compression in the distribution at the bottom, with the lowest earnings rising relative to the median, but the absolute changes are very small. PALMS suggests that median real earnings remained stagnant, while earnings above the median rose. The 75th percentile increased by somewhere between one quarter and one third, and the 90th percentile grew by at least one-third. The ratio of the 75th percentile to the mean rose from about 2:1 to about 2.5:1, whilst the ratio of the 90th percentile to the median increased from about 3:1 to about 5:1 (Wittenberg, 2014). The PALMS data thus suggest that the benefits of growth were distributed primarily in higher wages for the better-paid, and only secondarily in modest growth in mostly low-earning employment (and self-employment).

¹² This assumes linear growth. I am grateful to Martin Wittenberg for sending me the do file that he used to generate mean earnings by wave.



Source: Wittenberg, 2014 (reproduced with permission).

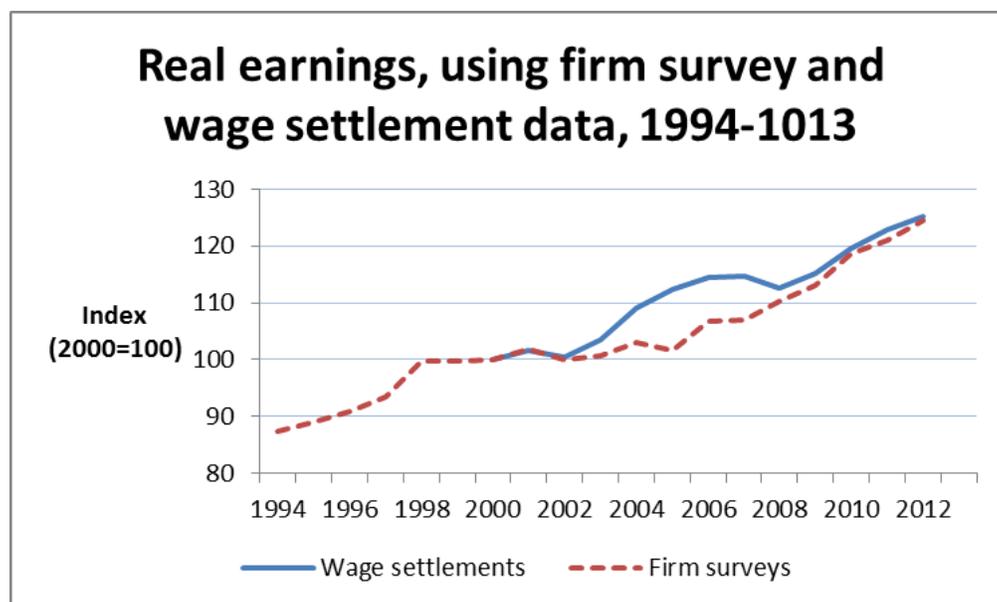
Figure 1: Real Earnings – Wage workers

PALMS data suggest that the upward trend in average wages was more pronounced in terms of hourly wages, because workers in some sectors (especially domestic work) worked fewer hours per week in the 2000s than in the 1990s. Adjusting employment and wage data for hours worked shows very clearly that employment in some sectors really declined, whilst in domestic work there was a shift to (more) part-time employment (Wittenberg, 2014: 30-38).

These household surveys may have under-recorded earnings, and done so by a rising margin in the 2000s. StatsSA’s firm-survey data indicate that the growth of *mean* earnings was stronger than suggested by the household survey data (Wittenberg, 2014: 40). The firm-survey data are not in the public domain and

therefore cannot be interrogated as closely as the household survey data used for PALMS. The Reserve Bank does publish mean wage data from the firm surveys.¹³

Between the second quarter of 1994 and the third quarter of 2013, mean remuneration per worker in non-agricultural sectors rose, according to firm survey data, more than five-fold in nominal terms (i.e. in current prices) and by 57% in real terms (i.e. in constant prices, taking price inflation into account) (see Figure 2). According to these data, mean remuneration grew very rapidly between 1994 and 1998, stagnated during 1999-2005 (i.e. the period when the flawed pre-PALMS household survey data recorded a collapse), then grew very rapidly again from 2005 with only a short pause in 2008-09. It is impossible to tell how much of the growth in real earnings accrued to workers with below-median earnings and how much accrued to above-median earners, or how the median earner was affected because the firm survey data are not available for public use, and neither StatsSA nor the Reserve Bank have published any data on the changing distribution of earnings.



Source: SARB, series KBP7013Y; Andrew Levy data reported by SARB.

Figure 2: Indices of real remuneration per worker (firm surveys) and wage settlements (2000=100), 1994-2013

¹³ Our calculations using data downloaded (26th March 2014) from South African Reserve Bank, series KBP7013D/Y (constant prices) and KBP7013L/J (current prices).

The firm survey data appear to be broadly consistent with data on collective wage agreements – i.e. agreements between unions and employers – collated by Andrew Levy Employment Publications (see Figure 2). Over the sixteen years from 1998 to 2013 inclusive, average wage settlements were 2 percentage points higher than price inflation. In only two out of these sixteen years (2002 and 2008) did average wage settlements lag behind price inflation such that wages fell in real terms (wage settlements were almost the same as price inflation in 2007 also).¹⁴ Wage settlements surged ahead of the growth remuneration according to firm surveys between 2003 and 2005, but the two trends converged again thereafter. The wage agreement data cover workers in sectors where there are strong unions. The distribution of workers covered directly by collective agreements most likely corresponds to the distribution of union membership.¹⁵ The difference between the wage agreement data and the firm survey data in the mid-2000s might therefore imply that the union wage premium rose and then shrank during the mid-2000s. In general, the wage agreement data are consistent with the firm-survey data in suggesting that unionised workers (i.e. the ‘organised working-class’) shared in post-apartheid wage growth.

The uneven growth of real earnings affects different kinds of workers differently. Unskilled workers in sectors with regulated minimum wages – for example, in domestic work or the private security industry – would be in the second earnings quintile in 2004 if they earned only the minimum wage. If they earned much above the minimum wage, however, they would be in the third of middle earnings quintile. The middle (third) earnings quintile included large numbers of unskilled workers (including labourers, cleaners, packers, farm and domestic workers) as well as semi-skilled workers (including cashiers, cooks and shop assistants, as well as some machine operators, bricklayers and mechanics). The fourth earnings quintile included many nurses, primary school teachers, police officers and clerks. Truck-drivers and mineworkers were divided between the third and fourth earnings quintiles. The fifth earnings quintile also included many teachers, especially in secondary school but also in primary schools, as well as nurses, and the full range of professionals and senior managers.

¹⁴ The Andrew Levy wage settlement time-series for 1998 to 2013 are constructed from annual figures reported every year in the March issue of the South African Reserve Bank’s *Quarterly Bulletin*.

¹⁵ Indirectly, agreements might affect non-members, including through the extension mechanism discussed below.

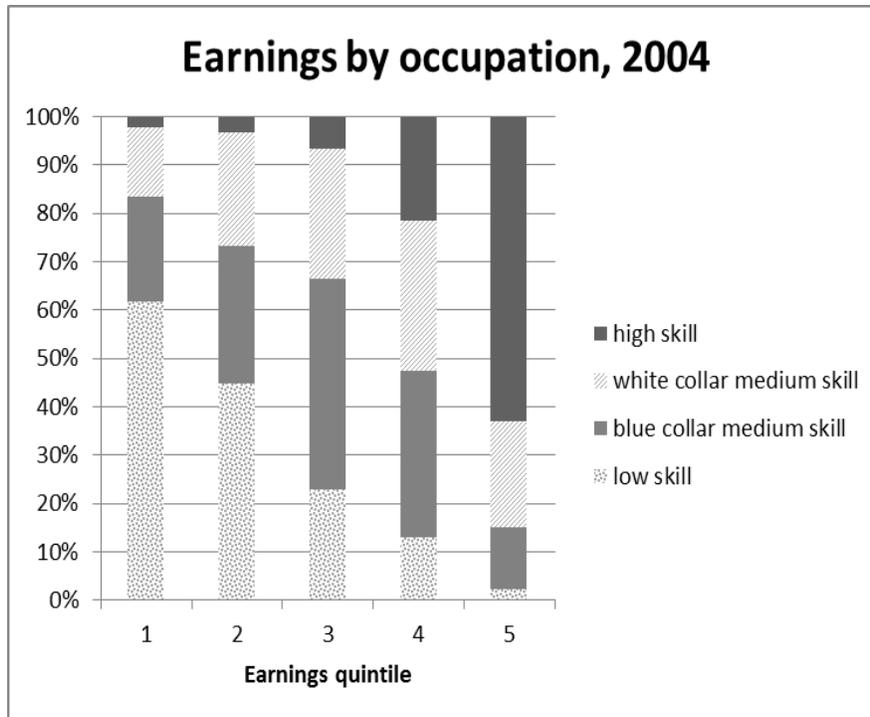


Figure 3: Earnings by occupation, 2004

Figure 3 shows the overall distribution of wage-earners by profession, grouping occupations using simply the standard international one-digit occupational classifications. The high skill occupations – i.e. legislators, senior officials, managers, professionals, technicians and associate professionals (including teachers and nurses) – were concentrated in the higher earnings quintiles. An entry-level lecturer at the University of Cape Town earned (gross), in 2004, just under R20,000 per month, placing them not only in the top earnings quintile, but close to the 95th percentile. A full professor at the University of Cape Town earned double this, putting him or her firmly in the top percentile of the earnings distribution. Medium-skill white-collar occupations – i.e. clerks and shop and service workers – and blue-collar occupations – including skilled agricultural and fishery workers, craft and related trades workers, and plant and machine operators – were spread across all five earnings quintiles, but were especially concentrated in the third and fourth earnings quintiles. The lowest skill occupations – elementary and domestic workers – were unsurprisingly concentrated in the lower earning quintiles.

Figure 4 shows the overall distribution of workers in each earnings quintile by sector, using the PALMS 2004 LFS data. Household- and firm-survey data concur that workers in manufacturing, mining, transport, finance and trade are mostly above the median, whereas workers in construction, domestic work, agriculture

and other services are mostly below the median. Figure 4 shows that low-waged employment was disproportionately concentrated in agriculture and domestic service. It shows that workers in these sectors predominated in the poorest earnings quintile. This indicates that either these workers were working part-time, or their employers were paying them less than the legal minimum, or they under-reported their earnings. Construction employment was concentrated in the lower but not the lowest earnings bands. There were a few low-earning workers in mining, manufacturing and the utility sectors, but most workers in these sectors are in the third, fourth and fifth (top) earnings quintiles. The same is true for employment in finance and other services.

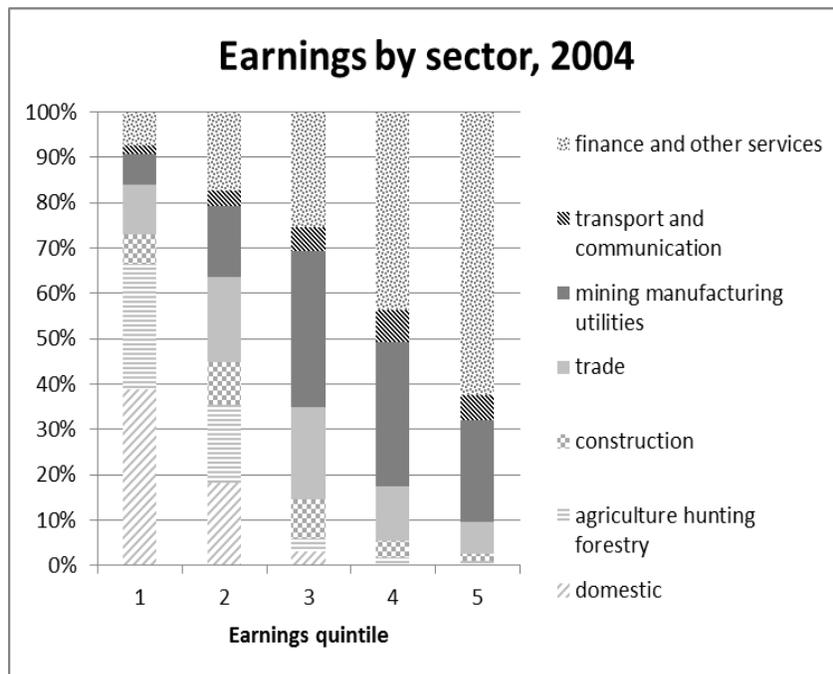


Figure 4: Earnings by sector, 2004

The ‘median’ worker, in terms of self-reported earnings, was thus likely a well-paid unskilled worker or a poorly-paid worker in a menial white-collar occupation (such as cashiers or shop assistants). The ‘typical’ fourth earnings quintile worker was a police officer, primary school teacher or a better paid mineworker. The sectoral and occupational patterns suggest that the clearest winners in the post-apartheid labour market were skilled white-collar workers, but the ranks of winners included also semi-skilled workers.

Employment patterns changed since the end of apartheid, in terms of both sectoral composition (Oosthuizen, 2006; Wittenberg, 2014: 24-5) and skill composition.

Employment losses in mining and agriculture were concentrated among unskilled workers. Unskilled employment accounted for 77 percent of all employment in agriculture, forestry and fishing in 1995, but only 53 percent in 2004, whilst in mining the proportion fell from 18 percent to 12 percent over the same period.¹⁶ Construction, wholesale and retail trade, in contrast, became *less* skill-intensive over this period (Oosthuizen, 2006).¹⁷ Given that employment growth in the wholesale and retail trade is largely informal, there was a substantial collapse in formal unskilled employment.



Figure 5: Real monthly earnings by occupation, 1994-2011

Real earnings rose most sharply for more skilled occupations. Figure 5 shows real earnings by occupational group, using PALMS data for the clusters of occupations used in Figure 4 above. Real earnings for high skill occupations rose strongly. Medium-skill white-collar occupations experienced stagnant real earnings on average. Medium-skill blue-collar occupations may have experienced a modest decline in the late 1990s before growing in the 2000s. The lowest skill occupations experienced stagnant real earnings on average.

¹⁶ The 1995 data were from the October Household Survey, which seems to have under-sampled poor people, and therefore probably undercounted the numbers of unskilled workers. These data therefore probably understate the decline in unskilled employment.

¹⁷ I cannot replicate these results using PALMS.

In conclusion, whilst it is likely that the under-reporting of earnings is most marked among above-median earners, it is possible that some groups of lower-paid workers – perhaps including workers who have benefitted from the deepening of regulation (i.e. through written contracts, minimum wages and conditions of employment, etc) – have also become able to incur the kinds of debt-related deductions that might explain the under-reporting of earnings.

There is thus considerable uncertainty over the trends in the earnings of different groups of workers since the end of apartheid. It is likely that the wages of higher-earners are substantially under-reported. Most professionals, semi-professionals, white-collar workers, artisans, and semi-skilled as well as skilled workers have prospered in all likelihood – and have financially thrived more than suggested even by Wittenberg (2014). Almost all trade union members will have prospered. Informal and casual employees are most likely to have experienced stagnant earnings (see Seekings, 2015b).

Implications for public policy

The wages of a majority of South African workers are regulated through one of two mechanisms. In most unionised sectors, wages are regulated through bargaining councils, in which unions and employers' associations engage in state-sanctioned collective bargaining. The Minister of Labour typically extends agreements reached in bargaining councils to the entire industry, i.e. to workers and employers who were not represented in the negotiations. In non-unionised sectors without bargaining councils, minimum wages are set by the Minister of Labour on the basis of recommendations from the Employment Conditions Commission, which is a tripartite institution (with representatives of organised business and labour, as well as government-appointed independent experts) charged with setting wages, by taking into account a range of factors including possible effects on job destruction. Both mechanisms set wages by sector, and some sectors remain uncovered. In the 2014 election, the governing African National Congress promised that it would introduce a national minimum wage. In 2015, organised (mostly big) business and organised labour, along with the state agreed to the principle of a national minimum.

Debates about minimum wages have been informed by research using existing wage data from household surveys. Taking into consideration that these wage data are flawed, some of the findings based on them are likely to be inconsistent too.

Bhorat, Kanbur and Mayet (2012a, 2012b) use wage data from household surveys to estimate non-compliance with sectoral minima. If wages of affected workers are under-reported, then the consequence will be an exaggerated estimate of the extent of non-compliance. Although the problem of under-reporting is likely to be more pronounced among better-paid, above-median earners, and minimum wages affect workers in the middle and lower end of the income distribution, then under-reporting among minimum-affected workers may be modest.

Bhorat, Goga and van der Westhuizen (2012), Bhorat, Kanbur and Mayet (2012c) and Bhorat, Kanbur and Stanwix (2013) all use wage data to examine the effects of changes in sectoral minima on actual wages, and then employment (including hours worked). Insofar as wages of affected workers are under-reported, the effects of changes might also be underestimated, especially if under-reporting rises over time. Again, under-reporting is likely to be more modest among minimum-affected workers than among higher-earning workers. What will not be affected are the data on hours worked or employment effects.

Coleman (2013) uses wage data from firm surveys to calculate mean wages in South Africa, which he then uses to suggest the level of a national minimum wage (NMW) by applying a ratio derived from the experience of low-unemployment, advanced capitalist economies. Whilst the firm survey data may be more accurate for workers in medium-sized and large firms, the surveys certainly exclude many low-wage workers, and therefore the mean wage suggested by firm survey data is almost certainly an exaggeration of the mean wage in the economy as a whole. The mean wage in the economy at large is likely to be higher than suggested by household surveys and lower than indicated by firm surveys. Setting the NMW in terms of some ratio of mean wages using firm data will inflate the NMW.

Estimates on median wages from household surveys are less likely to be affected by under-reporting. Estimates of per capita income from the national accounts are unaffected by under-reporting in household surveys. These are among the good reasons for relying more heavily on the ratio of NMW to median wages and the ratio of NMW to per capita income, than on the ratio of NMW to mean wages (see further Seekings and Nattrass, 2015a, 2016 forthcoming).

Wage data have apparent and important policy implications. Further research is clearly needed into the quality of wage data, and into methods for improving the quality of the data.

References

- Altman, M. 2006. Wage determination in South Africa: What do we know?. *Transformation*, 60: 58-89.
- Ardington, C., Lam, D., Leibbrandt, M., and Welch, M. 2005. The Sensitivity of Estimates of Post-Apartheid Changes in South African Poverty and Inequality to Key Data Imputations. *CSSR Working Paper* no.106. Cape Town: Centre for Social Science Research, University of Cape Town.
- Banerjee, A., Galiani, S., Levinsohn, J., McLaren, Z., and Woolard, I. 2008. Why has Unemployment Risen in the New South Africa?. *Economics of Transition*, 16(4): 715-740.
- Barchiesi, F. 2011. *Precarious Liberation: Workers, the state, and contested social citizenship in postapartheid South Africa*. Albany: State University of New York Press.
- Bhorat, H., and Oosthuizen, M. 2006. Evolution of the labour market: 1995-2002. In *Poverty and Policy in Post-Apartheid South Africa*. Edited by Bhorat, H., and Kanbur, R. Cape Town: Human Sciences Research Council Press, pp. 143-200.
- , Goga S., and van der Westhuizen, C. 2012. Institutional wage effects: Revisiting union and bargaining council wage premia in South Africa. *South African Journal of Economics*, 80(3): 400-14.
- , Kanbur, R., and Mayet, N. 2012a. Minimum wage violation in South Africa. *International Labour Review*, 151(3): 277-87.
- , -----, and -----. 2012b. Estimating the causal effect of enforcement on minimum wage compliance: the case of South Africa. *Review of Development Economics*, 16(4): 608-23.
- , -----, and -----. 2012c. The impact of sectoral minimum wage laws on employment, wages, and hours of work in South Africa. *DPRU Working Paper* 12/154. Cape Town: University of Cape Town, Development Policy Research Unit.

-----, -----, and Stanwix, B. 2013. Estimating the impact of minimum wages on employment, wages and non-wage benefits: the case of agriculture in South Africa. Charles H. Dyson School of Applied Economics and Management *Working Paper* 2013-05. Ithaca: Cornell University.

-----, and van der Westhuizen, C. 2012. Poverty, Inequality and the Nature of Economics Growth in South Africa. *DPRU Working Paper* no.12/15. Cape Town: Development Policy Research Unit, University of Cape Town.

Casale, D. 2004. What Has the Feminisation of the Labour Market bought Women in South Africa? Trends in Labour Force Participation, Employment and Earnings, 1995-2001. *Journal of Interdisciplinary Economics*, 15(3/4): 251-76.

-----, Muller, C. and Posel, D. 2005. “Two Million Net New Jobs”: A Reconsideration of the Rise in Employment in South Africa, 1995-2003. *South African Journal of Economics*, 72(5): 978-1002.

-----, and Posel, D. 2002. The continued feminisation of the labour force in South Africa’, *South African Journal of Economics*, 70(1): 156-84.

Di Paola, M., and Pons-Vignon, N. 2013. Labour market restructuring in South Africa: low wages, high insecurity. *Review of African Political Economy*, 40(138): 628-638.

Finn, A., and Leibbrandt M. 2013. The Dynamics of Poverty in the First Three Waves of NIDS. *SALDRU Working Paper* no. 119. Cape Town: Southern Africa Labour and Development Research Unit.

Habib, A. 2013. *South Africa’s Suspended Revolution*. Johannesburg: Witwatersrand University Press.

Hoogeveen, J., and Özler, B. 2006. Poverty and inequality in post-apartheid South Africa. In *Poverty and Policy in Post-Apartheid South Africa*. Edited by Borat, H., and Kanbur, R. Cape Town: Human Sciences Research Council Press, pp. 59-94.

Kerr, Andrew, and Martin Wittenberg (2013), ‘Sampling Methodology and Field Work Changes in the October Household Surveys and Labour Force Surveys’, *DataFirst Technical Paper* 21 (Cape Town: DataFirst, University of Cape Town).

Leibbrandt, M., Woolard, I., Finn, A., and Argent, J. 2010. Trends in South African Income Distribution and Poverty since the Fall of Apartheid. *OECD Social, Employment and Migration Working Paper* 101. Paris: OECD.

-----, Levinsohn, J., and McCrary, J. 2010. Incomes in South Africa after the Fall of Apartheid. *Journal of Globalization and Development*, 1(1): article 2.

-----, Poswell, L., Naidoo, P., and Welch, M. 2006. Measuring Recent Changes in South African Inequality and Poverty Using 1996 and 2001 Census Data. In *Poverty and Policy in Post-Apartheid South Africa*. Edited by Borat, H., and Kanbur, R. Pretoria: Human Sciences Research Council Press, pp. 95-142.

Meth, C. 2006. What was the poverty headcount in 2004 and how does it compare to recent estimates by van der Berg et al?. Unpublished paper.

-----, and Dias, R. 2004. Increases in poverty in South Africa. 1999-2002. *Development Southern Africa*, 211, 59-85.

Marais, H. 2011. *South Africa Pushed to the Limit: The Political Economy of Change*. Cape Town: UCT Press.

Oosthuizen, M. 2006. The Post-Apartheid Labour Market: 1995-2004', *DPRU Working Paper* no.06/103. Cape Town: Development Policy Research Unit, University of Cape Town.

Pons-Vignon, N., and Anseeuw, W. 2009. Great Expectations: Working Conditions in South Africa since the End of Apartheid. *Journal of Southern African Studies*, 35(4): 883-99.

Ranchod, V. 2009. Labour market: Analysis of the NIDS wave 1 dataset. *NIDS Discussion Paper* 12. Cape Town: National Income Dynamics Study, University of Cape Town.

SARB. 2008. *Quarterly Bulletin* no.247. March. Pretoria: South African Reserve Bank.

-----, 2014. *Quarterly Bulletin* no.271. March. Pretoria: South African Reserve Bank.

Seekings, J. 2006. Facts, Myths, and Controversies: The Measurement and Analysis of Poverty and Inequality after Apartheid. *Paper presented at the After Apartheid Conference*. Cape Town, 11th-12th August, 2006.

-----, 2011. Poverty and Inequality in South Africa, 1994-2007. In *After Apartheid: Reinventing South Africa*. Edited by Shapiro, I., and Tebeau, K. Charlottesville: University of Virginia Press, pp. 21-51.

-----, 2015a. Poverty amidst affluence. In *Policy, Politics and Poverty in South Africa*. Co-authored with Nicoli Nattrass. London: Palgrave Macmillan, pp. 27-52.

-----, 2015b. Workers, the state and wages'. *Policy, Politics and Poverty in South Africa*. Co-authored with Nicoli Nattrass. London: Palgrave Macmillan, 53-79.

-----, and Nattrass, N. 2015a. National minimum wage setting in South Africa', *CSSR Working Paper* no. 362. Cape Town: Centre for Social Science Research, University of Cape Town.

-----, 2017. Setting the level of a national minimum wage: What can South Africa learn from other countries' experiences?. *Transformation*, 92: 1-36.

Skordis, J., and Welch, M. 2004. Comparing alternative measures of household income: Evidence from the Khayelitsha/Mitchell's plain survey. *Development Southern Africa*, 21(3): 461-481.

Ssebagala, R. 2014. The dynamics of consumer credit and household indebtedness in South Africa. *Unpublished PhD thesis*. University of Cape Town.

Van der Berg, S., Burger, R., Burger, R., Louw, M., and Yu, D. 2006. Trends in Poverty and Inequality Since the Political Transition. *DPRU Working Paper* no.06/104. Cape Town: Development Policy Research Unit, University of Cape Town.

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

Webster, E., Lambert, R. and Bezuidenhout, A. 2008. *Grounding Globalization: Labour in the Age of Insecurity*. Oxford: Blackwell.

Wittenberg, M. 2014. Analysis of employment, real wage, and productivity trends in South Africa since 1994. *Conditions of Work and Employment series paper* no.45. Geneva: ILO.

-----., and Kerr, A. 2012. Science and Nonsense: Further criticisms of Adcorp. Unpublished paper. DataFirst UCT.

-----., and Pirouz, F. 2013. The measurement of earnings in the post-apartheid period: An overview. *DataFirst Technical Paper* 23. Cape Town: DataFirst, University of Cape Town.

Yu, D. 2013. Some factors influencing the comparability and reliability of poverty estimates across household surveys. *Stellenbosch Economic Working Papers* no.03/13. Stellenbosch: University of Stellenbosch, Department of Economics.