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Recent Internal Migration and Labour Market Outcomes

Exploring the 2008 and 2010 National Income
Dynamics Study panel data in South Africa

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INTRODUCTION

One of South Africa's big socio-economic challenges is its high rate of unemployment. The rate is highest among the youth and among rural dwellers. Rankin and Roberts (2011:128) report that in 2005 'half of those in the labour force cohort aged 15–24 years were unemployed'. In many parts of rural provinces like the Eastern Cape, the level of unemployment was in many instances reported to be as high as 60% in 2004. Furthermore, what complicates and make the problem worse in rural areas and among the youth are the lack of skills, low levels of school education, lack of work experience and low social capital (Duff and Fryer, 2005). These factors encourage youth migration into urban areas as reported in various quarters (e.g. Social Development 2009). The migration not only leaves rural areas with an aged and vulnerable population but also exacerbates the problem of unemployment in urban areas where competition for scarce work is high. Similar issues are discussed in detail by Posel (2003, 2004, 2009 and 2010) and Cornwell and Inder (2004), using the NIDS datasets and the October Household Survey (OHS) datasets of the early 1990s, respectively.

Various public policies in the last ten years have been formulated to deal with similar challenges around unemployment and lack of basic and technical skills. While work placement programmes have been aimed directly at reducing youth unemployment and providing the youth with work experiences (HSRC, 2008 and McCord, 2008), a renewed discussion on economic development has also emerged with a focus on rural development and employment issues (Mbatha, 2011). Positive effects of work placement programmes driven by public policy have been reported, at least among the small numbers of youth who find opportunities to participate (HSRC, 2008). Policy has however become silent regarding issues of internal and

temporary migration, especially of youth from rural areas. Posel (2010:130) expanded on this point stating that '(i)n the post-apartheid period, where the permanent migration of families into urban areas is no longer prohibited, the persistence of temporary labour migration is perhaps unexpected.'

Hence this paper explores the current nature of the links among the challenges of rural and urban unemployment and how these possibly lead to new patterns of recent internal migration, using the first two waves of the NIDS (2008 and 2010). In this context, recent internal migration therefore refers specifically to any relocation across the first two waves of the NIDS datasets. Classical and contemporary economic development theories, including Lewis (1954), Harris and Todaro (1970), Fields (2005) and Lall, Harris and Shalizi (2006) are used to establish some framework for exploring the data. The paper compares the performances of migrants in the labour market against those of non-migrants. It also explores the effects of explanatory variables including education (e.g. Matric¹), age, gender and race on employment status (as the dependent variable). The comparisons are performed using a multinomial logistical model for the employment status, with four categories, which are spelled out explicitly in coming sections.

Contrary to Cornwell and Inder's (2004) analysis of the 1993 and 1994 OHS datasets, in the NIDS data rural to urban migrants do not perform relatively poorer in the formal employment sector compared to urban-urban and urban-rural migrants. The odds of finding employment in the informal and formal sectors improve for most migrants, although the odds appear low in informal markets for those

1 Twelve years of school education.

moving from urban to rural areas.² Furthermore, being younger and possessing a Matric are also two variables that are substantively and reliably associated with observed migration. Furthermore, being middle aged (30 to 60 years old) is also associated with a higher likelihood to participate in the labour force.³ Meanwhile the majority of the youth (15 to 30 years old) are unemployed - even though they are mostly likely to migrate. It is therefore suggested that migration in general, may not only be influenced by push factors but is also influenced by an attainment of some other minimum economic attribute, for example increased education levels or income. In the 2008 to 2010 NIDS datasets the highest number of migration cases occurred in the age groups (15 to 30) and (31 to 45) years old. This may be highlighting the effects of both push and pull

effects. Some of these patterns form the bases for considerations that public policy, which is aimed at improving the chances of rural and youth employment, should take into account.

The paper is structured in the following manner, in Section two, the NIDS datasets and research methods are described broadly. A review of classical and contemporary theory on migration and economic development is presented in Section three. Section four presents the framework for the analysis. Descriptive statistics are presented in Section five. Results from the multinomial logistical model exploring the relative odds of being economically inactive, unemployed, informally and formally employed are presented in Section six. A summary discussion with some implications for research and policy are presented in Section seven.

² The pattern has however not yet stabilised.

³ Even though the decision to migrate is not estimated in this study, the theoretical proposition also mentioned in this paper is that this decision is influenced by the expected wage variable (Cornwell and Inder, 2004:2) adjusted for the probability of finding employment.

AN OVERVIEW OF THE NIDS AND METHODS OF ANALYSIS

The data used for analyses comes from two waves of the 2008 and 2010 of a nationally representative longitudinal study (NIDS). A detailed description of the data collection, collation and release methods and processes are detailed in Brown, Daniels, De Villiers, Leibbrandt and Woolard (2012) for both waves. It is important to note that the first wave provided the baseline of 28 247 total members residing in 7301 households. In the second wave 6 809 households were interviewed with 28 641 individual members. Of the 28 641 members, 21 098 were part of the 2008 cohort and 6 591 were new members, who were not part of the first wave. An attrition rate of 21% was reported of which 47.65% were due to loss of contact, 37.5% were due to refusals for re-interviews and 14.85% were deceased (Finn, Leibbrandt and Levinsohn, 2012:3-4). Data coming from the Individual Adult Questionnaires of the two waves formed the basis for the present analysis. The data were analysed as two cross-sectional sets and also merged and analysed as a panel for tracking migrants. The 2010 data was used for identifying most of the socio-economic indicators including incomes, age, education level, marital status, etc. The weighting variable provided for by the NIDS office was used in running the multinomial model.

The process of creating the two main categorical variables for the multinomial model (namely the variable with four categories of employment status (the dependent variable) and four categories of migration (one of the explanatory variable)) is described in Sections five and six. Other explanatory variables included in the model are gender, age, education, race and marital status. The results were compared to findings from Cornwell and Inder (2004), who used the 1993 and 1994 OHS datasets and Finn, Leibbrandt and Levinson (2012). The primary questions for the research include the following:

- a) How different types of migration impact on employment status or labour market outcomes?
- b) How do other attributes of respondents, i.e. age, gender, race, education, etc., compare to those of the sample?
- c) How do migrants from rural to urban areas, in particular, perform with respect to employment status?
- d) How do the results compare to theoretical expectations?
- e) What conclusions and policy implications can be drawn with respect to youth migration and education, especially?

REVIEW OF LITERATURE

The divide with respect to living standards across rural versus urban and developed versus developing regions has been the focus of theorising in development economics for more than six decades (see Stern, 1991:122). The works of Lewis (1954), Rostow (1960) and Todaro (1969) form the core of the classical works in the field. Todaro (1997:3) put it succinctly saying that the minority of the world's population, constituting only a quarter of the total, live in secured environments of food supplies, shelter, health, etc., while 'more than 5.8 billion people have little or no shelter ... low literacy skills, are unemployed and their prospects for a better life are bleak'. In attempts to understand the dynamics of development and of narrowing inequalities, various theories have been proposed over time. These have included a focus on incentives to invest in human capital and on migration of low and high skills between rural and urban regions, for example those presented in the Two-Sector Model which was first introduced by Lewis (1954).

Rural-urban migration economic development models

Rostow (1960) highlighted observations of linearly progressive stages to capital accumulation in shifts towards a higher state of development. Others including Lewis (1954), Todaro (1969), Bhagwati and Srinivasan (1974), Basu (1980), Bond and Wang (1996), etc., have developed theories of skills migration and capital investments that are more dynamic in nature. The Lewis (1954) model explained the process of transitioning from an agrarian economy into an industrial one as being fuelled by the migration of low skilled labour to urban regions. The model proposed that an unlimited supply of low skills would migrate from rural regions at lower wages into expanding urban centres. This would raise industrial productivity, capital

accumulation, technological advancement and high profits. The migration from rural areas and the urban industrialisation process would stall when the urban wage incentive disappeared. Some assumptions of the model were that more than 80% of the population resided in rural environments initially, that labour was the only input in the agricultural sector - with a constant technology - while technology changed in urban regions (Todaro, 1997:75-80).

Expanding on the Lewis (1954) discussion that migrants respond to urban wages, Harris and Todaro (1970) showed that under certain parameters, such as job stimulation⁴, the increase in demand for labour in urban areas could lead to unintended urban unemployment, because of an overly responsive rate of migration. Invariably this would reduce national productivity. These effects are known as the *Todaro Paradox*. Nevertheless, in choosing to migrate to urban areas, risk neutral agents move because they *expect* urban wages to be higher than rural wages, the probability of finding a job higher, and the cost of moving low. But the increased labour influx rate would ensure that the real urban wage declines eventually and equals the rural wage, accompanied by rising urban unemployment and zero to negative expected gains from decisions to migrate, as in equation 1:

$$V(0) = \int_{t=0}^n [P(t)Y_u(t) - Y_r(t)]e^{-rt}dt - C(0) \dots \dots \dots (1)$$

Where:

- $V(0)$ = discounted present value of net gain from rural to urban move
- $P(t)$ = probability of securing an urban job in period t
- n = planning horizon
- Y_u & Y_r = urban and rural average real wage
- C = cost of move
- r = discount rate

4 For example, by policy.

Riadh (1998) hence proposed an inclusion of risk aversion, priority hiring, the informal sector – which may offer temporary employment, travel costs, etc., as factors explaining further the migration decisions and urban unemployment in the Harris-Todaro model. Potential migrants may for example limit risk and delay migration by investing first in education and by spending time establishing networks in urban areas before leaving the rural base. Alternatively they could use the informal sector as a temporary option while searching for permanent employment (Kochar, 2004, Roberts, 2001 and Banerjee, 1991 in Lall et al., 2006). In this paper we only mention how in addition to the informal sector being used as an alternative option, migrants could also move to urban areas to acquire skills thus increasing the migration, but not urban unemployment⁵.

The evolution of the Two-Sector model later presented a balanced growth path, with technology exhibiting increasing and constant returns to scale to varied outcomes. Bond and Wang (1996:151) presented a model that considered the non-stationary nature of the (endogenous) growth phenomenon, where transitional dynamics were present. The dynamics included the relative price of education being studied against the relative price of capital, and the dynamic adjustment in the neighborhood of a balanced growth. Other models that discuss factors specific to developing countries have been proposed.

Rural-urban migration patterns in developing countries including South Africa

Lall et al. (2006) reported that in Africa during the 1960s and 1970s fifty percent of urban growth was due to migration from rural areas and the rate was about 25% in the 1980s and 1990s. In India 35% of urban growth was due to rural-urban migration of over twenty million people. The figures illustrate the importance and magnitude of rural-urban migration in developing countries. Groups migrate for different reasons. For example, young adults could migrate because there were higher expected net returns to

migration – based on remaining life expectancy, low skilled individuals would migrate in search of manual jobs, while high skilled workers would migrate for better jobs. In most developing countries females felt less vulnerable physically in unfamiliar environments compared to males. These motivations could be classified into push and pull categories. For example, having good networks in the destination area could be a pull factor. Nonetheless, Lall et al. (2006) still pointed out a number of migration policy questions that remain unanswered for developing countries. These include whether and when migration is desirable, whether and how governments should intervene and with which objectives, given the varied theoretical positions.

While theoretical and empirical studies have argued that migration to urban areas could be a prerequisite to economic growth and rural development⁶, migration could also create socio-economic pressures in urban areas. High migration rates have been shown to contribute to high levels of unemployment, a collapse of public service provision, unrest and geographical disparities, if they were not managed effectively. In light of various arguments, for example that urban unemployment would rise from migration influx, suggestions have been made that governments either act on ‘excess’ migration or on the wage incentive. Other suggestions advocate attempts at eliminating inequalities by ‘rural job creation’, ‘urban job creation’ and ‘urban wage limitation’ as proposed by Fields (2005 in Lall et al., 2006:16). Most of the different suggestions come from different assumptions of models that have been discussed and some may even seem contradictory. For example, while some policy suggestions are aimed at improving urban environments to accommodate higher migration rates, some are aimed at improving rural environments. Earlier theories, for example Lewis (1954), argued that migration would lead to some stable equilibrium of stable employment and wage levels across rural and urban areas, later theories (e.g. Field, 2005 in Lall et al., 2006) proposed that the rates would not be stable, with migration continuing beyond some stable levels, as individual motivations varied. This would lead instead to severe social challenges in urban areas and sometimes conflicting interventions. In this sense, the

⁵ This explanation is only mentioned from a theoretical viewpoint. The NIDS data is not analysed for skills acquisition as motivation to migrate.

⁶ For example, in the case of urban to rural remittances.

real (or imagined) wage differential between urban and rural areas was not be the only factor in decisions to migrate, but factors were varied and some had no immediate employment connections, e.g. study opportunities (Riadh, 1998 and Lall et al., 2006). The inclusion of the informal sector in urban areas as a variable was also not always discussed in classical theories. Its predominance especially in developing countries has contributed immensely to the discussion of migration beyond the Lewis (1954) model.

In South Africa, migration studies are well documented⁷, but have shifted focus from migrant-labour issues where legislation controlled the movement of Black labour to urban areas. Posel (2003:2) proposed that ‘an assumption underlying (the) change in (the) focus seems to be that migrant labour would not be part of a post-Apartheid South Africa... In the ‘new South Africa’, people would choose not to be labour migrants but would rather migrate to, and settle permanently at their places of work’. She argued that the assumption was not accurate but it led to a shift towards studies of the extent of immigration, its legality and South Africa’s economic and political responses⁸. She postulated that internal migration had in effect increased partly because of an increase in female labour migration and also due to the changing nature of a household including its internal gender-power relations. ‘In 1993, an estimated 30% of African migrant workers were women, by 1999 this had increased to 34%’ (Posel, 2003:9). And contrary to other surveys, Posel (2009:16) argued that ‘the NIDS includes a much more comprehensive set of questions on migration and related information than most other nationally representative household surveys in South Africa’.⁹ A discussion that differentiates among different types of migration is useful. However this paper is not looking at whether or not internal migration is permanent, for

example whether or not people migrate with the intention of returning to their household of origin at some future point. Rather, the paper looks at recent migration from 2008 to 2010, defined as a change of current location. This also means that the study is not identifying as migrants, individuals who migrated before the 2008 NIDS dataset. For a discussion on the dynamics of migration in post-Apartheid era see Posel (2003, 2004, 2009 and 2010).

In exploring the links between rural-urban migration and unemployment, Cornwell and Inder (2004) used the 1993 and 1994 OHS datasets to investigate how South African migrants¹⁰ would perform compared to non-migrants in finding jobs. Using some of the literature reviewed here, which suggest that migration may actually create urban unemployment, they asked if recent migrants were more likely to be unemployed or underemployed¹¹ when compared to non-migrants with identical attributes. Their expectations were that the outcomes for a migrant were likely to be worse than those of the labour market. Among other results they found that:

10 Cornwell and Inder’s (2004) definition of migrants was borrowed directly from the OHS survey question. First, they excluded international migrants to identify if respondents had moved in the past twelve months and if they had moved, whether they had moved from a rural or urban area to then create migration categories similar to those created in this paper. So the definition of migration in that work is similar to the definition adopted in this paper in that it did not explore whether or not the recent migration was permanent or temporary. Unlike in the NIDS datasets, however, the OHS survey was not a panel and did not track the same individuals. The study merely compared results from cross-sectional data between 1993 and 1994.

11 Cornwell and Inder (2004) divided the labour force broadly into employment and unemployment. Employment was then divided into formal and informal employment. Unemployment was divided according to the narrow and broad definitions. In the present study the same categories were identified with respect to employment but only the broad definition of unemployment was used. Cornwell and Inder (2004) also created a variable of underemployment, which was not created for the present study. The types of questions asked in the NIDS survey relating to the labour force have changed somewhat compared to those asked in the old OHS surveys about twenty years ago. It is acknowledged that the nuanced differences in the definitions of the labour force would limit and compromise a one to one comparison exercise across the different surveys. A detailed discussion on the evolution of labour force survey definitions in South Africa and its challenges is presented by Fryer (2013). Nevertheless, the comparisons made between the two studies were performed only for similar variables with respect to the migration definition and the labour force categories. For example, with respect to migration the current analysis does not look into rural to rural migration nor does it look at urban to urban migration.

7 For example see Crush (2000) and Spiegel (1980). See Mayer and Mayer (1974) and Stark and Lucas (1985 and 1988) on the discussions of varied motivations for remittances as insurance, for instance.

8 Questions to generate variables on internal migration patterns and remittances also disappeared from national household surveys including the October Household Survey (OHS).

9 This is especially in relation to information on household membership and transfers of remittances even though the NIDS estimates of migrants and their relationships are smaller or weakening than those reported in the 1999 OHS and the September rounds of the Labour Force Surveys (LFS) from 2002 to 2005.

- a) the majority of migrants moved from urban to urban regions in both the 1993 and 1994 datasets,
- b) rural-urban migrants experienced a lower level of unemployment (23%) compared to migrants from urban to rural areas (28%), while non-migrants experienced a rate of 27% in 1994,
- c) the results for all migrants were clearly skewed by the good performances of urban-urban migrants, but overall rural-urban migrants performed marginally better than theoretically expected.

Using the NIDS datasets, Finn, Leibbrandt and Levinson (2012:19) investigated the overall performance of the respondents who had migrated between 2008 and 2010 against those who had not moved. They found that movers¹² had gained significantly higher net incomes per capita against non-movers. They also found that movers had a better chance (at 75.1%) of keeping a job than non-movers (at 71.6%). Fifty six percent of previously 'discouraged' movers had a job in 2010, compared to only 24% of non-movers. Their message was that migration had positive relative payoffs. This was in many ways similar to Cornwell and Inder's (2004) findings.

Although the present discussion explores migration effects in a similar manner to Cornwell and Inder (2004) and Finn *et al.* (2012), unlike Cornwell and Inder (2004) the study uses different datasets and different variables, for example employment is defined different in the two studies because the present study does not explore underemployment. In this study attention is also paid to effects of other variables including education, gender, age, marital status, etc. The Finn *et al.* (2012) on the other hand, was not based on theories of economic development and it did not differentiate across different types of migration.

Using the classical Lewis model, rural-urban migrants would be expected to perform better than non-migrants in rural areas. In the Todaro model, rural-urban migrants would catch up to urban non-movers. Rural-urban migrants may perform much worse than non-movers in urban and rural areas because of socio-economic factors that may lead to their unemployment (Lall *et al.*, 2006). If the informal sector is introduced into the urban environment as a temporary option for migrants (Kocher, 2004 in Lall *et al.*, 2006) then we could expect to find a higher proportion of rural-urban migrants in informal jobs compared non-migrants. We can also expect a higher proportion of non-migrants in better (or formal) jobs given their advantage with respect to time needed to adjust when arriving in urban areas. For the same reasons of limited opportunities we could expect recent rural-urban migrants to be mostly unemployed compared to other groups in urban settings. Hence, like Cornwell and Inder (2004) we expected rural-urban migrants to perform poorly especially in formal employment. We therefore explore these possibilities in the two waves of the NIDS by putting three postulations forward:

- i) Compared to local urban residents, migrants from rural to urban areas experience lower rates of formal employment ($P_f < P$),
- ii) The same migrants experience higher rates of informal employment ($P_n >$), and
- iii) The migrants are over represented among the unemployed ($P_u > u$).

¹² This study did not differentiate on migrant types, e.g. rural-urban migrant versus urban-urban migrant. It also divided the labour force only into three broad categories of employment, strict and discourage unemployment.

A FORMAL DERIVATION OF THE POSTULATIONS

Following the Cornwell and Inder (2004) example we derive the three postulations for this study. In their framework an implicit assumption of the Harris and Todaro (1970) model is used that migrants would take over all available jobs in the urban sector. This assumption provides parameters to the model to allow varied potential outcomes for migrants including our own postulations.

It is assumed that the total labour force (L) at the start of some given year comprises of people already in the formal sector (F), those in the informal sector (N) and the unemployed (U):

$$L = F + N + U \dots\dots\dots(2)$$

It is also assumed that the proportions of F and N remain constant in L over time. This means that $f = F/L$, $n = N/L$, $u = U/L$, where f, n, and u are all constants.

If the rate of rural-urban migration per year (λ) is a proportion of the labour force (L) at the start of the year, then it follows that the number of new migrants is λL . This also represents the annual growth rate of L. If the annual turnover in formal urban jobs (γ) is also the proportion of F then the number of new formal jobs per year is γF . The probabilities of recent migrants becoming formally or informally employed or becoming unemployed can then be considered separately and presented using the following equations.

The probability of migrants finding formal employment (Pf) is:

$$Pf = f(\gamma + \lambda) / (1 + \lambda - f(1 - \gamma)) \dots\dots\dots(3)$$

The probability of migrants finding an informal job (Pn) is:

$$Pn = n(1 - Pf) / (1 - f) \dots\dots\dots(4)$$

The probability of migrants becoming unemployed (Pu) is:

$$Pu = u(1 - Pf) / (1 - f) \dots\dots\dots(5)$$

Equations (3), (4) and (5) provide the probabilities and parameters of recent migrants becoming formally or informally employed as well as becoming unemployed as they enter urban areas. The parameters allow for more realistic predictions of the rates of migrant participation in the three sectors. While the Harris-Todaro model predicts that recent migrants would take over all new jobs in the urban areas, the parameters allow for differences in the rates of new migrant's employment and unemployment rates versus the rates of the urban labour force.

If in equation (3), $\gamma = 1$ (meaning that there is a 100% turn over in formal jobs every year), then $Pf = f$, which means that every formal job available (i.e. f) is taken by recent migrants (i.e. Pf). We know however that if everyone stands an equal chance of becoming employed across all labour markets and also of being unemployed, then not all new jobs will go to recent migrants. A more realistic case to predict would be that $\gamma < 1 < \gamma$, which would imply that $Pf < f$, meaning that the rate of formal employment for recent migrants is smaller than the rate for the whole urban community. This is the first postulation (i) made in the preceding section.

If on the other hand, $P_f < f$ then $P_n > n$, this means that the rate of employment of recent migrants in the informal sector would be higher than for the whole urban economy. This is the second postulation (ii). Similarly the rate of unemployment for the recent migrants would be higher than for everybody else in the urban economy ($P_u > u$), which is the third postulation (iii).

Using these postulations the paper explores the NIDS datasets to find out whether migrants and the rural-urban group especially performs better or worse than the urban subsample with respect to labour market participation, including unemployment.¹³ From theory it is predicted that rural-urban migrants would be overly represented in the unemployment and informal sectors but under represented in the formal sector.

13 Cornwell and Inder (2004) exploration of the 1990s OHS datasets did not include unemployment.

SOME DESCRIPTIVE STATISTICS

Some descriptive statistics are presented to expose the more obvious patterns in the data. The gender representation in migration for the whole sample and by migration categories is presented in Table 1. As already mentioned, migration is defined narrowly as detectable¹⁴ relocations from one geographical area to another between 2008 and 2010. The paper uses the geo-code of Statistics South Africa (SSA) to identify and detect movements across four different types of location, namely:

- i) Traditional or tribal area,
- ii) Rural commercial
- iii) Urban, and
- iv) Urban informal

The first two location types (i.e. tribal and rural commercial) were combined and presented as rural location and the last two constituted the urban location. The movements across these two broad locations were used to identify relocations and create the migration categories for discussion. Hence the migration discussion does not explore the dynamics of temporary or permanent migration patterns¹⁵ typical to Apartheid South Africa, of which some are discussed in Posel (2009).

Migration patterns with respect to gender show a slight bias towards male migration in the NIDS data. Slightly more men are still likely to move around compared to women (+2.02% versus -3.02%*¹⁶).

¹⁴ This is from the data records that can be made publically available without risk of compromising the identity of respondents.

¹⁵ It is acknowledged that the discussions of such dynamics would have been insightful and their lack is a weakness in the paper.

¹⁶ Although almost 58% of the sample (adults 15 and older) is female, only 55% of migrants are female, hence females are relatively under-represented among migrants. Even though more men still move around, here it is not disputed that female migration has been on the rise in post-Apartheid South Africa as indicated in Posel (2009).

The number of females who move from urban to rural areas, on the other hand, is slightly higher, but the sub-sample may be too small to be conclusive. The number of people migrating from rural to urban areas is higher than for urban to rural migration, although it is cautioned again that the two sub-samples are small (n=221 and n=131, respectively) with only two waves of the NIDS survey undertaken.

In Table 2, the distribution of earned incomes¹⁷ for migration and age categories are presented. For the same migration category, the number of years spent at school is also given, including for those who did not move and for the whole sample.

With respect to earned income, migrants outperformed everyone else in the sample (R2000 > R1800). Those who did not move had the lowest incomes (R1689). This reinforces findings by Finn et al. (2012), although they looked at welfare gains using the income per capita variable. An increase in age was also associated with increasing earned incomes reaching a maximum (R1900) per month on average for the (31 to 45) years old group. Incomes dropped markedly after the normal retirement age of 60 years old. Hence the lowest earners were either the very young or very old as illustrated in Graph 1.

The groups with the lowest average incomes (e.g. above 60 years old) were also more likely to be relatively economically inactive or unemployed, as discussed formally later in the next section. Age was also inversely associated with mobility. A higher relative proportion of migration occurred among younger respondents, which is illustrated in higher relative percentages in column three of Table 3. The

¹⁷ Earned income is used instead of just the wage, because this study looks at incomes from formal, informal and self-employment. From the NIDS data, this is a sum of self-employment, casual and formal net wages.

Table 1: Migration by gender

Migration pattern by gender in %					
Gender	Rural to urban n = 221	Urban to rural n = 131	Did not move n = 1632	All migration n = 19 596	Sample n = 19 596
Males	100 (45.25%)	51 (38.93%)	6009 (42.02%)	735 (45.04%)*	8311 (42.41%)
Female	121 (54.75%)	80 (61.07%)	8292 (57.98%)	897 (54.96%)*	11285 (57.59%)

Table 2: Median monthly wages (Rands) and years of schooling by migration and age groups

Income by migration and age						
Migration		Rural to Urban areas	Urban to Rural areas	Did not move	All movements	Sample
Earned income	Median	R 2050 (Std. 2941) (n=83)	R 2060 (Std. 3859) (n=43)	R 1689 (Std. 3507) (n=3777)	R 2000 (Std. 3615) (n=371)	R 1800 (Std. 8322) (n=5053)
Years in school	Median	11 (Std. 3.89)	11 (Std. 4.30)	9 (Std. 4.93)	10 (Std. 4.59)	9 (Std. 4.85)
Age		15–30 years	31–45 years	46–60 years	61–76 years	Sample
Earned income	Median	R 1580 (Std. 2452) (n= 1560)	R 1900 (Std. 5244) (n= 2053)	R 1800 (Std. 14465.76) (n=1315)	R 1435 (Std. 6683) (n=122)	R 1800 (Std. 8322) (n=5053)
Years in school	Median	10 (Std. 3.2) (n=8313)	10 (Std. 5.0) (n=4697)	7 (Std.6.8) (n=3581)	3 (Std. 4.1) (n=2315)	9 (Std. 4.8) -19595

Table 3: Relative migration by age groups

Migration			
Age group	Did not move	All types of migration	Total
15–30	5 457 -39%	1 117 -58%	6 574 -42%
31–45	3 392 -25%	514 -27%	3 906 -25%
46–60	2 937 -21%	180 11%	3 147 -20%
61 and above	2 012 -15%	75 -4%	2 100 -13%
Total	13 798 -100%	1 577 -100%	15 727 -100%

Graph 1: Earned income by age groups

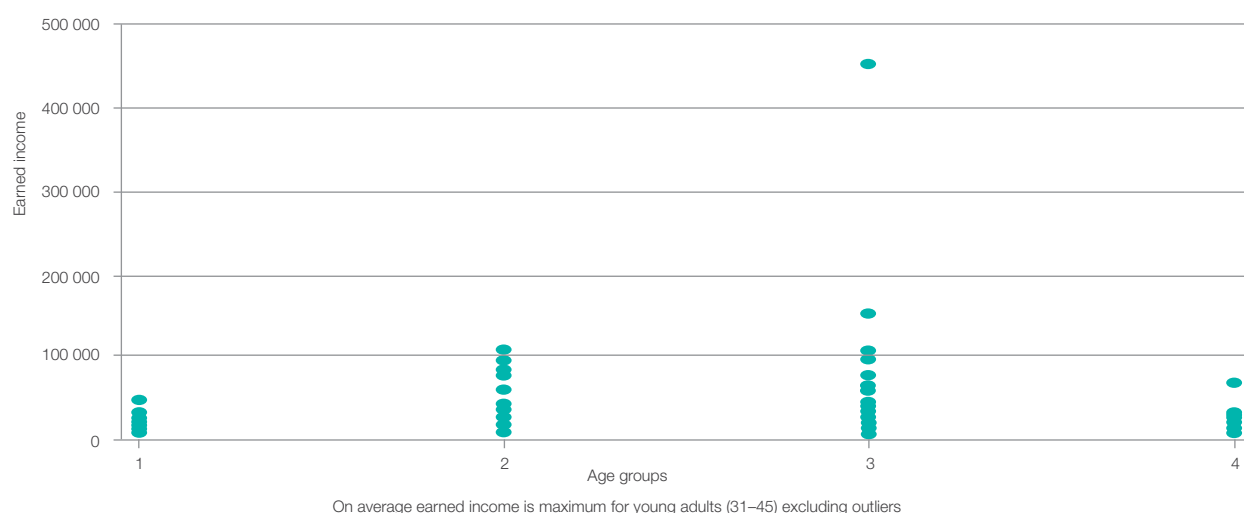


Table 4: Labour market by migration categories

Migration type				
Employment status	Non-movers	All migrants	Rural to urban	Urban to rural
Economically inactive	7 484 -93,80%	389 -4,90%	70 -0,90%	37 -0,46%
Unemployed (broad)	1752 -90,70%	120 -6,21%	35 -1,81%	24 -1,24%
Informally employed	1263 -89,40%	114 -8,00%	28 -1,98%	8 -0,57%
Formally employed	2016 -87,20%	222 -9,39%	49 -2,07%	31 -1,31%

table shows that with an increase in age, respondents were relative less likely to migrate.

In the formal model presented in Table 5, we also see that the youth (15 to 30 years old) are more likely to be unemployed. Young adults (31 to 45 years old) are more likely to be either formally or informally employed than any other age group. The probabilistic effects of education¹⁸ on labour market participation are discussed formally in the coming section. A breakdown of observations in each of the labour market categories (economically inactive, unemployed, informally employed and formally employed) is presented in Table 4.

From Table 4 it can be seen that the proportional representation of all migrants (column 3) increased from categories of economically inactive to formally employed and so did the representation of rural to urban migrants. The opposite pattern is observed for non-movers. The representation of urban to rural migrants was not systematic and was lowest in informal employment.¹⁹ In the labour force, the representation of non-movers was biggest in the unemployment sector and lowest in formal employment. These patterns are well captured in the multinomial logistical model which also provides the levels reliability for each of the variable categories. The indicators of statistical significance or data reliability (e.g. p-values) are important because the small sizes of migration sub-samples.

In sum, the statistics in Table 1 show that gender only had minimal influence on migration in general,

although it was still dominated by males, except for urban-rural migration. But the sub-samples seemed small. In Table 2, migration is associated with higher earned incomes than non-migrants. There is also a positive relationship between earned income and age. In Table 3, the youth (15 to 30 years old) and young adults (31 to 45 years old) are relatively more represented in groups who migrate than older respondents. Table 4 shows that all migrants (except for urban-rural) were better represented in the formal and informal employment categories, while a reverse pattern was found for non-migrants.

As mentioned already, a multinomial logistical model was used to verify the magnitudes and reliabilities of the patterns presented in preceding descriptions against the theoretical postulations made with respect to the labour force. The model explores the log odds²⁰ of participating in different types of the labour market against the economically inactive. For example, those are relative log odds of being,

- i) economically inactive for different types of migration, age, gender, marital and race groups with specified levels of school education
- ii) compared to the odds of being unemployed for the same groups,
- iii) compared to the log odds of being informally employed, and
- iv) compared to the log odds of being formally employed.

The model predicts, for example, *what* the relative odds changes *would be* of a likelihood that a migrant is unemployed compared to being

¹⁸ Not just years in school.

¹⁹ A note around this pattern is made in the discussion of the formal model.

²⁰ Where the odds of an event happening is $P/(1 - P)$. And P = Probability of an event happening.

economically inactive *and* relative to the odds facing a non-migrating respondent, etc. The model is, therefore, based on comparisons of chances or odds in employment status for a given group of respondents being compared to some other group (i.e. the dependent base – which in this case is the economically inactive). Table 2 indicated that median

earned incomes of migrants (rural-urban and urban-rural) were comparatively higher than those of other groups. Hence the model would predict what the changes in chances for these groups are of being found in any type of employment (from which the earnings were likely to be derived).

PARTICIPATION IN THE LABOUR MARKET PROBABILITIES

In this section and throughout the presentation of the multinomial model we explore the magnitude and validity of the three postulations made in Section four (i.e. **Pf<f**, **Pn>n** and **Pu>u**). The descriptive data in preceding sections are used alongside the model results to support and inform the evaluation and discussion.

Changes in the relative odds of being unemployed, informally or formally employed against being inactive

The NIDS (2008 and 2010) differentiates between those who are unemployed from those who are employed. It also differentiates the unemployed in the narrow and broad senses by identifying discouraged job seekers. It also identifies those who are economically active and these form the biggest proportion of the employment status variable, which is the dependent variable in the model. In this discussion, however, only the broad definition of unemployment is adopted. Moreover, a differentiation is made between those formally and informally employed. Firstly, the formal employment variable was derived from indications of written employment agreements and/or formal business registrations. Secondly, the informal employment variable was derived from a presence of verbal work contracts and/or unregistered business²¹. With the derivation of the variables, the employment status variable was then composed of four categories, namely, the economically inactive, unemployed, informally employed and formally employed.

In other words, the model specifies that the employment status (dependent variable) has four categories, namely:

- i) Economically inactive
- ii) Unemployment,
- iii) Informal employment, and
- iv) Formal employment

And the changes in the log odds of being in either one of the above categories depend on the effects of falling in the following categorical or dummy variables (i.e. explanatory variables):

- i) Migration [never migrated **or** general (all types of) migration **or** rural-urban migration **or** urban-rural migration],
- ii) Gender (male **or** female),
- iii) Age-group [15 to 30 years old (youth) **or** 31 to 45 years old (young adult) **or** 46 to 60 years old (matured adult) **or** above 60 years old (senior)],
- iv) Matric [possessing a matric certificate only **or** no matric],
- v) No-education [having not attended school **or** having some school education],
- vi) Married [married **or** not married],
- vii) Race [Black Africa **or** Coloured **or** India **or** White]

A multinomial model with a dependent (y) variable with four categories has three corresponding parts. This is because the first category is used as the base against which the changes in the odds of falling into the other three categories are compared. Additionally, all other explanatory (x) variables which are also categorical in the equation are treated in a similar manner, where the first category is the base for comparing the odds of individuals falling into other categories. Formally the model specifies that:

²¹ These definitions are only approximations of what are really difficult employment categories to discover in real life labour force surveys, especially with respect to informal employment.

Employment status = f (migration; gender; age; possession of matric certificate; possession of zero education; marital status; race), which is:

$$\ln(P(\text{LM-unemployment})/P(\text{LM-economically inactive})) = b_1 + b_2(m=2) + b_3(m=3) + b_4(m=4) + b_5(g=1) + b_6(\text{age}=2) + b_7(\text{age}=3) + b_8(\text{age}=4) + b_9(om=1) + b_{10}(\text{no-educ}=1) + b_{11}(\text{mar}=1) + b_{12}(r=2) + b_{13}(r=3) + b_{14}(r=4)$$

$$\ln(P(\text{LM-informal employment})/P(\text{LM-economically active})) = b_1 + b_2(m=2) + b_3(m=3) + b_4(m=4) + b_5(g=1) + b_6(\text{age}=2) + b_7(\text{age}=3) + b_8(\text{age}=4) + b_9(om=1) + b_{10}(\text{no-educ}=1) + b_{11}(\text{mar}=1) + b_{12}(r=2) + b_{13}(r=3) + b_{14}(r=4)$$

AND

$$\ln(P(\text{LM-formal employment})/P(\text{LM-economically inactive})) = b_1 + b_2(m=2) + b_3(m=3) + b_4(m=4) + b_5(g=1) + b_6(\text{age}=2) + b_7(\text{age}=3) + b_8(\text{age}=4) + b_9(om=1) + b_{10}(\text{no-educ}=1) + b_{11}(\text{mar}=1) + b_{12}(r=1) + b_{13}(r=3) + b_{14}(r=4) \dots (6)$$

Where:

Results from the economically inactive group are compared to results of unemployment, informal employment and formal employment groups, respectively.

Ln	= Natural log
LM	= Labour market
P	= Probability
bs	= regression coefficients
m	= migration status
g	= gender status
age	= age group
om	= only matric possessed
no-educ	= no education
mar	= marital status
r	= race

The logistical estimates of the log odds changes in equation (6) are presented in Table 5 below. The overall p-value < 0.001 of the model tells us that ‘the model as a whole fits significantly better than an empty model’ (Bruin, 2006). In part A of the model, for example, a change in the odds of being unemployed as compared to a change in the odds of being economically inactive (by having migrated to any location – compared to having not migrated) were associated with a 0.1682 point increase, but this was not statistically significant (p=0.146). Overall, migration as a whole did not have statistically significant or reliable effects on the status of individuals from being economically inactive to being unemployed. But being female did decrease the relative odds of being unemployed from being

economically inactive by -0.1757 points and this was a statistically reliable result (p=0.002). Being young (15 to 30 years old) also had a marked positive effect (0.6748) of reliably (p=0.000) changing the status of individuals from being economically inactive to being unemployed. In short, unlike for those above the normal retirement of 60 years old, being young reliably increase the chances of being unemployed from being economically inactive.

In Part B, migration, especially from rural to urban areas positively (0.9323) and reliably (p=0.00) affected the chances of being informally employed against staying economically inactive. Having migrated from an urban to a rural area, on the other hand, decreased those chances (-0.2554), but this pattern was not statistically reliable (p=0.955). Other reliable (although marginal) effects on finding informal employment against being inactive came from being in the age groups (15 to 30) and (31 to 45) years old, with relative odds of 0.0832 and 0.0945 points, respectively. Being older (above 60 years old) reliably (p=0.00) and markedly (-1.117) decreased the odds by. Possessing a Matric also improved (0.452) reliably (p=0.00) chances of being informally employed against being inactive. But having no education whatsoever on the other had limited (-0.247) those likelihoods at above 95% level of confidence (p=0.018). The effects of being informally employed against being economically inactive were negative from being female (-0.577) and the pattern was reliable (p=0.00). In essence, having no education had similar effects to being female in the model. Being married was not a reliable predictor (p=0.66) of being in informal employment. Only being Coloured reliably (p=0.00) predicted (by 0.5112 points) the improved chances of being informally employed.

In Part C, **all migration** types improved the chances of finding formal work from being economically inactive reliably (min p=002) and the improved chances were in the same range (0.716 to 0.963 odd points). More so than for informal employment, **being female** had reliably negative effects on improving chances of being in formal employment (-1.083, p=0.00). The effect was **worse than having no education** (-0.899). Possessing a **Matric** had the second highest impact (behind young adult) on

Table 5: Multinomial logistical results

Margins of migration categories	Number of obs	=	11887			
	LR chi2(39)	=	3279.23			
	Prob > chi2	=	0.0000			
	Log likelihood	=	-11544.169			
	Pseudo R2	=	0.1244			
Labour market or Employment status	Coef.	Std. E.	z	P>z	(95% Conf. Int.)	
Economically inactive	(base outcome)					
A.Unemployed						
Migration						
G_M (general)	0,1682041	0,1155931	1,46	0,146	-0,0583541	0,3947623
R_U (rural-urban)	0,4174881	0,2216065	1,88	0,06	-0,0168526	0,8518288
U_R (urban-rural)	0,7313968	0,2887255	2,53	0,011	0,1655053	1,297288
Gender						
Female	-0,175764	0,0568197	-3,09	0,002	-0,2871287	-0,0643994
Age group (years)						
31-45	0,6748517	0,0709991	9,51	0	0,535696	0,8140073
46-60	-0,2805962	0,0929405	-3,02	0,003	-0,4627563	-0,098436
60 -	-2,133988	0,1692709	-12,61	0	-2,465753	-1,802223
Matric only						
Yes	0,6738075	0,0716241	9,41	0	0,5334269	0,8141882
Zero education						
Yes	-0,2650915	0,1105993	-2,4	0,017	-0,4818621	-0,048321
Married						
Yes	-0,0765846	0,0801261	-0,96	0,339	-0,2336288	0,0804597
Race						
Coloured	0,3787695	0,0812777	4,66	0	0,2194681	0,5380709
Asian/India	0,0946028	0,2724272	0,35	0,728	-0,4393447	0,6285503
White	-0,7540456	0,3017053	-2,5	0,012	-1,345377	-0,1627141
Const.	-1,301904	0,0531465	-24,5	0	-1,406069	-1,197739
B. Informally employed						
Migration						
G_M (general)	0,6229008	0,1247275	4,99	0	0,3784394	0,8673622
R_U (rural-urban)	0,9323562	0,2462526	3,79	0	0,4497099	1,415003
U_R (urban-rural)	-0,0255408	0,454927	-0,06	0,955	-0,9171813	0,8660996
Gender						
Female	-0,5771745	0,0641892	-8,99	0	-0,7029831	-0,4513658
Age group (years)						
31-45	1,637275	0,0832172	19,67	0	1,474172	1,800378
46-60	1,128644	0,0949569	11,89	0	0,9425323	1,314757
60 -	-1,117069	0,1666692	-6,7	0	-1,443735	-0,7904033
Matric only						
Yes	0,4519775	0,0922506	4,9	0	0,2711696	0,6327854
Zero education						
Yes	-0,2470879	0,1043584	-2,37	0,018	-0,4516265	-0,0425492
Married						
Yes	0,0341046	0,0778902	0,44	0,661	-0,1185573	0,1867666
Race						
Coloured	0,5111629	0,0881343	5,8	0	0,3384228	0,683903
Asian/India	-0,1480777	0,3266133	-0,45	0,65	-0,788228	0,4920726
White	0,3627149	0,2132918	1,7	0,089	-0,0553294	0,7807591
Const.	-2,094782	0,0689277	-30,39	0	-2,229878	-1,959686

Table 5 continued: Multinomial logistical results

Margins of migration categories	Number of obs	=	11887			
	LR chi2(39)	=	3279.23			
	Prob > chi2	=	0.0000			
	Log likelihood	=	-11544.169			
	Pseudo R2	=	0.1244			
Labour market or Employment status	Coef.	Std. E.	z	P>z	(95% Conf. Int.)	
Economically inactive	(base outcome)					
C. Formally employed						
Migration						
G_M (general)	0,716334	0,1169931	6,12	0	0,4870317	0,9456363
R_U (rural-urban)	0,9499513	0,2312583	4,11	0	0,4966934	1,403209
U_R (urban-rural)	0,9639022	0,3083955	3,13	0,002	0,359458	1,568346
Gender						
Female	-1,083004	0,0620088	-17,47	0	-1,204539	-0,961469
Age group (years)						
31-45	1,733811	0,0799942	21,67	0	1,577026	1,890597
46-60	1,191432	0,0948392	12,56	0	1,00555	1,377313
60 -	-1,570538	0,1972201	-7,96	0	-1,957082	-1,183994
Matric only						
Yes	1,536889	0,0749345	20,51	0	1,39002	1,683757
Zero education						
Yes	-0,8999681	0,1346775	-6,68	0	-1,163931	-0,6360049
Married						
Yes	0,4088154	0,0754866	5,42	0	0,2608644	0,5567664
Race						
Coloured	1,028536	0,0788806	13,04	0	0,8739329	1,183139
Asian/India	0,1372684	0,265886	0,52	0,606	-0,3838585	0,6583954
White	0,4269532	0,1847148	2,31	0,021	0,0649189	0,7889874
Const.	-2,125495	0,0667204	-31,86	0	-2,256265	-1,994725

improving formal employment chances. Marriage did improve reliably the chances of being formally employed. Again being a senior (> 60 years old) decreased the chances of being in the formal employment sector. Except for Asians, race was also a statistically significant factor in being formally employed. Compared to being Black, for example, being Coloured or White improved individual chances of being formally employed compared to being inactive.

The model shows that migration (like marital status and being Indian) was not reliable in predicting what will happen to the odds of individuals moving from being economically inactive to being unemployed. Within the labour force, however, many of the chosen variables were statistically significant. In addition, with the exception of being female, much older, and having no education, the variables increased the chances of being either informally or formally employed from being economically inactive.

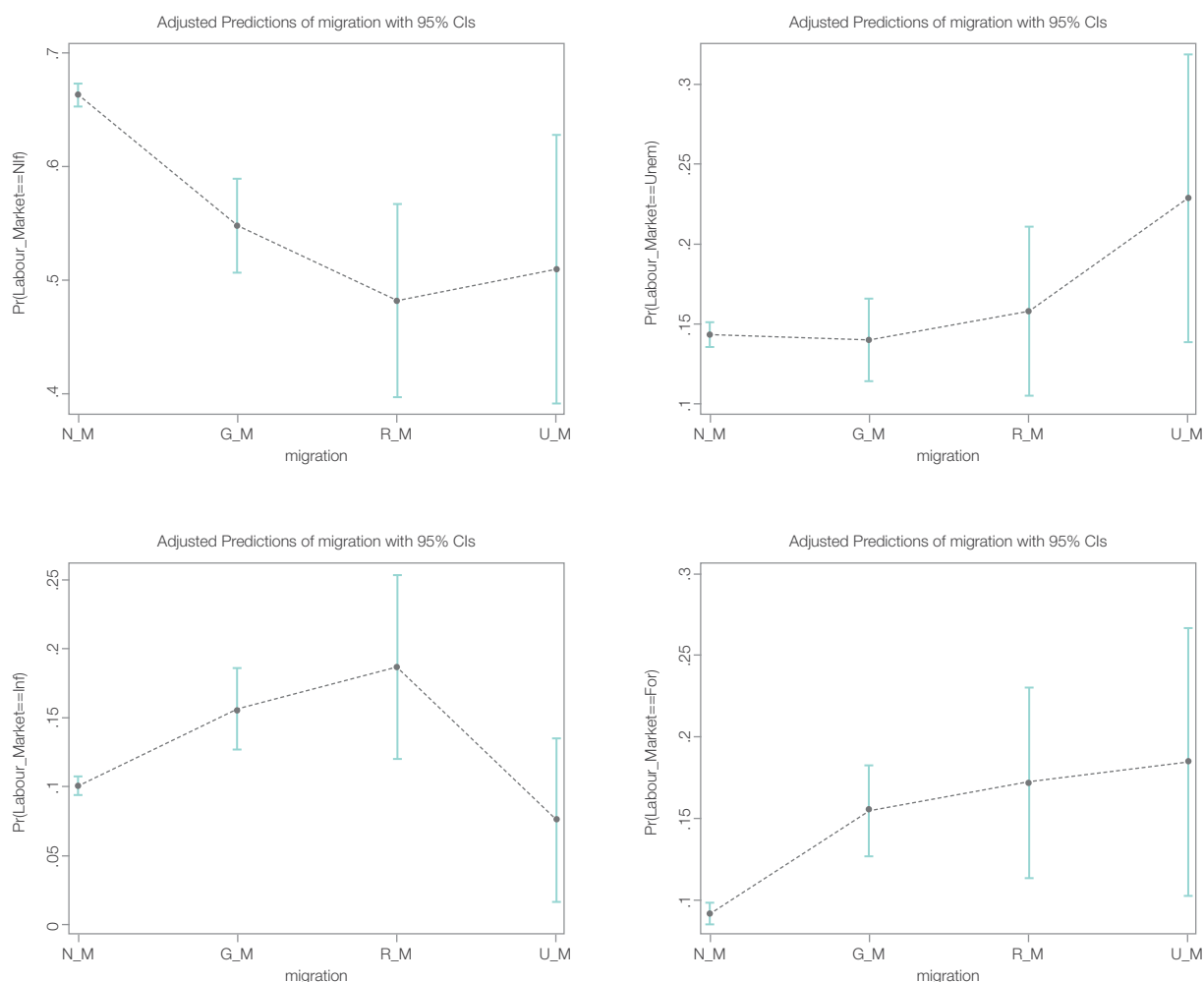
Urban-rural migration surprisingly led to improved chances of finding formal work, but decreased chances of finding informal work. The informal employment pattern was however not quite reliable at 95% level of confidence ($p=0.06$).²²

To visually illustrate the meaning of the coefficients of the model, Graph 2²³ shows the relative predicted probabilities of all four employment status against the four migration categories, while holding constant all other variables at their means. The graph can be read alongside patterns presented in Table 5. For example, in Part C of Table 5 it was reported that the changes in relative log odds of being formally employed increased from the odds of being

22 With increased sample sizes from future NIDS waves the pattern (if reliable), will need further interrogation. The interrogation would also need to look at what kind of work (formal or informal) is reported predominantly in rural versus urban areas.

23 In Graph 2: Panel 1 = Economically inactive = Top left; Panel 2 = Unemployed = Top right; Panel 3 = Informal employment = Bottom left; Panel 4 = Formal employment = Bottom right

Graph 2: The margins plot of the relative probabilities of the four labour market outcomes



economically inactive for migration versus non-migration. This means, for example, that the percentage share of formal employment of migrants (generally) (15.55%) was higher than the percentage share of formal employment of non-migrants (9.1%). Migrants performed better than non-migrants in formal employment. But with respect to the economically inactive, the share of non-migrants was higher than the share of migrants (i.e. 66.3% > 54.8%). Similar results are found for the informal sector, where migrants in general (15.6%) outperform non-migrants (10.1%) in terms of respective percentage shares. The percentage shares are presented in the Appendix for all categories in the model and the shares come directly from the model.

If the comparison is made between formal employment performances of migrants against unemployment performance of the same migrants the picture is clearer. Migrants in general improve their shares from 14.0% to 15.5% and we have seen that the improvement is significant in Table 5. Nonetheless, graphs similar to Graph 2 can be generated for all other variables to illustrate further the results in Table 5.

In summary, migration in general led to better labour market outcomes in terms of increased chances of finding formal and informal employment. Migration

from a rural to an urban area also led to better opportunities in both formal and informal labour markets, so were the other chosen explanatory variables with the exception of being female, being much older and having no education. With respect to rural-urban migrants, this NIDS data display patterns that support only partially the postulations made from theory. For example, rural-urban migrants outperform non-migrants in the informal sector and in the formal sector (i.e. $P_f > f$ and $P_n > n$ instead of $P_f < f$ and $P_n > n$). Migrants outperformed non-migrants in terms of labour market outcomes, we saw in Table 2 that urban to rural and rural to urban migrants also outperformed other groups with respect to earned incomes (i.e. $R_{2050} > R_{1800}$). These also spent the highest number of years at school (11 years) compared to all groups combined (9 years). In any case, the patterns indicate the interconnectedness of related measures that are generally explored in labour market investigations (i.e. the linkages between employment probabilities, incomes, age, gender and education).

Many explored variables had notable positive impacts on the probabilities of finding different types of employment and were also generally statistically reliable. It may be important to note that while being young (15 to 30 years old)²⁴ was not rewarded highly in the labour market and also in terms of earned incomes, having a Matric on the other hand was rewarded highly in terms of formal employment. This observation may be important for policies attempting to link skills acquisition and youth unemployment. This is especially the case because migration was skewed towards the youth and young adults. The youth constituted 58% of those migrating against 39% of the youth who did not migrate.

24 For ages below 60 years old.

SUMMARY DISCUSSION AND IMPLICATIONS FOR POLICY AND FURTHER RESEARCH

The conclusions drawn in the paper take cognisance of the fact that labour market outcomes are not always exogenous to the decisions to migrate. Individuals who have already found work will probably migrate. In those cases individuals would not be migrating first before finding work. Hence, we need to be aware that some of the relationships found in the model could be over estimations, as the model does not control for endogenous factors. From descriptive statistics and the model we found that migration, education (e.g. Matric), age and gender variables were the most important in determining both the incomes of respondents and in determining whether or not individuals would be informally or formally employed or unemployed or outside the labour force. Migration effects were often notably positive and reliable in predicting the increasing odds of labour market participation.

The descriptive data and model predictions supported only two of three postulations made in the paper. As postulated, all migrants, including rural-urban migrants, were more likely than non-migrants to be unemployed ($P_{u>u}$) as opposed to being outside the labour force, although the results were only stable at $p=0.06$ or more for rural-urban and urban-rural migrants, respectively. With the exception of urban-rural migrants, all other migrants, including rural-urban, were more likely than non-migrants to be informally employed against being economically inactive ($P_{n>n}$). The result for urban-rural migrants to be informally employed was however unstable (i.e. $p=0.955$). It was surprising to find a high probability of urban-rural migrants to be formally employed against being informally employed ($18.5\% > 7.6\%$). This discussion needs further exploration as mentioned already. But generally and from postulations it was expected that migrants (including rural-urban migrants) would not be more likely to participate in formal employment compared

to non-migrants (i.e. $P_{f>f}$). But this was strongly the case in this dataset as it was found to be the case in OHS data (Cornwell and Inder, 2004).

Even though South Africa no longer has direct policy controls on internal migration as pointed out by Posel (2009), migration was still mostly undertaken by the youth (15 to 30 years old) and young adults (31 to 45 years old) compared to seniors over the age of 45 years old in this data. From the discussion of literature it was expected that young people and those who possessed higher levels of education and earned higher incomes and those who were more likely to participate in the labour market formed a cohort that was better prepared to migrate around different locations. This relates to the existence of other pull factors, and the point that labour market outcomes are not always exogenous to the decision to migrate. For these groups the decision to migrate may have posed low levels of risk because of existing pull factors, such as having already found employment at destination. The implication is that the decision to migrate for a number of individuals was less determined by the quest to find employment (a push factor) but by current endowments (e.g. a high enough level of income from available employment possibilities, which were compounded by having completed at least a Matric)²⁵. And this could be one of the reasons why Finn et al. (2012:12) found that, irrespective of destination and original location, migrants experienced higher income²⁶ gains per capita between 2008 and 2010 in the NIDS datasets. The finding is corroborated and made explicit in this paper with respect to all types of migration and for individually earned incomes.

25 Refer to Banerjee, 1991 in Lall et al., 2006 discussion in Section 3.

26 Household income per capita.

It can be argued that, in this dynamic system, national skills strategies could at some level be formulated to encourage only migrations that would lead to employment opportunities or a completion of some level of education, especially for the youth. Encouraging the youth to complete a Matric, for example, whether as migrants or not, would most likely lead to higher chances of them finding work especially in the formal sector, and may also lead to future migrations. In this sense, the right strategies would create a virtuous circle. While it is possible that a positive effect on one of the variables would have an effect on the whole system, a coordinated policy approach targeting more than one variable would most likely be more effective.

While some patterns have emerged from the NIDS data with respect to recent internal migration, age related performances in the labour market, incomes, education, etc., it is likely that the patterns would become more reliable with the next waves of the study. It would also be productive for other publically funded national surveys to include modules that would be comparable to the NIDS dataset for better reliability in future results. This point is related to Posel's (2010) arguments about the need for continuing collecting good migration data.

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APPENDIX

Adjusted marginal probability predictions for employment status against migration types

Margins of migration categories	Number of obs	=	11887			
	LR chi2(39)	=	3279.23			
	Prob > chi2	=	0.0000			
	Log likelihood	=	-11544.169			
	Pseudo R2	=	0.1244			
	Margin	Std. E.	z	P>z	(95% Conf. Int.)	
Outcome 0 – Economically inactive						
Migration						
N_M	0,6632457	0,0054869	120,88	0.000	0,6524915	0,6739998
G_M	0,5481114	0,021135	25,93	0.000	0,5066875	0,5895352
R_U	0,4819492	0,0434619	11,09	0.000	0,3967655	0,5671329
U_R	0,5098164	0,0608577	8,38	0.000	0,3905375	0,6290952
Outcome 1 – Unemployed						
Migration						
N_M	0,1435228	0,0041995	34,18	0.000	0,1352919	0,1517536
G_M	0,1403348	0,0130076	10,79	0.000	0,1148404	0,1658291
R_U	0,158329	0,0270336	5,86	0.000	0,105344	0,2113139
U_R	0,229246	0,0460969	4,97	0.000	0,1388977	0,3195943
Outcome 2 – Informally employed						
Migration						
N_M	0,1014911	0,0034305	29,58	0.000	0,0947675	0,1082148
G_M	0,1563669	0,0149537	10,46	0.000	0,1270582	0,1856756
R_U	0,1873579	0,0341694	5,48	0.000	0,1203871	0,2543287
U_R	0,0760458	0,0302536	2,51	0,012	0,0167498	0,1353418
Outcome 3 – Formally employed						
Migration						
N_M	0,0917405	0,0035708	25,69	0.000	0,0847419	0,098739
G_M	0,155187	0,0140899	11,01	0.000	0,1275713	0,1828026
R_U	0,1723639	0,0297745	5,79	0.000	0,1140071	0,2307208
U_R	0,1848919	0,0417399	4,43	0.000	0,1030832	0,2667005