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Low-Wage Mobility in the South African Labour Market

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Title: **Low-wage mobility in the South African labour market**

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Abstract

Access to employment is a key determinant of well-being for individuals and households, therefore it is crucial to understand the dynamics of labour markets. This paper uses the six waves of South Africa's Labour Force Survey panel to assess low-wage mobility between September 2001 and March 2004. On aggregate, rates of low-wage work fell substantially over this period. Transitions between employment states are shown to be important, as employment is more precarious for the working poor than for higher-earning workers. Low-wage workers who maintain employment are substantially more likely to experience upward than downward earnings mobility. However, there is evidence of working poverty traps amongst women, and amongst workers with less education or located in the informal sector. There is a clear improvement in earnings mobility over time for vulnerable workers in domestic and agricultural occupations.

JEL classification: J21; J31; J60
Keywords: low pay; wages; mobility; South Africa

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1. Introduction

Expanding access to employment, and hence earnings, is often viewed as a key solution to high levels of poverty in South Africa. However, the distribution of earnings remains extremely unequal, and thus the effectiveness of the labour market in providing a living wage is highly variable. A particular focus on the well-being of workers at the bottom of the earnings distribution is therefore crucial in understanding the relationship between labour markets and poverty.

Concerns with the incidence of low wage work within the South African labour market, which focus primarily on the living standards of workers and the extent of earnings inequality, implicitly centre on a static representation of the wage distribution. Here, the analysis focuses on the proportion of workers that are low paid at a particular point in time. While such an analysis of the overall distribution of earnings provides an aggregate snapshot, it omits a crucially important aspect of economic well-being: the persistence of low pay at the individual level. The long-term welfare of individual workers is clearly affected not only by their position in the earnings distribution at a point in time, but also by whether they move upwards or downwards in the distribution over time. This paper therefore examines the extent to which there is earnings mobility amongst the working poor in South Africa.

A high degree of persistence in low-paid work implies that individual workers tend to be chronically poor, spending a large proportion of their working life in low-paid employment. In contrast, a low degree of low-pay persistence implies that being low-paid is a transitory state, and that such workers are likely either to progress to higher-paying jobs, or to exit employment altogether. The welfare implications of workers being located at the bottom of the earnings distribution are thus highly contingent on their degree of earnings mobility and the extent to which low-pay traps exist.

Rather than a static assessment of the earnings distribution at a point in time, or of how the aggregate incidence of low pay has changed between periods, the focus of analysis thus shifts to a dynamic assessment of individual wage mobility. This necessitates the use of panel, rather than cross-sectional, data. By repeatedly observing the same individuals across time, it is possible to identify how workers move into and out of employment, and to track the progress of their earnings over time.

Most empirical studies of earnings mobility have been conducted on developed countries, where panel data are more readily available. Studies conducted using annual data for Britain from the 1990s, within a context of rising earnings inequality, find a high degree of immobility, and that there is a cycle of low wages and unemployment. Workers are fairly immobile both within earnings deciles and within states of non-employment, with women slightly more mobile than men (Dickens, 2000). Movements between employment states are important, as excluding individuals who exit employment from the analysis results in an under-estimation of the degree of low-pay persistence. Having more education, or belonging to a union, increases the likelihood that a worker will move up the earnings distribution

(Stewart and Swaffield, 2000). Similarly, in Italy, roughly 50 percent of low-paid workers persist in this category across the two-year panel, while there is also evidence of a low-pay/no-pay cycle and of a positive effect of education on mobility (Cappellari, 2000). A study at the aggregate level for three Latin American countries finds progressive earnings mobility, where individuals in lower earnings quintiles experience greater mobility than do individuals who start higher up the earnings distribution (Fields et al, 2007).

Empirical evidence on wage mobility in South Africa is rare. Cichello *et al* (2001; 2005) analyse earnings dynamics amongst Africans in KwaZulu-Natal between 1993 and 1998, using two waves of the KwaZulu-Natal Income Dynamics Study data, and find that African workers experienced large and progressive wage gains. Transitions between the informal and formal sector are strongly associated with upward mobility, but education levels and demographic characteristics are not found to account for changes in earnings. In contrast, the current paper uses the six waves of Statistics South Africa's Labour Force Survey panel, which enables the assessment of wage dynamics across the country as a whole, between September 2001 and March 2004.

The remainder of this paper is organised as follows. The next section examines the available data in South Africa and how the thresholds for low pay are defined. Section 3 compares estimates of low-paid work from the available cross-sectional and panel data sources, and examines the issue of attrition within the panel. Section 4 examines transitions between labour market states, and the extent to which low-wage workers are vulnerable to unemployment. Section 5 goes on to assess earnings mobility amongst the employed, and considers who (if any) among the working poor is upwardly mobile. Finally, section 6 concludes.

2. Data sources and definitions

The key data source that has previously been used to examine earnings in South Africa is the Labour Force Survey (LFS). Conducted biannually by Statistics South Africa (StatsSA) between March 2000 and September 2007, this nationally representative survey of roughly 30 000 households has the advantage of using a consistent survey instrument across time. This allows researchers to identify changes in South Africa's labour market over this time frame, without too much concern that such changes are artefacts of the data collection process. After September 2007, the biannual LFS was replaced by a quarterly LFS (QLFS), which no longer collected regular earnings information.

The LFSs were initially released to the public as a cross-sectional survey, and thus allowed for estimates of working poverty to be made at particular points in time, and for such aggregate estimates to be compared over time. However, in order to examine earnings mobility, it is necessary to use a panel survey. The second type of data used by this study is therefore the Labour Force Survey panel (LFS panel), released by StatsSA in 2006. The LFS panel consists of data from the September 2001 to March 2004 rounds of the LFS, matched

on individuals into a six-wave panel. However, since the survey was designed as a rotating panel of dwelling units, in which the same dwellings were visited in subsequent waves, with a 20 percent rotation, no attempt was made to track individuals or households that moved out of their initial dwelling unit. The LFS panel is thus likely to be subject to attrition to a greater extent than a panel of individuals or households. This issue is examined further in Section 3.

Earnings data collected in the LFS consist of the total salary at the worker's main job, including overtime, allowances and bonus, but before tax or deductions. Respondents may report their earnings as a weekly, monthly or annual figure; for this study, all reported earnings values were converted to monthly values for comparison purposes. As is common in many household surveys, however, the LFSs contain earnings data that consist of a mixture of (i) point-reported earnings responses, (ii) interval-censored (or bracket) responses and (iii) missing values. In addition, (iv) a number of workers report zero earnings, despite working non-zero hours[1]. In order to create a single continuous earnings variable with which to analyse low-wage work, while simultaneously making use of the largest possible sample, the natural logarithm of monthly earnings was multiply imputed for all but the first of these four earnings categories[2], using the sequential regression multivariate imputation approach developed by Raghunathan *et al* (2001). Estimates of interest, such as a poverty rate, are obtained separately from each imputed dataset, and then combined[3] using Rubin's rules (Rubin, 1987). This approach, and its effect on estimates of the working poor in South Africa, is discussed in detail in Vermaak (2010). Within the LFS panel, earnings were imputed separately for each wave. All of the panel estimates presented here represent the combined estimates across imputations, unless stated otherwise.

Low-wage or low-earning workers are defined in this study as those individuals aged 15 and older who were employed for at least one hour of the week preceding the survey, but whose real monthly earnings fall below a certain threshold. This definition includes both the wage-employed and the self-employed. Since all of the analysis is carried out on earnings at the level of the individual, without regard to other household sources of income, low-wage workers are synonymous here with the working poor.

It is helpful to use more than one threshold of low pay in an analysis of earnings mobility, in order to assess changes in wages amongst the poor, as well as to assess the sensitivity of estimates of transitions into and out of low pay to the threshold applied. This study uses four thresholds, all expressed in terms of 2000 prices[4], namely R150, R300, R500 and R800 per

[1] Most of these are workers engaged in subsistence agriculture or working without pay in a family business.
[2] Thus the variable of interest in this study, the natural logarithm of monthly earnings, consists of the following combination of observations: existing point earnings observations have been retained; interval-censored observations have been imputed to a value within their reported interval, following a truncated normal distribution; and missing and zero-reported earnings observations have been imputed to any value, following a normal distribution.
[3] Multiple imputation was implemented in Stata using the downloadable function 'ice', and the resulting datasets were analysed using the function 'mim'.
[4] The low-wage thresholds and earnings values have been converted into real terms using each year's annual average CPI for metropolitan areas (Statistics South Africa, 2007).

month. The approximate positions of these thresholds in terms of the quantiles of the earnings distribution in the first and last waves of the LFS panel are displayed in Table 1 below. The quantile value of each threshold declines between the first and sixth wave, which is indicative of a rightward shift in the real distribution of earnings over time.

Table 1. Low-wage thresholds in the LFS panel

Low-wage threshold	Wave 1 (September 2001)	Wave 6 (March 2004)
R150	5th percentile	3rd percentile
R300	15th percentile	11th percentile
R500	40% of median	36% of median
	26th percentile	21st percentile
R800	60% of median	58% of median
	38th percentile	35th percentile

Source: LFS panel, September 2001 and March 2004

Notes: (i) Low-wage thresholds measured in real 2000 prices; (ii) Quantile estimates are at the level of the sample

The post-apartheid period has witnessed numerous substantive changes in the legislative framework of the South African labour market, aimed at setting minimum employment standards, regulating organised bargaining and redressing discrimination. It is of particular interest to study the September 2001 to March 2004 period covered by the LFS panel, as it encompasses the passage of the 2002 amendment to the Basic Conditions of Employment Act (BCEA). In particular, the BCEA was accompanied by sectoral determinations in which minimum wages were extended to a number of sectors in which workers traditionally have been vulnerable, such as domestic work and agricultural wage employment (Department of Labour, 2002a and 2002b). This legislation can be expected to have benefitted workers who retained employment over this period, and thus the extent of poverty amongst the employed can be expected to have declined. However, labour market trends over this period may have acted to distribute such gains unevenly amongst the employed. The feminisation of the labour force, growing unemployment, informalisation of work and growth in self-employment suggest that some types of workers may be crowded into self-employment or jobs in the informal sector which are not covered by the new legislation (Casale, 2004; Casale *et al,* 2004; Bhorat and Cassim, 2006). This study thus aims to uncover not only the extent of earnings mobility, but also how such mobility varies amongst different types of low-wage workers.

3. Aggregate estimates of low-paid work

Empirical estimates of levels and trends in low-paid work in South Africa are fairly uncommon. Casale *et al* (2004) showed that the number of the employed who earned less than $2 a day in real terms (2000 prices) increased from less than one million in 1995 to more than two million in 2003. In particular, while 18 percent of those who were self-employed in the informal sector were poor in 1995, this proportion increased to 42 percent by 2003.

Valodia *et al* (2006) estimated that more than one half of all workers earned less than R1000 per month in 2000, while 40 percent earned less than R1000 in nominal terms in 2004.

Section 3 of this study uses the thresholds defined above to compare estimates of low-paid work from the available cross-sectional and panel data sources, and briefly examines the issue of attrition within the panel. Although estimates from the cross-section can be weighted to be representative of the population of South Africa, it is not possible to do the same with the panel[5]. Therefore, for comparability purposes, all low-wage estimates derived from the cross-sections are presented here at the level of the sample.

Table 2 shows that, using the LFS cross-section for September 2001, 4.5 percent of workers earned less than R150 per month, while 39 percent earned less than R800 per month. With the exception of an increase in the proportion of work that is low-wage between September 2001 and March 2002, the working poverty rate falls consistently in each subsequent six-month period. Using the cross-sectional data, the proportion of workers earning less than R800 falls by five percent across the entire period (and by 15 percent from its peak in March 2002). The proportional decline in working poverty is larger at each lower threshold, reaching a decline of almost 30 percent over the entire period at the R150 threshold (and 45 percent from its peak). It is therefore clear that the extent of low-wage work has declined in South Africa, and that the greatest relative improvement has occurred at the very bottom of the earnings distribution.

Table 2. Working poverty rates in the LFS cross-sections, September 2001 – March 2004

Threshold	Sep 2001	Mar 2002	Sep 2002	Mar 2003	Sep 2003	Mar 2004	% Change
R 150	4.55	5.82	4.93	4.34	3.65	3.23	-29.0
	(0.14)	(0.21)	(0.18)	(0.13)	(0.15)	(0.13)	
R 300	14.62	17.07	14.93	14.29	11.55	11.00	-24.7
	(0.25)	(0.23)	(0.24)	(0.23)	(0.22)	(0.23)	
R 500	26.83	29.67	27.34	27.21	22.90	22.18	-17.4
	(0.29)	(0.29)	(0.29)	(0.29)	(0.28)	(0.28)	
R 800	38.63	42.96	40.31	40.13	37.13	36.51	-5.5
	(0.31)	(0.30)	(0.32)	(0.31)	(0.32)	(0.31)	

Source: LFS cross-sections, September 2001 to March 2004

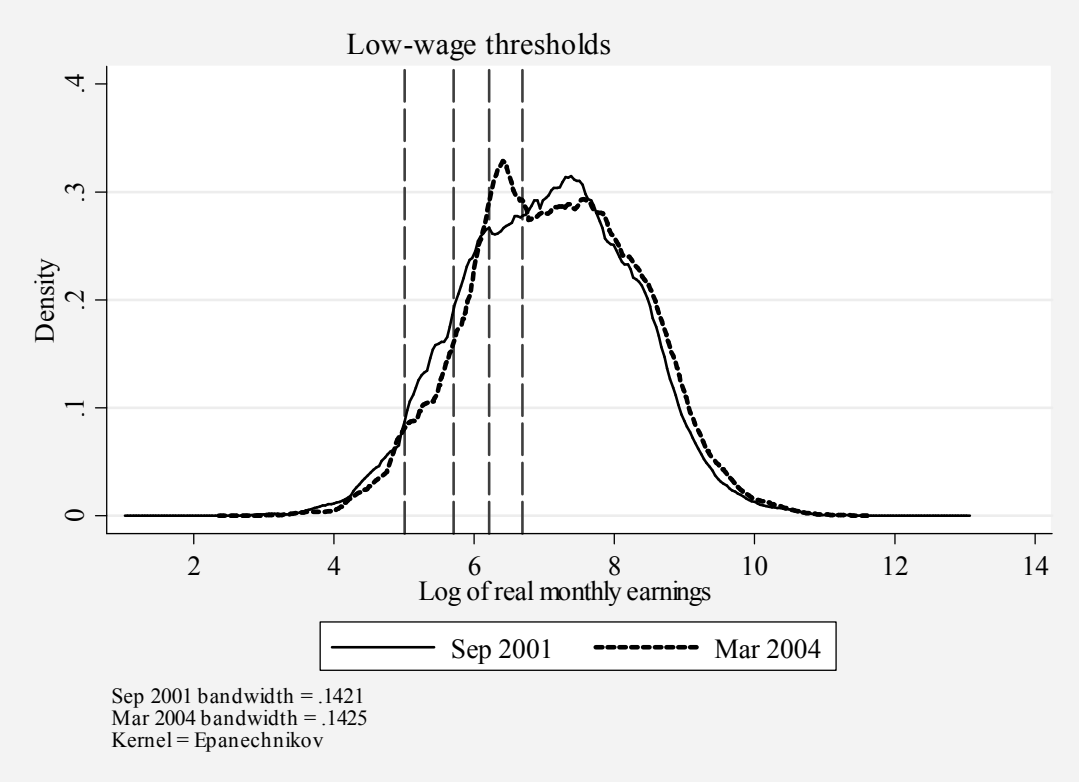
Notes: (i) Poverty thresholds measured in real 2000 prices; (ii) Standard errors in parentheses; (iii) All estimates are at the level of the sample

The distributions of the natural logarithm of real monthly earnings for the September 2001 and March 2004 LFSs are shown by the kernel density plots in Figure 1. As indicated by the poverty estimates in Table 2, the improvement in earnings at the bottom of the distribution is clearly visible by the extent of the rightward shift of the lower part of the distribution over time. It is also clear, however, why a much smaller improvement in the working poverty rate occurs at the R800 threshold than at any of the lower poverty lines: a much larger proportion of workers is located between the R500 and R800 thresholds in March 2004 than was the

[5] The StatsSA methodology document released with the panel states that "at this stage it is not possible to determine meaningful sampling weights for the panel sample" (StatsSA, 2006b: 26).

case in September 2001. Thus it appears that a substantial proportion of earnings values increased from below R500 to between R500 and R800 per month, without breaking through the upper threshold. Although not the focus of this study, an improvement in real earnings is also clearly visible at the upper end of the distribution.

Figure 1. Kernel density plots of the natural logarithm of real monthly earnings, September 2001 and March 2004



Source: LFS cross-sections, September 2001 and March 2004

Notes: (i) Earnings are measured in real 2000 prices; (ii) Density estimates are shown for the first imputed dataset for each data source; (iii) The low-wage thresholds are R150, R300, R500 and R800 per month respectively

However, a major potential concern when using a panel dataset to examine working poverty, rather than the cross-sectional data used thus far, is that attrition from the panel may be non-random. If low-earning workers are more likely to be lost from the panel than higher-earning workers, then the panel will underestimate working poverty rates, and transition probabilities estimated from the panel will be valid only for the specific types of low-wage workers who do not attrite, rather than for all low-wage workers. In particular, in the LFS panel, individuals attrite from the panel if they leave the dwelling place, since the survey was designed as a panel of dwelling places rather than households or individuals (StatsSA, 2006b: 5). Non-random attrition would thus imply that low-wage workers are more likely to change place of residence than higher-earning workers. This may occur if low-wage workers are more likely to seek work in other locations, either in search of higher wages or because low-wage work is more vulnerable to unemployment.

In order to evaluate possible attrition, the characteristics of the first and last waves of the panel subsamples, and their parent LFS cross-sections are shown in Table 3. The upper part of the table shows the sample composition for all individuals aged 15 and older, while the lower part summarises selected job characteristics for individuals aged 15 and older who are employed. The full samples are predominantly female and located in urban areas. More than a third of individuals in each sample are employed, while almost 40 percent are economically inactive, according to the strict definition of unemployment. Wage-employment (rather than self-employment) and formal sector work dominate, and most workers are employed in semi-skilled occupations.

Table 3. Sample description, September 2001 and March 2004 LFS cross-sections and corresponding panel waves

	September 2001		March 2004	
	Cross-section	Panel	Cross-section	Panel
Full sample N =	70 590	39 703	67 340	32 125
Age (mean)	36.22	37.05	36.92	38.52
	(16.74)	(16.99)	(17.05)	(17.14)
Percentage of individuals aged 15 and older:				
Male	46.19	45.04	46.30	45.94
African	77.59	76.12	75.91	74.11
Coloured	11.52	12.56	11.40	12.33
Indian	2.380	3.007	2.735	2.640
White	8.513	8.314	9.924	10.92
Urban	57.17	57.87	57.22	57.38
No schooling	11.10	10.40	10.14	9.391
Grade 1 – grade 7	28.20	28.01	24.52	21.77
Grade 8 – grade 11	36.95	38.49	38.43	42.85
Matric	16.52	15.95	19.92	17.40
Diploma/degree	7.228	7.156	6.988	8.591
Employed	36.78	35.68	36.51	36.96
Unemployed (strict definition)	15.39	14.60	13.58	12.80
Non-searching unemployed	9.790	9.558	11.72	11.16
Economically inactive	37.92	40.16	38.12	39.08
Employed subsample N =	25 274	14 168	24 371	11 872
Percentage of the employed who are:				
Wage-employed	81.76	80.51	82.93	81.22
Formal sector	69.05	69.69	73.48	74.49
Working in large firm (>50 employees)	26.42	25.32	29.12	29.09
Unskilled	32.23	29.88	33.51	31.05
Semi-skilled	49.63	50.30	46.25	46.73
Skilled	18.14	19.81	20.25	22.22
Domestic workers	9.685	8.491	8.430	7.328
Agricultural wage workers	7.065	6.218	9.655	8.389

Source: LFS cross-sections, September 2001 and March 2004; LFS panel, September 2001 and March 2004

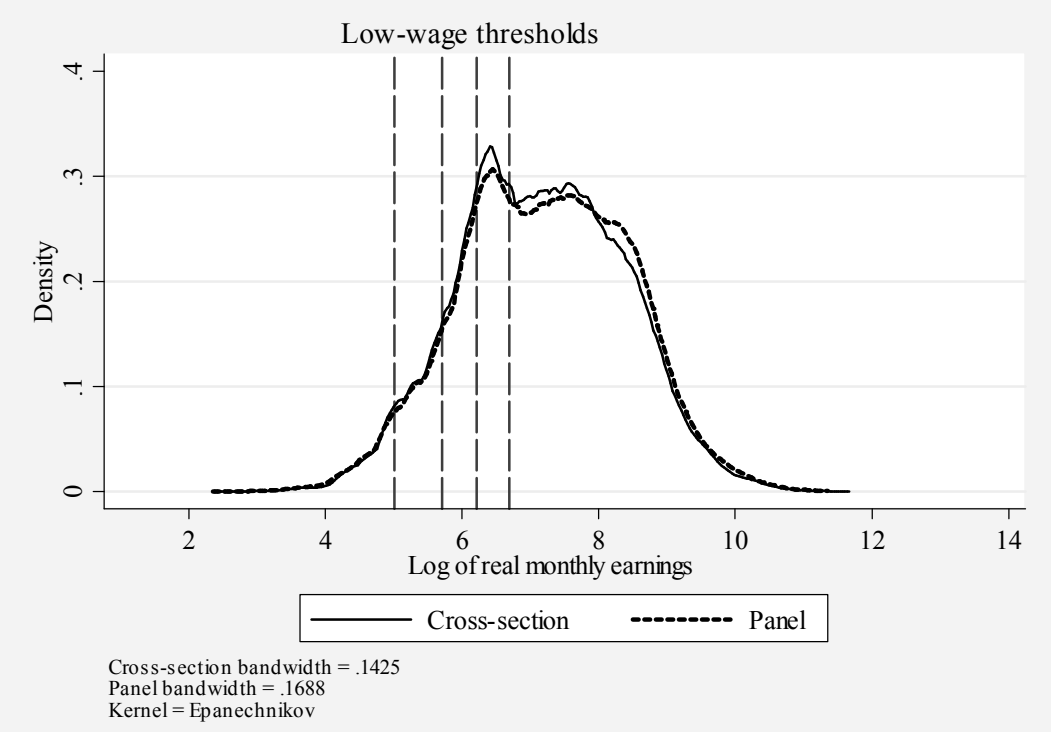
Notes: (i) Individuals aged 15 and older; (ii) To be included in the panel, an individual must be interviewed in at least two waves; (iii) Standard deviations in parentheses

However, Table 3 also illustrates that the first and last waves of the panel subsamples exhibit very similar characteristics to their parent LFS cross-sections, suggesting that attrition is unlikely to be a major concern. A few differences can be noted: individuals who are economically inactive are slightly over-represented in the panel compared to the cross-sections, suggesting unsurprisingly that they are less likely to leave the dwelling place than economically active individuals. The panel subsamples do not appear to be systematically more educated, or more likely to work in the formal sector or in larger firms than the cross-sections, all of which would be indicative of greater labour market attachment. However, workers in skilled occupations are over-represented in the panel, while occupations such as domestic work and agricultural wage employment are under-represented. This suggests that panel attrition may have some effect on the occupational structure of the sample, which may lead to under-estimation of rates of working poverty, and may affect the estimation of low-pay transitions.

Although this paper will not test formally for attrition, it will deal with this issue by allowing for the sensitivity of transition estimates to the definition of the sample. The study will considering transitions for two main estimation samples: (i) those workers who maintain employment between waves and (ii) including also those individuals who exit or enter employment. In addition, the paper will show that the transition probabilities are similar when considering individuals who appear only in consecutive waves of the panel, or including individuals who are absent for one or more waves between appearances.

Another way of assessing the randomness of attrition from the panel is in terms of the distribution of earnings. Figure 2 compares kernel density plots of the distribution of the log of real earnings for March 2004 from the LFS cross-section and the corresponding panel wave (wave six). Up to the R500 threshold, the distributions are virtually indistinguishable. However, a slightly smaller portion of respondents in the panel earn somewhat above R500 per month than do so in the cross-section, and again between and R800 and approximately R3000 per month, while the reverse is true at the upper end of the distribution. However, these differences between the kernel plots for the two datasets are small relative to the full distribution of earnings. The similarity between the distributions does not rule out the possibility that more geographically mobile individuals, who attrite from the panel, are replaced by individuals with a similar distribution of earnings but who differ in terms of other important (observable or unobservable) characteristics. However, it does suggest that panel attrition is less of a concern that it would be in a case where the distribution of earnings amongst low-wage workers differed substantially between the cross-section and the panel.

Figure 2. Kernel density plots of the natural logarithm of real monthly earnings, March 2004 LFS cross-section and panel wave six

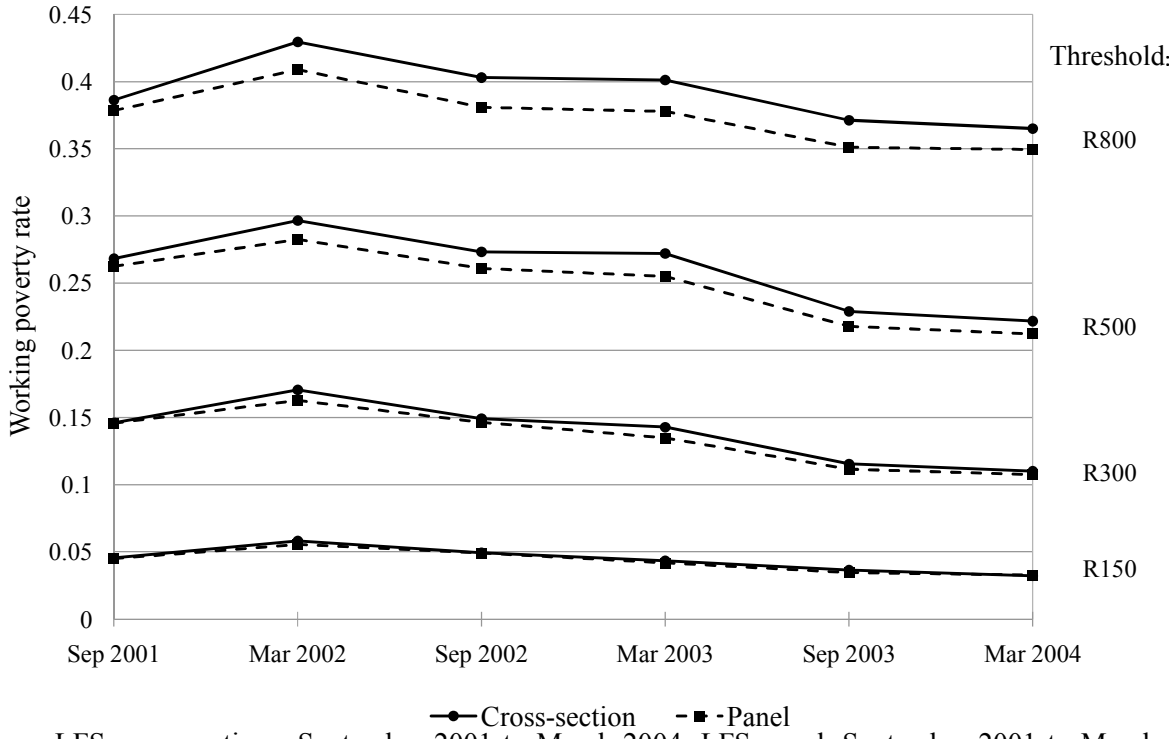


Source: LFS cross-section, March 2004; LFS panel, March 2004

Notes: (i) Earnings are measured in real 2000 prices; (ii) Density estimates are shown for the first imputed dataset for each data source; (iii) The low-wage thresholds are R150, R300, R500 and R800 per month respectively

In terms of estimates of low-wage work, a comparison of each wave of the panel to its corresponding LFS cross-section produces similar estimates of working poverty rates, as shown in Figure 3. Rates of low-wage work estimated from the cross-sections are typically slightly larger than from the panel across all waves, indicating that low-wage workers are somewhat under-represented in the panel. However, the trend in poverty amongst the employed is consistent for both datasets: working poverty declines at all poverty lines used, and the proportional decline is largest at the lowest poverty line, suggesting that the greatest improvements occurred amongst workers located at the very bottom of the earnings distribution. Although the panel under-estimates the poverty rate compared to the cross-sections, by an average of four percent, this underestimation does not increase substantially over time. Non-random attrition amongst low-earning workers thus does not appear to be a sizeable problem in the LFS panel.

Figure 3. Working poverty rates in the LFS panel waves and corresponding cross-sections



Source: LFS cross-sections, September 2001 to March 2004; LFS panel, September 2001 to March 2004

Notes: (i) Poverty thresholds measured in real 2000 prices; (ii) All estimates are at the level of the sample

4. Transitions between labour market states

The remainder of the paper focuses exclusively on the panel, and examines the extent and nature of transitions between labour market states and earnings levels. An analysis of earnings mobility which focuses purely on those who maintain employment implicitly ignores any movements into and out of employment. This focus would have a neutral effect on transition probabilities only if workers in all parts of the earnings distribution are equally at risk of unemployment, or equally likely to exit the labour force. However, if low-paid workers are more vulnerable to unemployment, such a focus would tend to overstate the stability of the earnings distribution. Therefore, this section examines transitions between labour market states, and the extent of vulnerability to unemployment amongst low-wage workers.

Individuals are classified here into eight categories. The first five categories consist of earnings categories for the employed, depending on whether monthly earnings are less than R150, R150 to R299, R300 to R499, R500 to R799, or R800 or more, in real 2000 terms. The final three categories consist of non-employment states, namely individuals who are unemployed (according to the strict definition), discouraged work-seekers (those individuals who would additionally be classified as unemployed according to the broad definition) and

the economically inactive. Table 4 illustrates aggregate transition probabilities amongst these eight categories, by comparing individuals' current and previous appearance in the panel[6]. Each cell value represents the conditional probability that an individual finds themselves in the specified column category in period t, given that they were in the specified row category in period t-1. Values in the cells on the downward diagonal indicate the probability that an individual remains in the same category between two appearances in the panel.

Less than 37 percent of individuals in wave t-1 are employed. Almost 40 percent are economically inactive, while the remaining 24 percent fall under the broad definition of unemployment. Examining the earnings categories first, there is a large degree of persistence in earnings above R800 per month (meaning that individuals remain in the same earnings category between two waves), but a large amount of mobility from all of the earnings categories below this level. The degree of permanence of earnings increases consistently as the level of earnings increases, from 15 percent in the lowest earnings category to 35 percent amongst those earning R500 to R799 per month. Consistent with the cross-sectional evidence of a rightward shift of the earnings distribution over time, there is substantially more evidence of upward earnings mobility than downward mobility. For example, workers in all of the earnings categories between R150 and R799 are more likely to experience transitions into any of the higher earnings categories than they are to move into any of the lower earnings categories[7].

However, most transitions for low-wage workers are not into higher earnings categories, but rather into non-employment. Thus it appears that, in addition to being lower paid, employment is also more precarious for the working poor than for higher-earning workers. More than half of all adults who earn less than R150 in one period are no longer employed in the subsequent period, while the same is true for almost a quarter of those earning R500 to R799. In contrast, only 12 percent of those earning more than R800 in one period are no longer employed in the subsequent period. While a substantial proportion of individuals exit the labour force altogether, particularly from the lowest earnings category, transitions into unemployment are also common, and low-earning workers are more vulnerable than non-poor workers. In particular, workers earning less than R800 per month are more than twice as likely to move into either of the two unemployment categories in the subsequent period as non-poor workers. Transitions into employment are uncommon, from any of the three non-employment states. However, individuals who do make such transitions are more likely to find themselves in jobs that pay less than R800 per month, than in higher-paying jobs. Overall, there is thus evidence of substantial churning in the low-earning part of the labour market: low-wage work is more often a transitional state between periods of unemployment or economic inactivity than it is a platform into better-paid employment.

[6] These appearances do not necessarily need to be in inconsecutive waves i.e. t-1 is the previous occasion on which the individual was interviewed.

[7] Limiting the sample to individuals who appear in consecutive waves (estimates not shown here) reduces the sample size from 80774 to 70458 and slightly increases the degree of persistence across all categories. However, the general conclusions remain the same.

Table 4. Aggregate transition probabilities for all individuals aged 15 and older

		t									
		<R150	R150-R299	R300-R499	R500-R799	At least R800	Searching unemployed	Non-searching	Inactive	Total	% of t-1
t-1	<R150	**15.03**	13.58	7.87	5.24	5.64	11.89	11.53	29.23	100	1.69
	R150-R299	6.09	**24.84**	14.05	6.95	7.63	12.04	10.47	17.95	100	3.49
	R300-R499	3.24	10.10	**29.46**	15.91	11.95	10.18	6.85	12.32	100	4.19
	R500-R799	1.66	4.31	11.53	**34.50**	23.18	10.28	5.86	8.69	100	4.47
	At least R800	0.35	1.06	2.10	4.25	**80.12**	5.07	2.15	4.92	100	22.75
	Searching	1.56	3.13	3.17	3.56	8.86	**46.38**	19.45	13.89	100	14.72
	Non-searching	1.94	3.28	3.11	2.72	4.92	28.13	**34.84**	21.06	100	9.65
	Inactive	1.08	1.51	1.20	0.91	2.42	6.61	6.62	**79.64**	100	39.05

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 80774; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals who appear in at least two (not necessarily consecutive) waves

However, it does not appear that churning in the labour market alone is sufficient to account for the decline in low-wage work over time. If the lowest earning workers left employment between waves, and were either not replaced or replaced by better-quality workers, this would result in a decline in the prevalence of low-wage work. However, we would then expect to see a substantial improvement in average worker characteristics over time, which is not evident from Table 3. Thus the greater precariousness of low-wage work does not solely explain the decline in working poverty over time, and other contributory factors must also exist.

Tables 5 and 6 present the transition estimates disaggregated by gender. Females in wave t-1 are substantially more likely than males to be economically inactive, and slightly more likely to be unemployed. Amongst the employed, females are over-represented amongst the low-wage categories, and under-represented amongst workers earning at least R800 per month. In addition, there is more persistence in the three lowest earnings categories amongst females than males, and females are less likely to be upwardly mobile, from any initial earnings category. This suggests that low-wage traps are more evident amongst women, which has negative long-term welfare implications. However, the extent to which employment is precarious does not appear to differ by gender, as the probability of becoming unemployed in the next period is at most one percentage point higher amongst females than amongst males.

5. Earnings mobility and transition probabilities amongst the employed

Having considered the extent of labour market churning, the remainder of the paper assesses earnings mobility amongst the employed, and considers who (if any) among the working poor is upwardly mobile. The transition matrices presented in this section are thus conditional on individuals being employed in at least two waves of the panel. In order to take labour market churning and panel attrition into account, transitions are discussed for both the subsample where individuals are employed in two consecutive waves, and where the waves are non-consecutive (where individuals were either not interviewed, or were not employed, in the intervening wave/s).

Before proceeding to examine transitions between the low-wage threshold categories, the extent of mobility across the full earnings distribution is presented in Tables 7 and 8. Here, workers are classified according to their relative position within each wave's earnings distribution, and their mobility between the deciles of the distribution is examined. Restricting the analysis to individuals who are employed in consecutive waves of the panel, Table 7 examines 22 619 individuals. The degree of persistence of earnings ranges from 30 percent in decile six to 58 percent in the top decile. Other than the top decile, the highest rates of persistence in earnings are in the lowest two deciles, and workers in the second decile are more likely to move down into the first decile than up into the third decile. In general, workers in the bottom half of the distribution have roughly equal likelihoods of moving up or down by one decile. The highest levels of mobility are from the fifth to eighth deciles, although movement by more than one decile remains rare. However, this is unsurprising as it

Table 5. Aggregate transition probabilities for all males aged 15 and older

		t									
		<R150	R150-R299	R300-R499	R500-R799	At least R800	Searching unemployed	Non-searching	Inactive	Total	% of t-1
t-1	<R150	**11.83**	12.32	9.22	5.45	8.58	12.03	10.42	30.16	100	1.18
	R150-R299	5.05	**21.53**	15.01	9.00	10.94	13.08	9.46	15.93	100	2.78
	R300-R499	2.46	8.42	**28.51**	17.55	15.96	11.11	6.19	9.80	100	3.86
	R500-R799	1.27	3.45	10.08	**35.43**	26.04	11.61	4.96	7.15	100	4.96
	At least R800	0.33	0.93	1.88	4.14	**81.52**	5.46	1.96	3.78	100	30.56
	Searching	1.17	2.65	2.99	4.16	12.32	**47.96**	16.97	11.79	100	14.86
	Non-searching	1.56	2.78	3.14	3.51	8.15	31.25	**31.31**	18.31	100	7.53
	Inactive	0.88	1.19	0.98	0.96	2.87	6.76	5.42	**80.95**	100	34.27

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 36834; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals who appear in at least two (not necessarily consecutive) waves

Table 6. Aggregate transition probabilities for all females aged 15 and older

		t									
		<R150	R150-R299	R300-R499	R500-R799	At least R800	Searching unemployed	Non-searching	Inactive	Total	% of t-1
t-1	<R150	**16.48**	14.15	7.26	5.14	4.32	11.82	12.03	28.80	100	2.12
	R150-R299	6.66	**26.68**	13.51	5.80	5.78	11.46	11.03	19.07	100	4.07
	R300-R499	3.78	11.29	**30.13**	14.75	9.11	9.51	7.31	14.11	100	4.45
	R500-R799	2.04	5.17	12.97	**33.56**	20.33	8.94	6.76	10.23	100	4.06
	At least R800	0.38	1.25	2.42	4.40	**77.98**	4.46	2.44	6.67	100	16.37
	Searching	1.88	3.54	3.33	3.05	5.98	**45.07**	21.51	15.64	100	14.60
	Non-searching	2.15	3.55	3.10	2.29	3.17	26.44	**36.75**	22.55	100	11.39
	Inactive	1.21	1.73	1.35	0.88	2.13	6.51	7.41	**78.80**	100	42.95

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 43940; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals who appear in at least two (not necessarily consecutive) waves

would constitute quite a large change in earnings in a six month period. By including individuals who are not employed or are absent from the panel for one or more waves, such that some comparisons are across a period of longer than six months, shown in Table 8, the observed degree of persistence slightly decreases. However, the general conclusions remain otherwise unchanged.

Table 7. Aggregate transitions between earnings deciles, employed in consecutive waves

		t										
		1	2	3	4	5	6	7	8	9	10	Total
t-1	1	**48.84**	23.29	11.03	6.43	4.85	2.28	1.63	0.85	0.40	0.40	100
	2	20.30	**43.14**	17.05	7.99	4.79	2.68	1.78	1.15	0.77	0.37	100
	3	8.82	18.09	**37.93**	18.45	7.01	4.08	2.71	1.40	1.05	0.47	100
	4	5.45	7.92	16.77	**37.84**	15.13	7.28	4.58	2.52	1.29	1.23	100
	5	2.87	4.62	6.34	16.75	**32.15**	16.97	10.89	5.08	2.68	1.65	100
	6	1.52	2.26	2.98	7.34	18.58	**30.89**	20.37	8.98	4.55	2.53	100
	7	1.39	1.39	1.75	4.07	9.33	19.68	**31.44**	17.31	9.13	4.50	100
	8	0.64	0.87	1.28	2.33	4.48	8.10	18.70	**32.56**	21.52	9.53	100
	9	0.19	0.50	0.72	1.12	2.08	3.37	8.43	22.30	**41.74**	19.56	100
	10	0.11	0.33	0.35	0.98	1.31	2.10	4.98	9.66	22.42	**57.75**	100

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 22619; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in at least two consecutive waves

Table 8. Aggregate transitions between earnings deciles, employed in at least two waves

		t										
		1	2	3	4	5	6	7	8	9	10	Total
t-1	1	**48.62**	23.15	11.03	6.61	4.84	2.27	1.80	0.90	0.45	0.34	100
	2	21.05	**41.77**	17.41	8.30	4.87	2.59	1.75	1.14	0.75	0.39	100
	3	10.08	18.97	**36.12**	17.88	7.20	4.06	2.80	1.38	1.01	0.48	100
	4	6.05	8.47	17.05	**35.83**	15.26	7.80	4.68	2.36	1.35	1.15	100
	5	3.23	5.40	6.65	17.40	**29.97**	17.03	11.15	5.02	2.59	1.55	100
	6	1.88	2.65	3.46	7.84	18.44	**29.86**	20.11	8.73	4.51	2.54	100
	7	1.45	1.66	2.03	4.50	9.83	20.08	**30.50**	16.55	8.93	4.47	100
	8	0.79	0.99	1.30	2.49	4.70	8.43	18.93	**31.15**	21.36	9.88	100
	9	0.28	0.65	0.79	1.36	2.22	3.68	8.49	22.11	**40.56**	19.86	100
	10	0.22	0.39	0.35	1.20	1.44	2.36	5.07	9.80	22.57	**56.60**	100

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 27475; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in at least two (not necessarily consecutive) waves

However, comparing mobility across deciles does not take into account the fact that the overall distribution of real earnings improves over time, such that each decile represents a better level of earnings in later waves than in earlier ones. Therefore, the remainder of this section considers transitions between earnings categories rather than deciles, and focuses once again on the lower end of the distribution. In order to standardise comparisons across six-month periods, the analysis presented here is conditional on individuals being employed in at least two consecutive waves of the panel.

In contrast to the decile analysis, in which earnings persistence declines as the level of earnings increases, until the sixth decile, Table 9 indicates that persistence increases, and transitions between the low-wage categories become less likely, as the low-wage threshold increases. However, this apparent contradiction is consistent with the changes in the overall distribution of earnings illustrated in Section 3. When the earnings distribution shifts to the right, a worker whose earnings improve in absolute terms may experience a transition into the next earnings category, while remaining within the same decile in terms of the relative distribution. The largest improvement in earnings between September 2001 and March 2004 occurred at the very bottom of the distribution, thus this is also where the differences in transition probabilities between the decile and earnings category analysis are most apparent.

Table 9. Aggregate transition probabilities between wage categories for all employed

		t						
		<R150	R150-R299	R300-R499	R500-R799	R800+	Total	% of t-1
t-1	<R150	**32.64**	28.56	17.28	10.48	11.05	100	2.78
	R150-R299	10.81	**43.33**	22.84	10.76	12.26	100	7.00
	R300-R499	4.84	14.53	**42.70**	21.15	16.79	100	9.96
	R500-R799	2.30	5.93	15.41	**46.57**	29.80	100	11.56
	At least R800	0.38	1.16	2.28	4.73	**91.45**	100	68.70

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 22619; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in at least two consecutive waves

The transition probabilities indicate that less than one third of workers who earn below R150 per month in one period remain in the lowest earnings category six months later; in contrast, 47 percent of those who earn R500-R799 per month remain in this category. In contrast to the decile analysis, workers are substantially more likely to experience upward than downward earnings mobility when examining the wage categories. This is to be expected given the general improvements in earnings in the lower tail of the distribution that were indicated by cross-sectional analysis, but which were obscured in the decile analysis. All four categories of low-wage workers have more than a 20 percent probability of moving up the distribution by one category, while 11 percent of even the lowest-earning workers move into the non-poor category (earnings of at least R800) by the next period. In addition, there is strong evidence of earnings stability for non-poor workers: 91 percent of workers earning R800 or more will continue to do so in the subsequent period.

However, there is more evidence of working poverty traps amongst female workers than amongst male workers, as shown in Table 10. In comparison to males, females experience considerably more earnings persistence, particularly in the lowest two categories, and are more likely to move down the earnings distribution. In particular, while only 25 percent of males who earn less than R150 continue to do so in the following wave, the same is true of 36 percent of females. While upward mobility remains more common than downward mobility for both genders, females have a three to five percentage point higher likelihood of moving down by one category, from any earnings value between R150 and R799, than males. In

terms of escaping from low-wage work, males are up to twice as likely as females to move above R800 per month, from any lower category.

Table 10. Aggregate transition probabilities between wage categories for all employed, by gender

		t						
		<R150	R150-R299	R300-R499	R500-R799	R800+	Total	% of t-1
	Males:							
	<R150	**25.42**	26.40	20.46	10.93	16.80	100	1.52
	R150-R299	8.72	**37.21**	23.26	13.13	17.68	100	4.58
t-1	R300-R499	3.60	11.84	**40.81**	21.89	21.87	100	7.64
	R500-R799	1.77	4.67	13.20	**47.81**	32.56	100	10.55
	At least R800	0.38	1.04	1.99	4.52	**92.07**	100	75.72
	Females:							
	<R150	**35.70**	29.47	15.93	10.29	8.60	100	4.30
	R150-R299	11.97	**46.74**	22.61	9.44	9.24	100	9.92
t-1	R300-R499	5.74	16.47	**44.06**	20.61	13.12	100	12.76
	R500-R799	2.83	7.19	17.61	**45.33**	27.05	100	12.79
	At least R800	0.38	1.35	2.72	5.05	**90.51**	100	60.23

Source: LFS panel, September 2001 to March 2004

Notes: (i) Males N = 12341; Females N = 10278; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in at least two consecutive waves

The remainder of the paper examines the relationship between earnings mobility and several of its likely correlates.

(a) Education

As expected, education increases not only a worker's level of earnings at a given time, but also the likelihood of upward earnings mobility over time, as illustrated in Table 11. The degree of persistence of low earnings decreases consistently with the level of education. Workers without secondary education (less than grade eight) are more likely to remain in an earnings category, or to move into a lower category, than those with some secondary education (grades eight to 11). Even amongst workers without any secondary education, however, upwards earnings mobility is more likely than downward mobility. Education is nonetheless a predictor of mobility: regardless of their initial earnings, workers with some secondary education have a roughly ten percentage point higher probability of moving into the highest earnings category in the next period than those without secondary education.

For workers who have completed high school, the benefits are even greater. Less than nine percent of the sample of workers with at least a matric education earn less than R800 per month in the initial period, and at least one third of these workers move into the highest earnings category in the subsequent period. The high rates of transition into the top earnings category, for workers with at least some secondary education, is consistent with the notion that, for well-educated individuals, low-earning work may act as a stepping stone into better quality employment, perhaps by allowing the individual concerned to gain experience or to form networks.

Table 11. Aggregate transition probabilities between wage categories for all employed, by highest level of education completed

		t						
		<R150	R150-R299	R300-R499	R500-R799	R800+	Total	% of t-1
	Up to grade 7:							
	<R150	**37.09**	30.45	17.12	9.19	6.14	100	6.50
	R150-R299	11.64	**48.07**	22.71	9.90	7.69	100	15.93
t-1	R300-R499	5.62	16.61	**46.94**	20.61	10.23	100	20.18
	R500-R799	2.78	6.27	17.15	**52.92**	20.88	100	19.86
	At least R800	1.01	3.09	5.60	10.36	**79.93**	100	37.53
	Grade 8 – 11:							
	<R150	**25.71**	27.14	17.81	13.03	16.31	100	2.41
	R150-R299	10.14	**38.36**	23.11	12.10	16.29	100	6.17
t-1	R300-R499	4.24	12.99	**38.90**	22.14	21.73	100	10.01
	R500-R799	2.00	5.87	14.62	**43.70**	33.82	100	13.75
	At least R800	0.45	1.39	2.70	6.45	**89.01**	100	67.67
	At least matric:							
	<R150	**20.39**	17.14	16.62	11.87	33.98	100	0.50
	R150-R299	6.91	**25.45**	22.95	12.57	32.12	100	1.50
t-1	R300-R499	2.77	8.76	**32.95**	20.88	34.64	100	2.82
	R500-R799	1.50	4.91	11.60	**32.82**	49.17	100	3.96
	At least R800	0.15	0.47	1.06	2.05	**96.26**	100	91.22

Source: LFS panel, September 2001 to March 2004

Notes: (i) Up to grade 7 N = 6810; Grade 8 – 11 N = 7784; At least matric N = 9363; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in at least two consecutive waves

(b) Employment type

In the LFS cross-sections, on aggregate, greater declines in working poverty occur amongst wage-employed workers and those working in the formal sector[8], compared to their counterparts in self-employment and in the informal sector. This is consistent with improvements in labour legislation, and particularly the 2002 amendment to the BCEA, which offers protection for wage-employed and formal sector workers, although it is not possible to attribute improvements directly to this legislation. Longitudinal analysis conducted here shows that the benefits to wage-employed and formal sector workers also accrue at the individual level.

There is relatively little movement between these employment types: 20 percent of workers in the informal sector move into the formal sector in the subsequent period, although only six percent of workers move in the opposite direction. 15 percent of self-employed workers move into wage employment in the subsequent period, and just three percent of workers move in the opposite direction. Amongst workers who remain in one type of employment, the benefits of formal sector employment are apparent from Table 12, in terms of both higher earnings and greater upward mobility. Amongst those workers who remain in the formal sector, 95 percent earn at least R800 in the initial period. In addition, more than 20 percent of

[8] Individuals are defined as working in the formal sector either through self-identification, or if the enterprise is a registered company or registered for VAT.

the small number of formal sector workers in each earnings category below R800 earn at least R800 in the following period.

Table 12. Aggregate transition probabilities between wage categories for all employed, by formal or informal sector

		t						
		<R150	R150-R299	R300-R499	R500-R799	R800+	Total	% of t-1
	Formal:							
	<R150	**19.17**	18.18	12.65	14.27	35.73	100	0.42
	R150-R299	2.50	**38.02**	23.86	13.76	21.86	100	2.03
t-1	R300-R499	0.72	7.55	**45.22**	25.03	21.48	100	5.43
	R500-R799	0.54	2.27	12.05	**50.38**	34.77	100	9.20
	At least R800	0.13	0.53	1.21	3.46	**94.67**	100	82.92
	Informal:							
	<R150	**35.98**	31.06	17.35	8.79	6.82	100	11.73
	R150-R299	14.17	**46.30**	22.34	9.30	7.90	100	24.85
t-1	R300-R499	8.63	21.20	**41.23**	18.08	10.87	100	25.64
	R500-R799	5.30	12.45	22.48	**39.80**	19.97	100	17.92
	At least R800	3.68	8.96	15.18	17.84	**54.34**	100	19.87

Source: LFS panel, September 2001 to March 2004

Notes: (i) Formal sector N = 16389; Informal sector N = 4766; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in the same sector in at least two consecutive waves

In contrast, earnings are far more precarious in the informal sector. Here, half of all workers earn between R150 and R499 in the initial comparison period. Only 20 percent of all informal sector workers earn at least R800 in the initial period, and only 54 percent of such workers maintain these earnings into the next period. Workers earning between R300 and R799 in the informal sector are more likely to have their earnings decline than rise over a six month period. However, there is some evidence in the panel that informal sector work may provide future access to better pay: workers who are able to move from the informal to the formal sector (not shown in Table 12) are more likely to experience upward earnings mobility between subsequent waves than workers who remain in either sector.

The benefits of wage employment, relative to self-employment, appear similar to those of formal sector work, which is unsurprising since 93 percent of formal sector workers in the LFS panel are wage-employed. Shown in Table 13, wage-employed workers experience high levels of earnings stability, and most transitions are upwards by one wage category. In contrast, earnings in the initial period for the self-employed are more widely distributed across the low-wage categories than for the wage-employed. The earnings of self-employed workers are also unstable: there is a high likelihood of transition from each low-wage category to almost any other category. Downward wage mobility is considerably more common amongst the self-employed than amongst the wage-employed.

Table 13. Aggregate transition probabilities between wage categories for all employed, by wage- or self-employment

		t						
		<R150	R150-R299	R300-R499	R500-R799	R800+	Total	% of t-1
	Wage-employed:							
	<R150	**37.66**	27.05	13.80	9.37	12.13	100	0.42
	R150-R299	6.29	**49.21**	24.51	9.20	10.79	100	2.03
t-1	R300-R499	2.24	11.87	**48.84**	22.74	14.31	100	5.43
	R500-R799	0.96	3.74	14.55	**51.73**	29.03	100	9.20
	At least R800	0.20	0.77	1.62	4.45	**92.96**	100	82.92
	Self-employed:							
	<R150	**29.47**	30.35	20.61	10.78	8.79	100	11.73
	R150-R299	19.08	**33.68**	19.73	13.67	13.84	100	24.85
t-1	R300-R499	13.25	25.28	**24.01**	16.52	20.94	100	25.64
	R500-R799	9.44	18.71	20.53	**19.48**	31.84	100	17.92
	At least R800	1.52	3.46	6.18	6.09	**82.75**	100	19.87

Source: LFS panel, September 2001 to March 2004

Notes: (i) Wage-employed N = 18378; Self-employed N = 3330; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals in the same employment type in at least two consecutive waves

(c) Occupation

Accompanying the 2002 amendment to the BCEA, the Department of Labour issued sectoral determinations, which set out minimum wages and working conditions for vulnerable sectors of the workforce (Department of Labour, 2002a and 2002b). Although sectoral determinations are applicable to workers in a wide range of sectors, they would be expected to have a particularly large impact on domestic workers and agricultural wage workers, since these workers were initially especially vulnerable to low pay and exploitative working conditions. Indeed, it has been shown at a cross-sectional level that monthly wages for domestic workers increased by 15 percent in the two years following the implementation of the sectoral determination, although employment levels fell somewhat (Hertz, 2005). The final part of this paper therefore examines transition probabilities and wage mobility amongst these two types of workers, in order to assess whether any improvements can be observed that are particular to these specific types of workers.

The sectoral determination for domestic workers took effect from 1 November 2002, and was thus in force for the fourth, fifth and sixth waves of the LFS panel. However, the sectoral determination for farm workers took effect only from effect from 1 March 2003, and thus the minimum wages that it sets out may not yet have affected the earnings reported by farm workers during the fourth wave of the LFS panel, which was conducted during March 2003. The minimum wages applicable as a result of this legislation are detailed in Table 14. Comparing the minimum wages to the low-wage thresholds used in this study, full-time workers should have earnings within at least the R500-R799 category, although part-time workers may earn less.

Table 14. Applicable monthly minimum wages in Rands, by occupational sector

	March and September 2003	March 2004
Domestic workers:[(ii)]		
Urban areas	432-655	460-696
Rural areas	351-535	373-565
Farm workers:		
Urban areas	655	704
Rural areas	532	576

Source: Department of Labour (2002a and 2002b)

Notes: (i) Minimum wages expressed in Rands per month in real 2000 prices; (ii) The upper end of the range is applicable to those who work at least 27 hours per week. The lower end is the monthly minimum wage applicable to those who work 27 hours per week. Domestic workers who work fewer than 27 hours must be paid at the same hourly rate, but will be paid less per month.

At the time of the implementation of the sectoral determinations, an employer who was previously paying this type of worker less than the newly-implemented minimum wages was faced with three possible responses: continue to pay the same, now-illegal, wage; pay at least the prescribed minimum wage; or dismiss the worker. This section therefore examines these possibilities by considering individuals who were employed as either a domestic or agricultural wage worker in the initial period, and estimates their transition probabilities amongst the low-wage categories or to states of non-employment.

Table 15 indicates that domestic and farm workers[9] earn substantially less than other workers, with a much higher proportion of such workers falling into all of the low-wage categories. Indeed, almost 30 percent of domestic and farm workers earn between R300 and R499 in the initial period. There are also much higher levels of low-wage persistence amongst domestic and agricultural wage workers than amongst the employed in general. While for the workforce at large, wage persistence is highest for non-poor workers, domestic and farm workers experience the highest degree of persistence if they earn between R500 and R799 per month. This is the earnings category which encompasses the minimum wage for these types of workers. However, domestic and farm workers who earn less than R500 are slightly more likely to move upwards by one earnings category than are all of the employed. Domestic and farm workers in the lowest two earnings categories are no more likely to become unemployed than workers in general, while higher-earning domestic and farm workers are substantially less likely to become unemployed than the workforce as a whole.

In addition, some individuals who are domestic or farm workers in one period may retain employment while moving to a different occupation in the subsequent period, which is accounted for in Table 16. Indeed, at least ten percent of domestic or farm workers who earn less than R800 change to a different occupation in the subsequent period, while the same is true of more than 20 percent of workers above the low-wage threshold. Earnings persistence is highest amongst workers earning R500 to R799, while less than 40 percent of domestic or

[9] Domestic and agricultural wage workers are presented here as one category, as disaggregating the two types of workers produces very small sample sizes in some categories. Similar patterns to those described above are observed for both types of worker, although, in general, domestic workers earn somewhat less than farm workers.

Table 15. Aggregate transition probabilities for all employed in period t-1, by occupation

		t									
		<R150	R150-R299	R300-R499	R500-R799	At least R800	Searching unemployed	Non-searching	Inactive	Total	% of t-1
	All workers:										
	<R150	**15.70**	13.74	8.32	5.04	5.32	12.38	11.26	28.25	100	4.67
	R150-R299	6.55	**26.27**	13.85	6.53	7.44	12.01	9.96	17.40	100	9.33
t-1	R300-R499	3.46	10.39	**30.53**	15.12	12.01	10.30	6.56	11.62	100	11.25
	R500-R799	1.75	4.51	11.72	**35.42**	22.67	10.20	5.68	8.06	100	12.28
	At least R800	0.34	1.03	2.02	4.20	**81.26**	4.72	1.99	4.43	100	62.47
	Domestic and agricultural wage workers:										
	<R150	**25.33**	14.12	5.16	3.33	1.41	12.89	10.68	27.08	100	9.43
	R150-R299	4.98	**39.18**	16.09	4.63	1.96	10.75	9.54	12.88	100	23.70
t-1	R300-R499	2.21	11.25	**43.96**	18.48	3.61	7.78	4.56	8.16	100	29.52
	R500-R799	0.64	3.26	14.91	**54.51**	10.59	5.46	4.95	5.68	100	26.32
	At least R800	0.90	3.16	7.94	22.11	**49.13**	5.02	4.51	7.22	100	11.02

Source: LFS panel, September 2001 to March 2004

Notes: (i) All workers N = 29273; Domestic and agricultural wage workers N = 4080; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in either domestic or agricultural work in period t-1and either domestic or agricultural work or non-employment in period t, in at least two consecutive waves

Table 16. Aggregate transitions for all domestic and agricultural wage workers in t-1

		t										
		<R150	R150-R299	R300-R499	R500-R799	At least R800	Other job type	Searching unemployed	Non-searching	Inactive	Total	% of t-1
	<R150	**22.79**	13.46	5.03	2.93	1.24	10.03	11.33	9.38	23.80	100	9.21
	R150-R299	4.60	**34.83**	14.79	4.17	1.77	11.25	9.27	8.22	11.10	100	23.60
t-1	R300-R499	2.04	10.20	**39.60**	16.81	3.20	10.20	6.82	3.99	7.15	100	28.92
	R500-R799	0.61	2.99	13.24	**48.23**	9.25	11.72	4.74	4.29	4.93	100	26.05
	At least R800	0.70	2.45	6.27	17.27	**38.63**	21.72	3.89	3.49	5.59	100	12.21

Source: LFS panel, September 2001 to March 2004

Notes: (i) N = 4827; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in either domestic or agricultural work in period t-1, and any activity in period t, in at least two consecutive waves

farm workers who are initially above the low-pay threshold are able to retain this employment and earnings status into the next period.

Finally, as a means of assessing whether any trends in transition probabilities can be identified, which might correlate with employers' adherence to the requirements of the sectoral determinations, Table 17 disaggregates the transition probabilities for domestic and farm workers by wave. Across all waves, workers earning less than R150 per month are more likely to exit employment than to move up the earnings distribution or into a different occupation. However, there is no consistent trend in the likelihood of moving to a different occupation, or of becoming unemployed, from any initial category, either across the period as a whole or after the implementation of the legislation. This suggests that employers did not respond to the implementation of the sectoral determinations by dismissing workers.

Although the sample sizes here are relatively small, there are some trends that nonetheless can be identified. The persistence of earnings in the first category declines substantially across time, from 36 percent between waves one and two, to 12 percent between waves five and six. Amongst those workers who start at the lowest earnings level, and who retain their occupation, there is an increase over time in the probability of upward mobility, initially into the second category up to wave four, and then into the third category from then onwards. In addition, the probability of an upward transition from the second into the third category also increases, from 11 percent to 19 percent, across the six waves. Conversely, the likelihood of downward earnings mobility declines across time for most earnings categories. Therefore, there is a clear improvement in earnings mobility over time for domestic and farm workers. However, although this improvement is observed amongst the types of workers who were affected by the sectoral determinations, it is not possible to attribute the improvement directly to the effects of the protective labour legislation, rather than to other general labour market trends. There is no evidence of a sharp change in transition probabilities in March 2003, when the sectoral determinations took effect.

6. Concluding comments

This paper examines wage mobility in South Africa over the period of the implementation of protective labour legislation. The paper examined three main questions, and came to the following general conclusions. First, what estimates can be made of the rate of low-paid work from South African data, and how has this rate changed over time? Using cross-sectional Labour Force Survey data, about 4.5 percent of workers earned less than R150 per month in September 2001 (in 2000 prices), while 38 percent earned less than R800. These rates of low-wage work fell substantially by March 2004, with the largest relative decline occurring at the bottom of the earnings distribution.

The second question was the extent to which transitions occur between labour market states, and whether low-wage workers are more vulnerability to unemployment than better paid workers. Turning to the use of panel data, most transitions for low-wage workers are shown

Table 17. Transitions for domestic and agricultural wage workers, by wave

		t										
		<R150	R150-R299	R300-R499	R500-R799	At least R800	Other job type	Searching unemployed	Non-searching	Inactive	Total	% of t-1
	Wave 1 to 2:											
	<R150	**35.87**	7.76	1.44	2.10	1.19	11.04	11.83	7.36	21.42	100	9.70
	R150-R299	7.71	**38.26**	10.74	3.12	1.41	11.49	9.23	7.61	10.43	100	25.29
t-1	R300-R499	3.44	12.97	**42.36**	12.05	1.97	13.89	5.80	2.73	4.79	100	30.36
	R500-R799	0.71	4.06	20.01	**43.75**	6.69	13.71	3.84	2.85	4.39	100	23.25
	At least R800	1.12	3.03	7.94	22.38	**31.65**	20.91	4.92	3.47	4.59	100	11.40
	Wave 2 to 3:											
	<R150	**24.10**	15.38	3.84	3.61	0.34	7.22	11.86	11.65	22.00	100	11.44
	R150-R299	3.57	**35.20**	15.86	3.18	1.81	8.57	8.62	10.28	12.92	100	27.20
t-1	R300-R499	1.78	10.60	**41.83**	15.34	2.23	6.62	7.90	5.21	8.49	100	29.16
	R500-R799	0.41	2.61	13.38	**45.95**	10.18	11.84	6.87	2.72	6.04	100	22.49
	At least R800	0.69	4.94	10.28	15.91	**36.63**	17.56	1.10	4.12	8.78	100	9.71
	Wave 3 to 4:											
	<R150	**16.62**	18.86	3.38	1.41	1.14	14.05	11.38	6.31	26.85	100	11.29
	R150-R299	2.98	**36.03**	12.95	4.99	2.85	11.19	9.97	6.73	12.29	100	24.51
t-1	R300-R499	2.37	9.97	**40.31**	16.19	4.57	9.64	6.94	3.69	6.33	100	28.83
	R500-R799	1.02	4.75	16.03	**49.80**	10.53	7.07	3.87	3.67	3.26	100	23.37
	At least R800	0.66	1.58	8.19	16.25	**40.82**	22.19	4.22	3.30	2.77	100	12.02
	Wave 4 to 5:											
	<R150	**17.60**	13.14	10.20	4.26	2.78	7.04	8.52	10.56	25.91	100	7.72
	R150-R299	4.01	**30.79**	17.03	6.23	0.68	15.12	9.07	7.90	9.19	100	23.17
t-1	R300-R499	1.33	7.84	**36.29**	23.97	2.66	8.88	6.31	4.63	8.09	100	28.99
	R500-R799	0.71	1.86	7.84	**52.97**	10.03	10.53	3.67	7.18	5.21	100	26.08
	At least R800	0.61	1.63	1.32	18.63	**42.77**	22.41	3.26	4.58	4.79	100	14.04
	Wave 5 to 6:											
	<R150	**12.23**	10.87	10.87	4.06	1.37	11.14	13.04	12.51	23.91	100	5.66
	R150-R299	4.08	**32.26**	19.39	3.72	2.44	10.14	9.87	8.06	10.05	100	16.98
t-1	R300-R499	0.91	8.91	**36.16**	17.48	5.26	11.76	7.31	3.77	8.45	100	26.94
	R500-R799	0.34	2.21	10.31	**48.70**	9.16	13.93	5.28	4.69	5.37	100	36.11
	At least R800	0.43	1.51	5.16	12.80	**40.75**	24.62	5.48	2.04	7.21	100	14.31

Source: LFS panel, September 2001 to March 2004

Notes: (i) N by wave: 1 to 2 = 1569; 2 to 3 = 1502; 3 to 4 = 1260; 4 to 5 = 1399; 5 to 6 = 1300; (ii) Earnings measured in real 2000 prices; (ii) Transitions for individuals employed in either domestic or agricultural work in period t-1, and any activity in period t

not to be into higher earnings categories, but rather into states of non-employment. Thus in addition to being lower paid, employment is also more precarious for the working poor than for higher-earning workers. Low-wage workers are more than twice as likely to become unemployed in the subsequent period as workers earning at least R800 per month.

The third question was about the extent of earnings mobility amongst the employed, and who (if any) among the working poor is upwardly mobile. While levels of earnings persistence between the six-monthly waves are fairly high, low-wage workers who maintain employment are found to be substantially more likely to experience upward than downward earnings mobility. However, upward mobility is less common, and there is some evidence of working poverty traps, amongst women, and amongst workers with less education or working in the informal sector. There is a clear improvement in earnings mobility over time for domestic and farm workers, although this cannot be causally attributed to the implementation of minimum wage determinations for these types of workers.

All of the transition analysis conducted in this paper took the form of aggregate transition matrices. It is also possible to conduct further analysis at a multivariate level, through the estimation of an econometric model for transition probabilities, conditional on the initial pay state. However, in general, the initial pay state (low-wage or high-wage) cannot be treated as exogenous, and thus the initial pay state and transition probability should be estimated jointly. This requires the identification of exclusion restrictions, which usually take the form of indicators of the worker's parental background (see, for example, Cappellari, 2000). Since the LFS panel does not include any parental or household characteristics whatsoever, it is not possible to identify exclusion restrictions using these data, and thus will not be possible to account for the endogeneity of the initial pay state.

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