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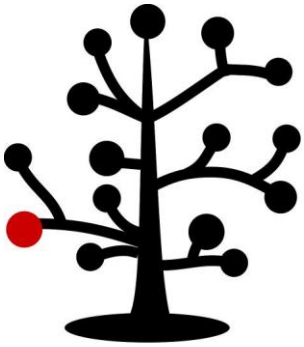

N.i.D.S.

NATIONAL INCOME DYNAMICS STUDY

Labour Market: Analysis of the NIDS Wave 1 and 2 Datasets

Discussion Paper 2012/1

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1. Introduction

This paper provides a brief summary of key labour market outcomes in Wave 2 of NIDS and also examines labour market transitions that occurred between Wave 1 and Wave 2. This corresponds approximately to changes between 2008 and 2010.[1] The primary purpose of this paper is to spur discussion of these initial findings and to encourage more detailed analytical work on the labour market using the NIDS data.

Most sections in this paper relate to the various sections in the labour module of the adult questionnaire. We also include a short section on labour market information obtained from the proxy questionnaires. All results are obtained using the post-stratification weights that correct for sample attrition, unless specified otherwise.

The remainder of this paper is structured as follows: Section 2 provides a description of key labour market outcomes using both a cross-sectional view and a longitudinal view made possible with panel data. Section 3 describes the analytical methods we use throughout this paper, introducing the augmented transition matrix. Section 4 takes a gendered view of the aggregate labour market transitions explored in Section 2. Section 5 examines industry and occupation transitions among workers who had regular employment in both periods. Section 6 assesses changes in earnings by transitions across types of employment, industry, and occupations. Section 7 relates to the unemployed and those outside the labour forces. It examines their search methods and reasons for remaining outside the labour force and relates them to current or past employment outcomes. Section 8 describes a few areas in the data that have problematic information in order to highlight these for those who plan to work on this data in the future and those reading analysis from NIDS. Section 9 assesses the robustness of employment status outcomes after incorporating information from the proxy questionnaires. Section 10 concludes with a discussion of what we have learned.

[1] A more detailed description of interview dates is available in the user documentation provided at www.nids.uct.ac.za. A considerable portion of Wave 2 interviews were actually conducted in 2011. Nonetheless, for convenience of exposition, we will refer to all of these as 2010 data and 2010 outcomes. Also, the months of interviews are not necessarily proportional across surveys. Thus, some labour market changes found in the data may be picking up seasonal effects.

2. Aggregate outcomes, trends and transitions

Section 3 will provide more details on the samples used in our study. For the following analysis, we begin by restricting attention to those who were 20 to 55 years old in 2008 and had successful interviews in both years.

2.1. Employment Status

Following NIDS Wave 1, we categorize each adult into one of four mutually exclusive categories (Ranchhod, 2009). 'Employed' is composed of people who are engaged in some type of productive activity, generally for the purpose of earning money. 'Searching unemployed' are people who are not employed, and have actively searched for employment in the past four weeks. 'Discouraged unemployed' are unemployed people who would have liked to have worked in the past four weeks, but have not actively searched for employment in that same time period. 'Not economically active' (NEA) are people who are not employed and do not want to find employment (for example, scholars/students, home-makers and the retired).

Table 1 shows the 2010 outcomes on the left hand side and the changes between 2008 and 2010 on the right hand side. In 2010, 32% of the panel group (who were 20 to 55 in 2008) were NEA. This represents a 9.8 percentage point increase from 2008. The trend is consistent across racial designations, excluding Indian/Asians who have a much smaller sample size. It is not driven exclusively by females, though their rate and change is considerably higher. It is not driven by retirement as the declines are observed across various age categories. The large increase in the percentage of individuals out of the labour force (i.e. NEA) is driven by a decline in the percentage employed and even greater declines in the percentages that are classified as unemployed under both narrow and broad definitions of unemployment. This combination leads to large declines in the unemployment rates. However, from the perspective of social well-being, we would prefer to see declines in unemployment being driven by increases in employment rather than these increases in the NEA.

Table 1. Employment Status: Levels and Changes from the cross-sectional view

	Percentage in each category in 2010							Change in Percentage between 2008 and 2010					
		i	ii	iii	iv	v	vi	i	ii	iii	iv	v	vi
			Unemployed			Unemp. Rate			Unemployed			Unemp. Rate	
	# of obs.	NEA	Disc.	Search	Employed	(Strict)	(Broad)	NEA	Disc.	Search	Employed	(Strict)	(Broad)
Aggregate	7 889	32.0	4.9	11.8	51.3	18.7	24.6	9.8	-1.6	-6.5	-1.7	-6.9	-7.3
African	6 383	33.7	5.3	13.2	47.8	21.7	28.0	10.5	-1.5	-7.4	-1.7	-7.8	-7.7
Coloured	1 143	27.7	4.4	8.1	59.8	11.9	17.3	11.4	-3.6	-3.2	-4.7	-3.0	-5.7
Indian	96	24.4	6.7	8.4	60.4	12.3	20.1	-0.8	1.9	2.0	-3.1	3.0	5.0
White	267	21.2	0.4	2.8	75.6	3.6	4.1	4.4	-1.6	-2.2	-0.6	-2.6	-4.4
Male	2 573	22.3	3.9	10.4	63.3	14.1	18.5	7.1	-0.3	-4.6	-2.1	-4.6	-4.3
Female	4 616	39.4	5.7	13.0	41.9	23.7	30.8	12.3	-2.4	-7.7	-2.2	-8.2	-8.6
Age 20-25	1 824	35.7	6.3	18.4	39.6	31.8	38.5	3.3	-1.5	-6.3	4.5	-9.6	-9.7
Age 26-35	2 205	26.5	4.9	13.7	54.9	20.0	25.3	11.0	-1.9	-9.3	0.3	-9.7	-10.1
Age 36-45	2 072	28.4	3.9	8.6	59.1	12.6	17.5	12.2	-2.5	-4.6	-5.1	-4.4	-5.9
Age 46-55	1 788	41.4	4.4	5.0	49.2	9.3	16.1	12.5	0.1	-4.3	-8.3	-4.6	-3.0

Notes:

1. Sample restricted to adults aged 20 to 55 in 2008 who responded in both waves.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. NEA = Not Economically Active
4. Unemployment rates are calculated using conventional definitions.

Strict = (iii)/(iii+iv). Broad = (ii+iii)/(ii+iii+iv)

These changes do not entirely comport with changes reported in Stats SA's Labour Force Surveys. Therefore, we recommend that individuals do not make broad policy conclusions from these particular labour market outcomes. We will clarify these and any other data concerns clearly in Section 6. Fortunately, their problems still leave room for learning a large amount about the labour force in South Africa.

Table 1 provides a cross-sectional snapshot of changes for those individuals who reported their employment status in both 2008 and 2010 and were between 20 and 55 years old in 2008. We might refer to these individuals as "panel" members since they were in the survey in both 2008 and 2010. However, the analysis is cross-sectional since it does not make any use of the fact that the data from the same individual can be linked over time.

Table 2 provides a longitudinal view of the employment status changes using a transition matrix. Here, we are clearly taking advantage of the panel data by linking an individual's employment status in 2008 with their employment status in 2010. Each row sums to 100 %. Of those people who were NEA in 2008, 56.8% were NEA again when interviewed in 2010, while 6.1% were discouraged job-seekers, 15% were strictly unemployed, and 22% were employed. This matrix shows that the majority of those who were NEA in 2008, were NEA again in 2010. It is possible, that some of these individuals had been employed or willing to work at some point between 2008 and 2010.

Those who were discouraged job-seekers in 2008 had outcomes in 2010 that looked more like those of the searching unemployed than the NEA. This might be considered more circumstantial evidence in favour of Kingdon and Knight's (2004) assertions that the broad unemployment rate is the best measure in South Africa, though a more detailed analysis would be required to flesh this out.

Table 2 also demonstrates that, while NEA and employment categories might be considered *relatively* stable states, they are not overly stable. Just under thirty percent of those employed in 2008 were not employed in 2010 and over forty percent of those in NEA in 2008 were in the labour force in 2010.

Table 2. Employment Status, longitudinal perspective

Employment status in 2008	Employment status in 2010: NEA	Discouraged	Searching	Employed
NEA	56.8	6.1	15.0	22.0
Discouraged	43.1	10.8	18.1	28.0
Searching	39.7	6.5	21.6	32.3
Employed	18.5	3.2	6.7	71.6

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who responded in both waves.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. NEA = Not Economically Active.
4. Row percentages sum to 100 percent.

2.2. Employment Type

Table 3 provides a cross-sectional view of changes in the labour market outcomes among those who were employed in regular employment, self-employment or casual employment in both 2008 and 2010.[2] Among this panel of dual-employed, there was a shift out of self-employment and casual employment and into regular employment. The shift out of self-employment was strongest for females and for workers 46-55. Changes for those 20 to 25 are distinct, as individuals are leaving casual employment in much greater percentages. This is not unexpected if the young are finding their way into a more appropriate position within the labour market.

[2] Due to concerns about the ability to capture subsistence agriculture in 2010, we exclude those who were employed subsistence agriculture or helping others in 2008 or 2010. These categories represented approximately 8 % of employment in 2008 and 3 % of employment in 2010.

Table 3. Type of Employment: Levels and Changes from the cross-sectional view

		Percentage in each category in 2010			Change in Percentage between 2008 and 2010		
	# of obs.	i Regular Emp.	ii Self-emp.	iii Casual Emp.	i Regular Emp.	ii Self-emp.	iii Casual Emp.
Aggregate	3 452	81.1	11.7	7.2	6.4	-3.0	-3.4
African	2 574	80.3	11.1	8.6	7.7	-4.7	-3.1
Coloured	635	86.9	6.9	6.2	-0.6	3.9	-3.3
Indian	50	73.1	24.7	2.2	8.2	5.7	-13.9
White	193	83.6	16.1	0.4	3.2	-0.7	-2.5
Male	1 461	80.4	11.2	8.4	3.7	-0.6	-3.0
Female	1 653	80.5	13.4	6.1	8.1	-4.6	-3.5
Age 20-25	617	80.0	10.2	9.8	8.3	2.4	-10.7
Age 26-35	1 045	83.7	9.4	6.9	6.4	-3.5	-2.9
Age 36-45	1 072	80.9	13.4	5.7	4.5	-1.7	-2.8
Age 46-55	718	77.5	15.0	7.5	7.4	-6.9	-0.4

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were employed in regular, self-, or casual employment in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.

Table 4 gives us a dynamic view of transitions across types of employment. It is clear that casual employment is a transitory state, with just 13.7% of those who were casually employed in 2008 being casually employed in 2010. Self-employment is also much less stable than regular employment. Few people leave regular employment for self-employment or casual employment, but 27.6% of the self-employed and two-thirds of the casual employment in 2008 who had non-farm employment in 2010 were in regular employment in 2010. To the extent that the choice of their original type of employment was still available, this represents strong evidence for these individuals choosing regular employment over self-employment and casual employment.

Table 4. Type of Employment, longitudinal perspective

Type of Employment in 2008	Type of Employment in 2010: Regular Employment	Self Employment	Casual Employment
Regular Employment	92.8	3.6	3.6
Self Employment	27.6	64.7	7.6
Casual Employment	67.3	19.0	13.7

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were employed in regular, self-, or casual employment in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. Row percentages sum to 100 percent.

3. Data and Methods

3.1. Data

Our analysis in this paper takes advantage of the newly released Wave 2 of NIDS. The data are nationally representative and interview the same individuals that were interviewed in Wave 1. A full description of the data and access to questionnaires, papers, and the NIDS data is available at http://www.nids.uct.ac.za.

3.2. Samples Used

Unless explicitly stated, analysis in this paper is limited to those individuals who were 20 to 55 years old in 2008 and gave valid responses in both interviews. The age restriction is intended to keep our analysis focused on the progression of individuals who are working-aged throughout the entire 2 year period. In other words, we do not want large in-flows from NEA to employment among school leavers or from employment to NEA among retirees to overwhelm our story of transitions across employment status. Similarly, we do not want changes across employment/occupation types for individuals just entering the workforce or preparing for retirement to dominate our analysis. These may be worthy of study, but should be examined separately.

For large portions of the analysis, our panel will be limited to those individuals who were employed in both periods in regular, self-, or casual employment. For example, we may examine flows across employment type. Again, separate analysis may be completed to identify the type of employment associated with those entering or exiting employment. Finally, we will sometimes restrict attention solely to those in regular employment in both periods. Each table includes a description of the sample used in the table notes.

3.3. Augmented Transition Matrices

Throughout this paper we will make use of the panel data by using an augmented transition matrix. Table 5 is an example. It includes a transition matrix in the interior, where each row shows where individuals of a given state in 2008 are found in in 2010. Row percentages are used, with each row of the interior summing to 100 %. For example, 43.1% of those who were discouraged job-seekers in 2008 were NEA in 2010. The interior of Table 5 is identical to the transition matrix in Table 2. However, the Table 5 is "augmented" as it also includes the proportion of individuals in each state in the initial period in the extreme left column and the proportion of individuals in each state in the final period above the transition outcomes. These also sum to 100 % by definition.

Table 5: Augmented Employment Status Transition Matrix, 2008 to 2010

			Employment status in 2010			
			32.0	4.9	11.8	51.3
			NEA	**Discouraged**	**Searching**	**Employed**
Employment status in 2008	22.2	**NEA**	56.8	6.1	15.0	22.0
	6.4	**Discouraged**	43.1	10.8	18.1	28.0
	18.3	**Searching**	39.7	6.5	21.6	32.3
	53.1	**Employed**	18.5	3.2	6.7	71.6

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who responded in both waves.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. The cross-sectional percentages, presented on the outside borders, sum to 100% in each year.
4. The interior values offer longitudinal perspectives; i.e. Pr(Emp. Status in 2010 | NEA in 2008), etc. Therefore, rows in the interior sum to 100%.

3.4. Measure of Mobility and Immobility

We are often interested in how much mobility or immobility there is in the labour market. For example, if someone is employed in 2008, will they still be employed in 2010? Table 5 shows

that 71.6% will be employed in 2010. Thus a simple measure of immobility among those employed in 2008 would be .716 (and a simple measure of mobility would be .284).

Looking more broadly at employment status, we can use the proportion of individuals who are in the same state in 2008 and 2010 as our measure of immobility and the proportion of individuals who change states between 2008 and 2010 as our measure of mobility. Each measure falls between 0 and 1, and they are obviously linked: M = 1 – I, where M represents mobility and I represents immobility.

One concern with these measures might be that they treat movements across groups equally. For example, some might feel a move from discouraged job-seeker (or NEA) to employment represents more mobility than a move from searching unemployed to employment. Yet, we stick to these measures and their intuitive appeal in this paper.

The augmented transition matrix makes the measure of Immobility both fairly easy to compute and it is fairly easy to see the driving factors. For example, immobility between 2008 and 2010 with respect to employment status equals .553. In other words, 55.3% of individuals are in the same employment state in both 2008 and 2010. This is both relatively easy to compute using Table 5 (I = 0.222*0.568 + 0.064*0.108 + 0.183*0.216 + 0.531*0.716 = 0.553). Table 5 also makes it clear that the measure is clearly pulled up by the *relatively* higher immobility associated with the employed status and not overly dragged downward by the low immobility (high mobility) associated with the unemployment states due to the smaller proportion of individuals in these states in 2008.

There is no inherent welfare evaluation associated with increased or decreased mobility. It simply represents the proportion of people who were not in the same employment status. There was no discussion of moving to better or to worse outcomes. In fact, mobility often represents good news for some individuals and bad news for others. In Table 5, we generally would like to see a large proportion of the 2008 employed in the employed state again in 2010. Yet, we would not like to see a large proportion of the 2008 unemployed in unemployment states in 2010. Thus, we do not advocate this measure alone. However, it can give a feel for how much fluidity and churning there is in the labour market.

3.5. Earnings

When evaluating changes in earnings, we will use a measure of directional mobility, that is, the change in real earnings across periods.[3] We will typically present the mean change in real earnings for each cell in a transition matrix. We will also present the standard error associated with the estimated mean in order to get a sense of the confidence interval. Additionally, we will present the median earnings and the percentage of individuals who had positive earnings changes. Collectively, this information allows one to see what proportion of individuals benefited and gives a sense of the typical change in earnings.

3.6. Examining Outcomes by Sub-group: Gender

There are various sub-groups that one might consider examining separately, including specific age, race, education, urban/rural or province categories. For each of these sub-groups, it is possible to look at augmented transition matrices and an overview of earnings changes associated with for specific transitions. In this paper, we examine differences in employment outcomes and transitions by gender (See Section 4).

3.7. Concerns about Non-response

Wave 1 of NIDS data had 7 301 unique households, with a total of 28 247 household residents. In the adult dataset, there were 15 633 respondents (aged fifteen or greater). Wave 2 of NIDS had successful interviews at 6 809 unique households, with a total of 28 641 household residents successfully completing interviews. However, some of these individuals were new to the survey in Wave 2 and others who were in Wave 1 were not interviewed in Wave 2. The reasons vary, as will be shown below. In the 2010 adult dataset, there were 17 682 respondents who participated, 11 388 of whom had successful interviews in the adult questionnaire in 2008.[4]

Of the 15 633 respondents aged fifteen or greater in 2008, 77 % had successful interviews again in 2010; 6.5 % refused or were unavailable for the household level interview; 2.2 % has successful household interviews but refused or were unavailable for the individual interview in

[3] Deflators convert all earnings to September 2008 earnings. They are based on the CPI data from Stats SA, available at http://www.statssa.gov.za/keyindicators/CPI/CPIHistory.pdf. As explained in Ranchhod (2010), the midpoint is generally used to impute values for those who responded in earnings brackets rather than an exact earnings level.

[4] An additional 587 had proxy responses in 2008.

2010; 10.3 % came from households that could not be relocated or were not tracked; and 4.5 % were deceased or had moved outside of South Africa.

4. Transitions by Gender

This section re-examines our earlier work, presenting separate augmented transition matrices for each gender. The employment participation rate among the panel members is much lower for women than men (51.3% versus 41.9% in 2010) while women have a much greater proportion of individuals classified as unemployed (broad definition) and NEA. This does not change over time. We also see that women experience much greater mobility across employment status than men. Fifty percent of women changed employment status as compared to forty-five percent of men.

Table 6a. Augmented Transition Matrix: Male Employment Status, 2008 to 2010

			Employment status in 2010			
			32.0	4.9	11.8	51.3
			NEA	**Discouraged**	**Searching**	**Employed**
Employment status in 2008	22.2	**NEA**	56.8	6.1	15.0	22.0
	6.4	**Discouraged**	43.1	10.8	18.1	28.0
	18.3	**Searching**	39.7	6.5	21.6	32.3
	53.1	**Employed**	18.5	3.2	6.7	71.6

Table 6b. Augmented Transition Matrix: Female Employment Status, 2008 to 2010

			Employment status in 2010			
			39.4	5.7	13.0	41.9
			NEA	**Discouraged**	**Searching**	**Employed**
Employment status in 2008	27.1	**NEA**	59.5	6.2	15.1	19.2
	8.0	**Discouraged**	47.4	10.4	19.5	22.7
	20.7	**Searching**	41.5	8.2	21.2	29.1
	44.2	**Employed**	24.7	3.2	6.7	65.4

Notes:
1. Samples restricted to adults aged 20 to 55 in 2008 who responded in both waves.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. The cross-sectional percentages, presented on the outside borders, sum to 100% in each year.
4. The interior values offer longitudinal perspectives; i.e. Pr(Emp. Status in 2010 | NEA in 2008), etc. Therefore, rows in the interior sum to 100%.

In contrast to employment status mobility, women are less mobile than men when it comes to changing one's type of employment. (See Table 7a and 7b) Just 15.4% % of women changed

employment type compared to 17.1% for men. While the self-employment status is more stable for women than men, just 13.7% of women in casual employment in 2008 were working there in 2010.

Table 7a. Augmented Transition Matrix: Type of Employment Among Males

			Type of Employment in 2010		
			83.9	9.9	6.2
			Regular Employment	**Self Employment**	**Casual Employment**
Type of Employment in 2008	84.4	**Regular Employment**	91.0	4.5	4.5
	8.3	**Self Employment**	32.9	56.1	11.0
	7.3	**Casual Employment**	59.8	20.4	19.9

Table 7b. Augmented Transition Matrix: Type of Employment Among Females

			Type of Employment in 2010		
			84.3	11.0	4.7
			Regular Employment	**Self Employment**	**Casual Employment**
Type of Employment in 2008	82.9	**Regular Employment**	92.8	3.6	3.6
	10.4	**Self Employment**	27.6	64.7	7.6
	6.7	**Casual Employment**	67.3	19.0	13.7

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were employed in regular, self-, or casual employment in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. Row percentages sum to 100 percent.

For both groups, regular employment is a relatively stable position and regular employment comprises a little more than 80 % of the dual employed. Yet, men have more flow into and out of regular employment than women as apparent by the transition rates.

5. Industry and Occupation Transitions

We examine employment transitions for those who were employed in regular wage employment in both periods. We begin by classifying regular workers into industry categories. The primary sector consists of agriculture hunting forestry and fishing; and mining and quarrying. The secondary sector consists of manufacturing; electricity gas and water supply; and construction. The tertiary sector consists of wholesale and retail trade; transport storage and communication; financial intermediation insurance real estate and business services; and community social and personal services. The final category is private households, exterritorial organisations, and other activities not adequately defined.

Table 8. Augmented Industry Transition Matrix

			Industry in 2010			
			12.6	15.5	64.9	6.9
			Primary	**Secondary**	**Tertiary**	**Private HH/Other**
Industry in 2008	12.7	**Primary**	68.2	12.3	17.5	2.0
	21.1	**Secondary**	10.3	48.9	38.0	2.9
	59.4	**Tertiary**	2.1	5.7	90.2	2.0
	6.8	**Private HH/Other**	5.6	2.5	18.0	73.9

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were regular wage workers in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. Row percentages sum to 100 percent.

Approximately one-fourth (22.4%) of this group changed industry category between 2008 and 2010 (see Table 8). The exodus from secondary employment is particularly prominent with less than half of those who were in the sector in 2008 found there again in 2010. In contrast, just ten percent of those in the tertiary sector in 2008 were not in the tertiary sector in 2010.

Table 9a. Augmented Industry Transition Matrix, Males

			Industry in 2010			
			18.9	20.8	58.9	1.3
			Primary	**Secondary**	**Tertiary**	**Private HH/Other**
Industry in 2008	18.8	**Primary**	73.3	11.2	14.1	1.4
	28.6	**Secondary**	11.3	46.3	40.7	1.6
	51.5	**Tertiary**	3.4	9.6	86.6	0.4
	1.1	**Private HH/Other**	17.7	19.9	25.7	36.8

Table 9b. Augmented Industry Transition Matrix, Females

			Industry in 2010			
			5.0	9.1	72.1	13.7
			Primary	**Secondary**	**Tertiary**	**Private HH/Other**
Industry in 2008	5.6	**Primary**	48.0	16.8	31.1	4.2
	12.4	**Secondary**	7.5	55.8	30.4	6.3
	68.6	**Tertiary**	1.0	2.3	93.3	3.4
	13.4	**Private HH/Other**	4.5	0.8	17.2	77.5

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were regular wage workers in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. Row percentages sum to 100 percent.

Tables 9a and 9b show that there is greater mobility across industry for males than females. The exodus from the secondary sector for those who were in the secondary sector in 2008 is significant for both males and females. However, this is particularly stark for males for two reasons. First, just 46.3% are there again in 2010 (as compared to 55.8% for women). Secondly, this group represented 28.6% of 2008 employment for males in this sample as compared to 12.4% of the 2008 employment for females in the sample. Similarly, while women in the primary sector have a high propensity to move to other sectors in 2010, there are relatively few women engaged in the primary sector in 2008.

A look at more detailed industry classifications available in NIDS (not shown) shows that the decline in employment in the secondary sector is driven by decline in total employment in manufacturing. This decline was much deeper for men. Simultaneously, services grew in wholesale and retail trade (particularly for men) and community, social and personal services (for both genders).

We can also investigate changes in occupation for those who were employed in regular, self- or casual employment in both periods. The managerial/professional category includes managers; professionals; and technicians and associate professionals. The semi-skilled group includes clerical support workers; service and sales workers; skilled agricultural, forestry and fishery workers; craft and related trades workers; and plant and machine operators, and assemblers. Lastly, there is a group working in elementary occupations.

Table 10. Augmented Occupation Transition Matrix

			Occupation in 2010		
			32.4	44.4	23.2
			Managerial/ Professional	**Semi-skilled**	**Elementary Occupations**
Occupation in 2008	27.8	**Managerial / Professional**	77.0	18.3	4.7
	54.4	**Semi-skilled**	16.7	65.5	17.8
	17.8	**Elementary Occupations**	6.3	22.5	71.2

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were regular wage workers in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3 Row percentages sum to 100 percent.

Two results are apparent from Table 10. First, there is movement out of the semi-skilled occupations. This is apparent in both the transition and the cross-sectional results. Second, there is less movement across elementary occupations and managerial/professional positions.

Table 11a. Augmented Occupation Transition Matrix, Males

			Occupation in 2010		
			25.4	52.3	22.3
			Managerial/ Professional	**Semi-skilled**	**Elementary Occupations**
Occupation in 2008	20.5	**Managerial / Professional**	73.7	17.3	9.0
	66.7	**Semi-skilled**	12.2	67.9	19.9
	12.8	**Elementary Occupations**	9.9	27.6	62.4

Table 11b. Augmented Occupation Transition Matrix, Females

			Occupation in 2010		
			40.7	35.1	24.2
			Managerial/ Professional	**Semi-skilled**	**Elementary Occupations**
Occupation in 2008	36.5	**Managerial / Professional**	79.2	18.9	1.9
	39.7	**Semi-skilled**	25.7	60.7	13.5
	23.8	**Elementary Occupations**	4.1	19.4	76.5

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were regular wage workers in both periods.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. Row percentages sum to 100 percent.

Tables 11a and 11b show the augmented occupation transition matrices separately by gender. The divide between elementary occupations and managerial/professional positions is most stark among females. The overall mobility is similar but slightly greater for males (31.6% than females (28.8%) despite the fact that females exhibit greater mobility out of semi-skilled positions, the most common occupation type for both groups.

Finally, the cross-sectional decline in semi-skilled employment is clearly driven by males. A look at more detailed occupation classifications available in NIDS (not shown) shows that the decline in semi-skilled occupations was driven by declines in (female) clerical support workers; (male) skilled agricultural, forestry and fishery workers; and (male) craft and related trades workers.

6. Earnings Changes

Table 12 examines earnings changes across employment type transition experiences for those who were employed in regular, self-, and casual employment in both periods. The mean earnings change, its standard error, the median earnings change and the percent of positive earnings changes are presented for each cell in the transition matrix.

Results from Table 12 demonstrate the benefits of regular employment. Seventy-one and sixty-five percent of those moving from regular employment to self-employment or casual employment, respectively, experienced losses in earnings. Average losses were sizeable. An even greater percentage of those moving from self-employment (80%) or casual employment (84%) into regular employment experienced earnings gains, with large mean and median gains in earnings. Those remaining in self-employment and casual employment appeared to have rather equal earnings gains and losses, though those remaining in self-employment experienced losses on average. Sixty-seven percent of those moving from casual to self-employment experienced earnings gains, though the average gain was not statistically different from zero. Surprisingly, the median gain for those moving from self-employment to casual employment was also positive, though the average was also not statistically different from zero.

Table 12. Changes in earnings by type of employment transition

			Employment Type in 2010		
			Regular Employment	**Self-employment**	**Casual Employment**
Employment Type in 2008	**Regular Employment**	*Mean*	135	-3 886	-640
		Mean se	*(185)*	*(1 205)*	*(219)*
		Median	383	-1 131	-139
		Percent Pos.	63%	29%	35%
	Self-employment	*Mean*	3 011	-2 286	617
		Mean se	*(884)*	*(862)*	*(790)*
		Median	1 061	75	195
		Percent Pos.	80%	53%	56%
	Casual Employment	*Mean*	909	158	-121
		Mean se	*(120)*	*(184)*	*(155)*
		Median	808	264	-7
		Percent Pos.	84%	67%	50%

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were employed in regular, self-, or casual employment in both periods.
2. All values have been weighted using the post-stratification weights that account for attrition.

Table 13 examines earnings changes across industry transition experiences for those who were in regular employment in both periods. Most of those moving out of primary employment experienced earnings gains, but on average in this sample, they experienced earnings losses. The median gain for those moving from secondary to tertiary sectors was R496.

Table 13. Changes in earnings by Industry Transition

			Industry Type in 2010			
			Primary	**Secondary**	**Tertiary**	**Private HH/Other**
Industry Type in 2008	**Primary**	*Mean*	225	-5 046	-1 077	15
		Mean se	*(183)*	*(2 999)*	*(974)*	*(181)*
		Median	180	384	547	85
		Percent Pos.	62%	69%	73%	57%
	Secondary	*Mean*	-79	828	1 354	70
		Mean se	*(378)*	*(506)*	*(494)*	*(141)*
		Median	248	274	496	227
		Percent Pos.	61%	64%	66%	67%
	Tertiary	*Mean*	1 168	507	21	-51
		Mean se	*(517)*	*(630)*	*(359)*	*(63)*
		Median	1 289	985	562	-74
		Percent Pos.	61%	66%	65%	40%
	Private HH/Other	*Mean*	-13	205	177	257
		Mean se	*(164)*	*(394)*	*(268)*	*(77)*
		Median	122	-269	174	103
		Percent Pos.	52%	42%	72%	64%

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were employed in regular employment in both periods.
2. All values have been weighted using the post-stratification weights that account for attrition.

Table 14 examines earnings changes across occupation transition experiences for those who were in regular employment in both periods. The benefit of moving to Managerial and Professional occupations is readily apparent, with three-quarters of those moving into these occupations experiencing gains and large, statistically significant average gains. In contrast, those moving out seem just to hold steady, with earning outcomes well below the norm for this select sample of dual earners.

Table 14. Changes in earnings by Occupation transition

Occupation in 2008			Occupation in 2010: Managerial/ Professional	Occupation in 2010: Semi-skilled	Occupation in 2010: Elementary Occupations
		Mean	-858	-509	-334
	Managerial/	*Mean se*	*(622)*	*(815)*	*(560)*
	Professional	*Median*	605	126	100
		Percent Pos.	62%	50%	52%
		Mean	1 983	611	-107
	Semi-skilled	*Mean se*	*(553)*	*(266)*	*(182)*
		Median	1 125	405	139
		Percent Pos.	75%	63%	61%
		Mean	687	352	506
	Elementary	*Mean se*	*(278)*	*(117)*	*(613)*
	Occupations	*Median*	380	488	132
		Percent Pos.	78%	68%	63%

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who were employed in regular employment in both periods.
2. All values have been weighted using the post-stratification weights that account for attrition.

7. Search and Employment Outcomes

The two most common search activities among the searching unemployed in 2008 were enquiring at workplaces, farms, or factories (37% of individuals) and seeking assistance from relatives or friends (30.4% of individuals). As individuals could choose more than one search method, the left-hand column can sum to more than 100%.

Table 15 also shows the 2010 employment status breakout for those who attempted each search method. Those who searched through job ads on the internet (7.9%) and answered ads (19.5%) in 2008 were most likely to have regular employment in 2010. Excluding those who attempted "Other" search activities, those who looked for land, building, equipment or applied for a permit were the most likely to be employed in either regular, self- or casual work. These groups had a slightly more than average percentage working in regular employment, but approximately twice the average percentage were employed in casual employment and approximately three times the average percentage had moved into self-employment.

Clearly, these are simple correlations rather than causal relationships. For example, those who undertake internet based job searches are likely to be systematically different than those who do not. Additionally, approximately two years separate the 2008 search approach and the 2010 employment outcome.

Table 15. Search strategy in 2008 and Employment Type in 2010

Search Method employed in 2008	Percent attempting search activity in 2008		Percent in each employment status in 2010			
			Employed	Regular	Self-	Casual
	15.0	Registered at an employment agency	37.4	28.6	3.1	5.8
	36.9	Enquired at workplaces, farms, factories etc	28.5	20.3	3.7	4.5
	10.6	Placed advertisement(s)	31.2	21.3	3.2	6.7
	19.5	Answered advertisements	41.5	33.6	3.6	4.2
	7.9	Search through job advertisement(s) on the internet	45.5	36.4	8.3	0.8
	30.4	Sought assistance from relatives or friends	27.6	16.8	3.6	7.2
	4.6	Looked for land, building, equipment or applied for a permit	47.3	25.6	11.1	10.6
	8.9	Waited on the side of the road	30.6	23.0	0.9	6.7
	1.1	Sought financial assistance to start a business	32.6	21.6	5.2	5.7
	1.6	Other	51.4	14.4	26.2	10.8
		All searching unemployed	30.8	21.6	3.9	5.4

1. Sample restricted to adults aged 20 to 55 in 2008 who responded in both waves and were searching unemployed in 2008.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. Employed refers to primary employment in regular, self-, or casual employment.
4. Individuals may engage in more than one search strategy.

Table 16. Reason for being not economically active in 2008 and employment status in 2010

Reason for being not economically active in 2008		Employment status in 2010			
		NEA	Discouraged	Searching	Employed
9.1	I am too old	71.6	3.0	9.7	15.8
20.4	I am a full-time student	47.8	6.6	20.8	24.7
21.6	I am sick/disabled	74.4	4.5	8.3	12.9
2.6	I do not like the available jobs	55.1	2.9	11.4	30.7
2.0	I do not like working	46.3	0.0	28.3	25.4
10.0	I do domestic duties	54.8	6.5	16.2	22.5
14.6	I look after children	53.2	10.6	11.1	25.2
4.7	It costs too much to job hunt	39.9	5.1	27.2	27.8
1.2	The wages are too low	24.2	12.7	14.3	48.8
3.2	I spend my time cooking	67.0	10.9	8.9	13.3
10.6	Other	43.5	4.8	21.0	30.7
	All 2008 NEA	56.8	6.1	15.0	22.0

1. Sample restricted to adults aged 20 to 55 in 2008 who responded in both waves and were NEA in 2008.
2. All proportions have been weighted using the post-stratification weights that account for attrition.

Similarly, Table 16 presents employment status in 2010 based on the 2008 reason for being NEA. Not surprisingly, those who were not working because they were too old or sick/disabled

have the highest likelihood of being NEA in 2010, although more than 10 % of these individuals were employed in 2010. In contrast, 48.8% of those who had said they were NEA because wages were too low were employed in 2010. Those who were NEA because the job hunt was too expensive or because they did not like working were also relatively less likely to be NEA again, with just 40% and 46% listed as NEA, respectively. Among those who were full-time students, approximately half remained NEA, 24.7% were now employed and 27.4% were now unemployed under the broad definition of unemployment.

8. Data Concerns

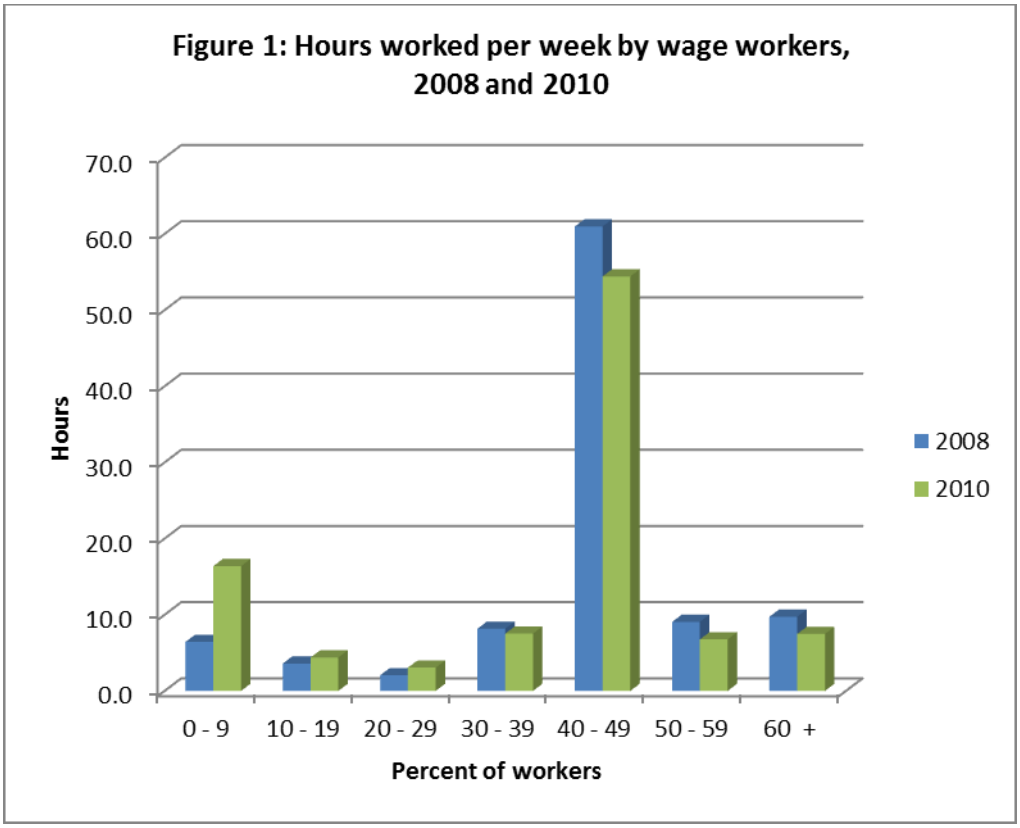
Users of NIDS Wave 2 should be aware of a few data irregularities that can have a profound impact on results. We highlight three examples of problematic data that we have identified. In these cases, responses were within the valid range and thus were not identified during standard edit checks during the survey collection phase. Yet the distribution of results suggests that certain members of the fieldwork team had a poor understanding of the intent of the question. There are lessons to be learnt here and the NIDS team is working aggressively to identify the underlying causes of these issues and to develop proper safeguards to ensure that they do not recur in future Waves. They are also working to alert users to these issues so that policy discussions are not contaminated with false conceptions.

The first concern is the large reduction in the number of unemployed, particularly searching unemployed in 2010. This is surprising and we cannot identify a reason for such a dramatic change. Additionally, while there is not an exact comparison available in published Stats SA documents, their statistics do not show a large decline in the percentage of searching unemployed during this time period. Thus, while the NIDS team looks to evaluate this issue, one should use caution in interpreting the sharp decline in unemployment rates between 2008 and 2010 found among the NIDS panel respondents.

The second concern is the number of individuals working in subsistence agriculture. There was a significant decrease in the number of individuals who were employed in subsistence agriculture. The question on employment status was similar in both years. Seasonality, while potentially a factor in explaining some of the decreased agricultural employment, cannot fully explain the dramatic decline from 6.5% of employment in 2008 to 2% in 2010. It is possible that there was some problem in the way this question was asked in the field. This change in the ability to identify individuals working in subsistence agriculture is another factor that should be accounted for when examining reported changes in employment status between Wave 1 and Wave 2.

When analyzing changes in the types of employment and earnings, we exclude those employed in the subsistence agriculture sector in either year. We focus exclusively on those employed in regular, self-, or casual employment. Thus, the reported changes are not driven by any changes in our ability to identify those working in subsistence agriculture. We would recommend similar exclusions if analyzing changes in industry or occupation. In this paper, we limited our analysis of industry and employment to those in regular employment and are thus unaffected.

The third data concern is the hours worked variable. Figure 1 shows the reported hours worked variable for the main job listed under regular employment. There is a dramatic increase in the number of respondents reporting they work less than 10 hours per week, from 6.4%in 2008 to 16.4% in 2010. Additional examination of the data suggests that a number of field staff misinterpreted the question and were asking for the hours worked per day rather than per week. Thus, this variable is not used in our analysis. We recommend that others use considerable caution with this variable.



9. Incorporating Proxy Responses

Table 17 re-constructs the augmented employment status transition matrix (see Table 5) using both information from respondents and information found via a proxy respondent. The results show that the effect of adding in proxy responses is negligible on these outcomes.

Table 17: Augmented Employment Status Transition Matrix and Proxy Responses, 2008 to 2010

Including Proxy Responses

			Employment status in 2010		
			31.1	17.5	51.5
			NEA	**Unemployed**	**Employed**
Employment status in 2008	21.5	**NEA**	55.8	23.0	21.1
	24.5	**Unemployed**	40.0	28.7	31.4
	54.0	**Employed**	17.2	10.3	72.5

Excluding Proxy responses

			Employment status in 2010		
			32.0	16.7	51.3
			NEA	**Unemployed**	**Employed**
Employment status in 2008	22.2	**NEA**	56.8	21.2	22.0
	24.8	**Unemployed**	40.6	28.3	31.2
	53.1	**Employed**	18.5	9.9	71.6

Notes:
1. Sample restricted to adults aged 20 to 55 in 2008 who responded in both waves or had proxy responses.
2. All proportions have been weighted using the post-stratification weights that account for attrition.
3. The cross-sectional percentages, presented on the outside borders, sum to 100% in each year.
4. The interior values offer longitudinal perspectives; i.e. Pr(Emp. Status in 2010 | NEA in 2008), etc. Therefore, rows in the interior sum to 100%.

10. Summary and Discussion

By allowing us to follow the same individuals over time, NIDS Waves 1 and 2 allow us to see dynamic changes taking place in the South African labour market that may not be apparent when looking at the changes over time using cross-sectional data. These data allow us to see the changes that occur between 2008 and 2010.

The data show extensive mobility across employment status and significant mobility across the type of employment, with women exhibiting much greater mobility into and out of the workforce and employment, while men exhibit more mobility across employment types among those employed in both periods. Among those employed in regular employment in both periods, there is considerable mobility across industry and occupational groupings. Flows out of manufacturing and into services and out of semi-skilled into elementary occupations are particularly noteworthy for men.

The benefit individuals derive from working in regular employment as compared to self- or casual employment was demonstrated using some basic summary statistics regarding earnings changes over time. The same individuals were typically earning much more when moving from self- or casual employment to regular employment and earning much less if moving from regular employment to self- or casual employment.

The panel data allow us to identify employment outcomes in 2010 for those using different job search strategies in 2008. A simple descriptive table identifies considerably higher employment rates for those using specific search strategies such as looking for jobs on the internet and looking for land and building equipment. As with all of these descriptive tables, more detailed econometric analysis would be needed to identify the causal impact of such search strategies.

We also identify three areas where the NIDS data may not properly represent changes in the population. First, there is an unusually large decline in those identified as searching unemployed. Second, there is an unusual decline in the number of individuals reporting work in subsistence agriculture. Third, the hours worked variable appears to be problematic. Users of NIDS data should be aware of these issues so they can avoid variables that are problematic when possible and interpret results accordingly if using these data. The paper shows how to analyze employment changes without being unduly influenced by these issues. In addition, it is comforting that including data from proxy respondents causes little change to the reported employment status in each period and the changes in this variable over time.

This paper is designed to provide an initial overview of key changes in the labour market that can be identified using Waves 1 and 2 of NIDS. Much richer analysis on these issues is possible. Over time, NIDS data will also allow us to examine the long-term impact of labour market shocks, such as a failed business or a job loss. We will also be able to identify how health shocks or education shocks impact labour market outcomes in future years. In the meantime, there is much more that can be done to explore labour market issues using Waves 1 and 2.

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