Social protection and labor market outcomes in South Africa

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Introduction

Understanding the barriers to youth employment is important worldwide. The ILO warns of a "'scarred' generation of young people" who face low rates of employment and high rates of inactivity (ILO 2103). This concern is powerfully felt in South Africa, where unemployment rates are high for all age groups, but especially among youth. In addition, an Apartheid-driven spatial mismatch between workers and jobs leads to high search costs for people living in rural areas—costs that many young people cannot pay.

Differences in employment and unemployment by age and sector can be seen in Figure 1, which presents statistics on African men's labor market outcomes from the 2008 National Income Dynamics Survey (NIDS). The figure makes clear that men in rural areas are at significant disadvantage in the labor market. In each age group, they are less likely to be employed, and more likely to report they are discouraged, or not economically active. The statistics for men aged 25 to 35 are particularly telling: only 44 percent of men in rural areas in this age group report employment. Twenty-two percent are unemployed, 9 percent report being discouraged and fully a quarter are not economically active. In addition to the employment advantage observed for men in urban areas, there is also an earnings advantage: among African men aged 18 to 50 reporting that they are employed, on average men in urban areas earn 3066 Rand per month, while those in rural areas earn 2232 Rand.

Many avenues have been explored to try to turn these statistics around.[1] In this paper, we examine whether the arrival of a social grant – specifically a generous state old age pension given to men and women above prime age – enhances the employment prospects of rural households' younger male adults—those aged 18 to 35 years old.[2] We focus on young men in this paper, because women's

[1] See Woolard (2012), and references there.

[2] The National Youth Development Agency defines 'youth' in South Africa as individuals aged 18 to 35. In some analyses, we will sub-divide this group, because we expect a relaxation of a financial constraint may have different

decisions on child bearing interact with both decisions made on tertiary education and employment. Almost half of all women in our data will have had a child prior to age 20 (Ardington, Menendez and Mutevedzi 2011). Modeling the interrelated choices young women must make is beyond the scope of the current paper.

Earlier work used a similar identification strategy to examine labor market effects of pension arrival and pension departure. Ardington et al. (2009) examined the extent to which credit constraints were binding on households' labor supply decisions, using the first two waves of socioeconomic data from the Africa Centre for Health and Population Studies, a demographic surveillance site in KwaZulu-Natal (KZN). They found that the arrival of a pension made it more likely that prime-aged men and women would leave to find work elsewhere. Conversely, the loss of a state old age pension in a household made it more likely that prime-aged migrant workers lost their migrant labor status.[3] This earlier work focused on the employment and labor migration of all prime-aged household members (aged 18 to 50), without making more than a cursory distinction of differences in the responses of younger adults and older adults to a relaxation of credit constraints. We might anticipate different effects on younger and older members for a number of reasons. The youngest adult members (18-24) may respond to the arrival of a pension by investing more in their educations, a response not available to older household members. Pensioners may prefer staking their children – who would generally be older prime aged workers – than other household members, including grandchildren. Alternatively, a change in the household's pension status might be expected to have a smaller effect on the labor market behavior of older prime-aged adults, who may be more established and less likely to be moved

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effects on the behavior of the two groups. The ILO/UN define youth as individuals aged 15 to 24. In South Africa, there is no evidence of people under age 18 working, so we restrict our analysis to young adults aged 18 and above.

[3] We define a labor migrant as an individual who is a non-resident member of a household in the surveillance site who is reported to be working.

by the arrival (or departure) of a pension. Younger adults, on average, also have more education than older prime-aged members, which might increase the odds that they migrate to find better work upon the arrival of a pension in the household.

Longitudinal economic data from this site are now available for the period from 2001 to 2011, much improving our ability to evaluate the impact of pension gain and loss over the medium term, instead of only the short term. Using 8 waves of longitudinal data on household resources and members' employment status from the Africa Centre, we find that young men are significantly more likely to become labor migrants when someone in their household becomes age-eligible for the old-age pension. More specifically, we find that pension gain is a significant force, encouraging migration for work, but only among those who have successfully completed high school (matric). On average, relative to other potential labor migrants, young men with a matric are 8 percentage points more likely to migrate for work when their households become pension eligible. A fraction of these younger men also respond to the pension gain by enrolling in tertiary education. Among young men who were observed as labor migrants, we find that, upon pension loss, it is the youngest men who are the most likely to return to their sending households, perhaps because they are the least likely to be self-sufficient at the point a pension is lost. Again, we find a significant role for education: among labor migrants, we find that education is protective against losing labor migrant status upon pension loss.

We will proceed as follows. Section II will introduce the Africa Centre data. Section III examines the extent to which pension arrival and departure affect individuals' labor market behavior, and Section IV examines the extent to which pension arrival is associated with additional investment in education among young adults.

II. Data

The Africa Centre has been collecting data annually on approximately 100,000 people in 11,000 households since its inception in January 2000. The demographic surveillance area (DSA) is a geographic region approximately 2.5 hours north of Durban. The field site, containing both a township and a tribal area, is located in a one of the poorest regions of KZN. Each year, every homestead in the DSA is visited twice, and a knowledgeable household member is asked to provide information on changes in household memberships and residencies, along with information on births, deaths, and changes in the marital status of its members. Household membership is a social construct, and an individual can be a member of multiple households in the DSA. However, at any one time, he or she can be resident in (at most) one household in the DSA.[4] In 8 data collection rounds over this period, a household socioeconomic module (HSE) was added to the questionnaire, covering such topics as asset ownership, self-reports of financial well-being, educational attainment of household members, and the employment status of adults.[5]

Summary statistics for prime-aged men in the field site are provided in Table 1, where we present means for men aged 18-24, 25-35, and 36-50, when observed in the most recent household socioeconomic module (HSE8, 2011). Approximately 40 percent of young men in each age group are a member of a household receiving a state old-age pension. We will identify an individual as a member of a pension household if any household in the DSA that claims him as a member has a resident member who is age-eligible for the pension. Women and men reaching a legislated age are eligible for a state pension if they will not receive a private sector pension. For women, that age has been 60 since change

[4] Approximately 30 percent of household members are non-resident in the DSA at any point in time, with the majority of those who are living away having migrated for employment. Multiple household membership is rare among young adults in the DSA, but exists for 4.6 percent of the young adult men (18-35) that we are following here.

[5] The HSE modules occurred in 2001 (HSE1), 2003-04 (HSE2), 2005 (HSE3), 2006 (HSE4), 2007 (HSE5), 2009 (HSE6), 2010 (HSE7) and 2011 (HSE8).

of government in 1994. For men, the age is now 60, having fallen in the last decade, in steps, from age 65. Take up of the state pension in the African community is approximately 80 percent. We will use age-eligibility of a household member as our marker of access to a pension, rather than a report of pension receipt, in order to side-step issues associated with selection into the pension. By international standards, the pension is generous –approximately twice per capita median African income each month – and represents a stable source of income into pension households. Pensioners generally live in multiple-generation households – often with children, grandchildren, and other kin. It is the arrival and departure of this income that we will use to gauge whether a relaxation of credit constraints affects employment and migration decisions for young adult men in rural areas.

There are marked differences in employment and school enrollment between men aged 18-24, and those in older age groups. Twenty-five percent of men in the youngest age category are reported to be working – while more that 60 percent of those aged 25-35 and 35-50 are reported to be employed. Fifteen percent of men aged 18-24 are reported as working migrants – a percentage that more than doubles at older ages. Thirty percent of men in the youngest category are enrolled in secondary schooling – true of only 3 percent of men aged 25 to 35. These differences will affect how the arrival and departure of a state old-age pension affect outcomes for men of different ages. One important economic marker that men in different age categories have in common is that fully a third of them are reported to be not employed and not in school.

Table 2 presents statistics on changes in household pension status between consecutive rounds of HSE surveys between HSE1 and HSE8. In order to be included in our analyses, young men will have to be observed in successive rounds. We have data on approximately 64,000 observations on 19,000 young men over this period. In approximately 5 percent of our observations for men aged 18-35, households will gain access to a pension. This most often occurs because a household member ages into the

pension. In 3 percent of our observations, households lost access to a pension between survey rounds. This can happen because a pensioner moves out of the DSA but, in the vast majority of cases of pension loss, this occurs because a pensioner dies.

We find pronounced age-labor migration profiles for prime-aged men, which we present in Figure 2. The profiles are different for individuals who were not labor migrants in the previous HSE round, and those who were. The top panel of Figure 2 presents the probability that an individual of a particular age will be observed as a labor migrant in this HSE round, if he was not one in the last round. We find that the probability rises steeply with age between the ages of 18 and 25, reaching a maximum probability of 24 percent at age 25, and declines monotonically thereafter. It appears, beyond age 25, that those who have not been labor migrants are less and less likely to migrate for work as they age. The bottom panel presents the probability that an individual who was a labor migrant when observed in the previous HSE round continues to be a labor migrant. This probability also rises steeply with age between 18 and 25 – but from a much higher base. The probability of maintaining migrant status continues to rise monotonically with age through age 50. We interpret this as a selection effect: when someone initially migrates to find work, he might not know whether he will be successful. Those who are successful remain working outside the DSA, while those who are not eventually return home. By 35, to take one example, a larger fraction of those who are migrants will be successful migrants than was true, say, at age 25, and they will carry on working outside of the DSA. In the analysis that follows, we will control for a quadratic in age to account for these age-labor migration patterns.

In what follows, we will analyze current migrants and potential migrants separately. Current migrants apparently had the wherewithal to overcome financial constraints they might have faced in order to migrate. We would not expect pension arrival to affect their decision on where to work. However, pension loss may force migrants to return to the DSA, if they had been subsidized with

pension income while they looked for a well-paying job. Potential migrants may find that pension gain offers them a chance to migrate, supporting them until they become financially independent.

III. The impact of pension receipt and loss

To estimate the impact of pension gain or loss on the labor market outcomes of young men, we begin with a regression model of the form:

$$y_{iht} = \beta P_{ht} + \gamma X_{iht} + \varepsilon_{iht}. \quad (1)$$

where y_{iht} is an indicator for labor migration (y =1 if non-resident in the DSA and reported working, =0 otherwise) for a young adult male i who is a member of household(s) h observed in HSE round t. This is modeled as a function of the presence of a household member who is age-eligible for the pension ($P_{ht} = 1$ if there is a pensioner resident in any household in the DSA that claims individual i as a member, =0 otherwise).

The vector X includes controls for the individual's age and age squared, in order to match the age-migration profiles we observed in Figure 2. We also include the number of resident members in the individual's household(s), and the date at which the information was collected about him.[6]

With data available from eight HSE survey rounds, we can estimate equation (1) allowing for individual fixed effects. We write the unobservable component of (1) as:

$$\varepsilon_{iht} = \alpha_i + u_{iht}, \quad (2)$$

[6] A person who is a member of multiple households may have information recorded on different dates within an HSE round. We assign each person the information collected for him on the latest date at which HSE information was collected for him within the HSE round.

where α_i is an individual-specific fixed effect. Its inclusion will control for all determinants of individual $i's$ labor market outcomes that are constant over time – the quality of his education, and the constant component of his latent underlying abilities and appetite for hard work, for example. Our interest is in the sign and size of the coefficient β. If the presence of a pensioner relaxes a financial constraint, allowing a young adult to migrate for work, for example, then we would expect a positive and significant effect of pensioners on labor migration.

A convenient way to estimate equation (1) with fixed effects is to take first-differences between HSE rounds. We can then write the estimating equation as:

$$(3) \qquad y_{iht} - y_{ih,t-1} = \beta(P_{ht} - P_{h,t-1}) + \gamma(X_{iht} - X_{ih,t-1}) + (u_{iht} - u_{ih,t-1}).$$

Here, we examine changes in employment, and changes in labor migrant status, on changes in the presence of a pensioner and changes in control variables X. We include controls for the period of time between each individual's last HSE data collection and the current collection date, changes in the number of resident members in the individual's household(s), and changes in the individual's age, and that age squared.

We anticipate that pension gain and pension loss may have asymmetric effects on employment and migration – particularly for individuals observed as labor migrants in the previous period. For this reason we will estimate a generalized version of equation (3):

$$(4) \quad y_{iht} - y_{ih,t-1} = \beta_G \, 1[P_{ht} - P_{h,t-1} = 1] + \beta_L \, 1[P_{ht} - P_{h,t-1} = -1] + \gamma(X_{iht} - X_{ih,t-1}) + (u_{iht} - u_{ih,t-1}),$$

where β_G is the coefficient on an indicator for pension gain between HSE rounds, β_L is the coefficient on an indicator for pension loss between the rounds.

As in Ardington et al. 2009, we find no significant effect of pension gain or loss on employment. The coefficients (β_G, β_L) in employment equations are small and statistically insignificant, and we do not report them in tables here. Although insignificant, the coefficient on pension gain is positive, and provides no evidence to support claims that the arrival of an old-age pension provides disincentives for prime-aged adults to work.

The fact that pension receipt can influence where that employment takes place can be seen in Table 3, which presents estimates on indicators for pension gain β_G and pension loss β_L from equation (4) for the migration outcomes of men ages 18-35. Among men who were migrants in the previous HSE, pension gain has no significant effect on the probability of maintaining migrant status. This result is consistent with these men having been able to clear any financial constraints they might have faced without the aid of a pension in the household. For them, no further loosening of such constraints is necessary to maintain migrant status. For these men, loss of a pension leads them to be 11 percentage points less likely to maintain their migrant status than other young men who were observed as migrants in the last round.

There are two ways in which someone can lose his status as a labor migrant. He could either continue to reside outside of the DSA and stop working, or he could return to the DSA. Column 2 presents evidence that it is the latter that happens most often. On average, having lost pension status, migrant workers are 9 percentage points more likely to be observed residing in the DSA than are others who were labor migrants in the previous period.

Among young men who were potential labor migrants in the previous round (results presented in column 3), the arrival of a pension leads to a 2 percentage point increase in the probability of being observed as a labor migrant in the current wave. As can be seen in column 4, this change comes from the migration of young men who had been resident in the DSA in the previous HSE round (rather than

from young men who had previously been away looking for work). Pension loss reduces the odds of migrating for work among potential migrants, relative to the odds of other young men who were non-migrants in the previous round.

Table 4 breaks the impact of pension gain and loss more finely among young men, allowing the impact to vary between those aged 18 to 24, 25 to 30, and 31 to 35. For young adults in each of these age categories who were labor migrants in the previous round, we find no association between pension gain and the probability that they will maintain their labor migrant status relative to other labor migrants. However, upon pension loss, the youngest of the labor migrants (18 to 24) are the most likely to return to the DSA and lose their labor migrant status: the loss of a pension is associated with a 16 percentage point reduction in the probability of maintaining labor migrant status, and a 12 percentage point increase in the probability that they are resident in the DSA in the current HSE round. Those who are 25 to 30 are 12 percentage points less likely than other labor migrants to maintain their status upon the loss of a pensioner. These young adults are 10 percentage points more likely to be resident in the DSA in the current round than are others who were labor migrants in the previous HSE. Among labor migrants aged 31 to 35, the risk of losing labor migrant status with pension loss stands at 6 percent. Older migrants may have had more time to find their feet financially, and to be self-sustaining as migrants.

Among young men who were potential labor migrants in the previous wave, we find a non-linear effect of pension gain on the probability of being reported as a labor migrant in the current wave. The youngest group, aged 18 to 24, are 1.8 percent more likely to be labor migrants than are other potential migrants who did not change household pension status. However, it is young men in the next age group, aged 25 to 30, who experience the largest increase in the probability of migrating for work, relative to their peers. On average, they are 5 percentage points more likely to be observed as a labor

migrant following the arrival of a pension than are other potential migrants. In the next section, we will return to the fact that the youngest of these adults are eligible to continue their educations, and we will find evidence that the pension's arrival facilitates tertiary studies.

The impact of pension gain and loss on migration decisions may depend on how well an individual is positioned to take advantage of the opportunity to migrate upon the arrival of a pension, or to maintain migrant status when his household in the DSA loses the pension. Starting with the latter, results presented in the first column of Table 5 suggest that, for current migrants, the risk of losing labor migrant status after pension loss is muted for better educated migrants. Relative to a migrant who has not finished high school (matric), those who have face a 10 percentage point lower risk of leaving labor migrant status following pension loss. Migrants who have finished high school are eligible for better jobs – jobs that are more likely to be self-sustaining.

For potential labor migrants, pension gain appears not to improve the odds that a young man will migrate to find work—unless he has a high school degree. Those who have successfully completed 12 years of schooling are 8 percentage points more likely to be a labor migrant when observed in the HSE round after pension gain. Ardington et al. 2009 showed that prime-aged adults are more likely to migrate for work following pension gain if the newly minted pensioner was one of their parents. We test whether this holds for young men, in the last column of Table 5. We find that the interaction term between pension gain and an indicator that the pensioner is a parent is positive, and appears to give the young adult a 2 percentage point advantage in the probability of migrating to find work. Taken by themselves, neither the pension gain indicator, nor that interacted with an indicator for pensioner-parent is statistically significant. However, these are jointly significant (F-test=4.23, p-value=0.0145). This is consistent with a model in which pensioners are more willing to stake their children to find better jobs outside of the DSA.

IV. Education and pension gain

Young adults – specifically, those under age 25 – also appear to benefit from pension gain through the effect that pension arrival has on educational opportunities. While secondary education is generally of low cost, tertiary education is often out of reach, a result of high tuition fees and costs associated with post-secondary education.

In addition to being able to clear some financial barriers upon pension receipt, allowing labor migration, young men also appear to benefit from the ability to pursue further education. We examine this in Table 6, which presents, for men aged 18 to 24, change in tertiary school enrolment given pension gain. We find that, on average, young men are 1.5 percentage points more likely to enroll in tertiary education after pension gain than are other young men and, among those who are eligible to advance to tertiary education (those with a high school degree) the increase in the probability of enrolment upon pension gain is 4.4 percentage points higher (bottom panel, Table 6). Taking enrolment and employment together, pension gain is associated with a 3 percentage point gain in not falling into the "not studying, not employed" category for men aged 18 to 24 – and a 6 percentage point gain among those young men who have completed 12 years of schooling.

V. Conclusions

Our research on young men in rural KwaZulu-Natal suggests that a relaxation of financial constraints – here, the arrival in the household of an old age pension – can aid young men in their search for jobs outside of the DSA. However, that benefit appears to help primarily those who have (at a minimum) a high school degree. From a policy perspective, it appears that giving young men living in rural areas the

financial resources necessary to search for jobs elsewhere will be more successful, the greater the educational attainment of these men.

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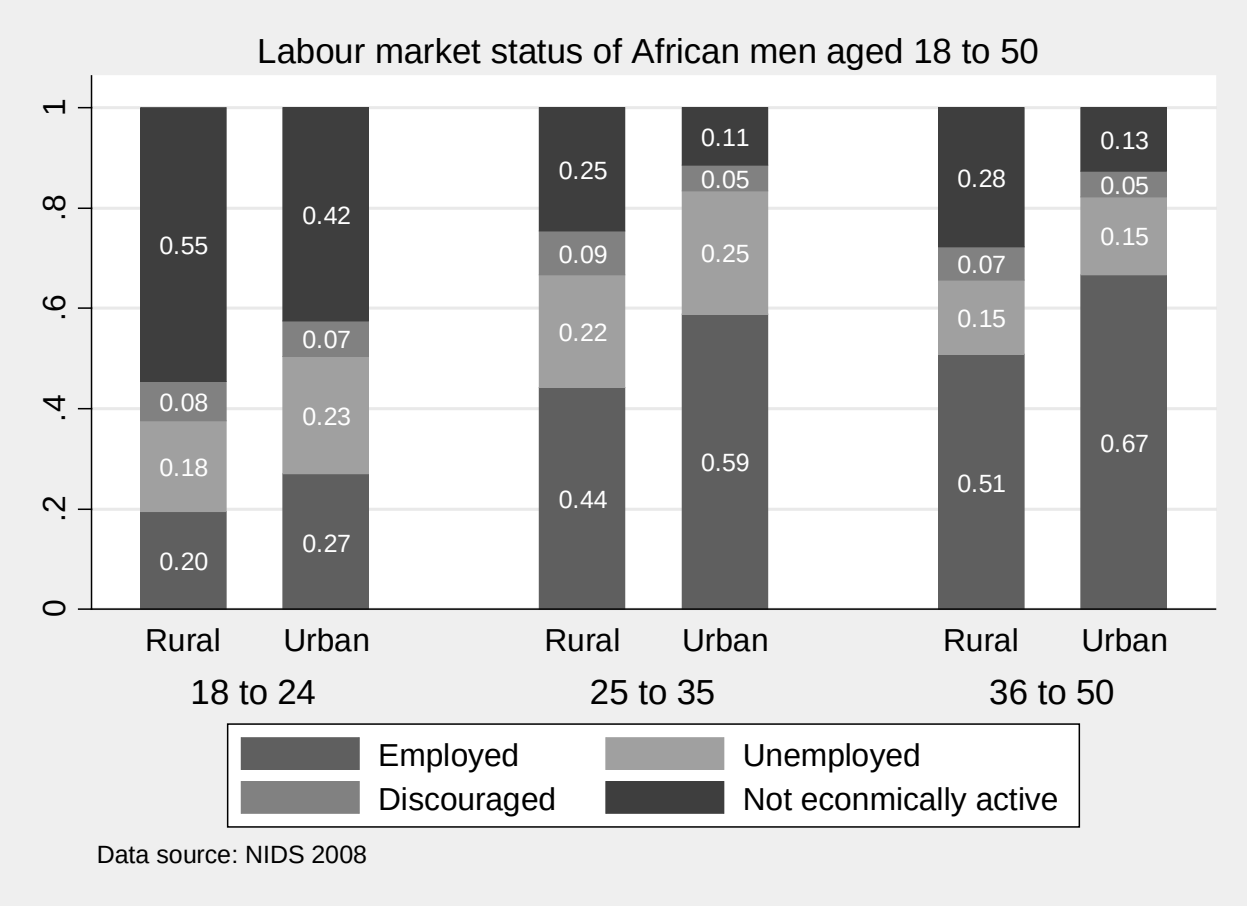
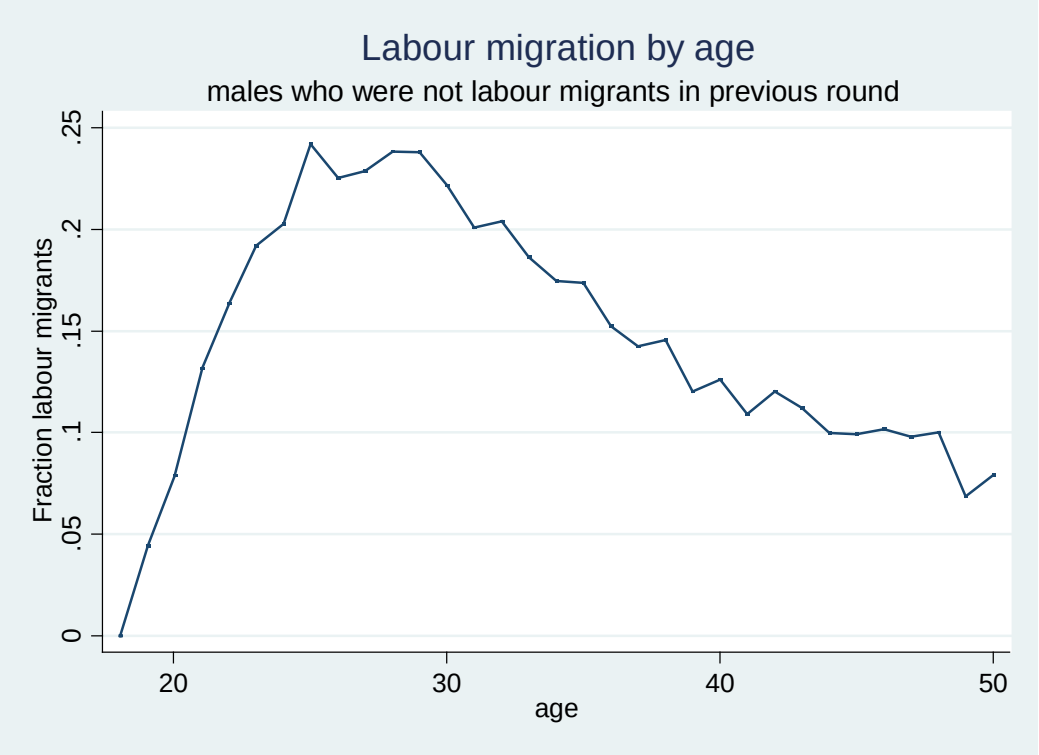

Labour market status of African men aged 18 to 50
0
.2
.4
.6
.8
1
0.55
0.08
0.18
0.20
0.42
0.07
0.23
0.27
0.25
0.09
0.22
0.44
0.11
0.05
0.25
0.59
0.28
0.07
0.15
0.51
0.13
0.05
0.15
0.67
Rural
Urban
Rural
Urban
Rural
Urban
18 to 24
25 to 35
36 to 50
Employed
Unemployed
Discouraged
Not econmically active
Data source: NIDS 2008

Figure 1


Labour migration by age
males who were not labour migrants in previous round
Fraction labour migrants
0
.05
.1
.15
.2
.25
20
30
40
50
age

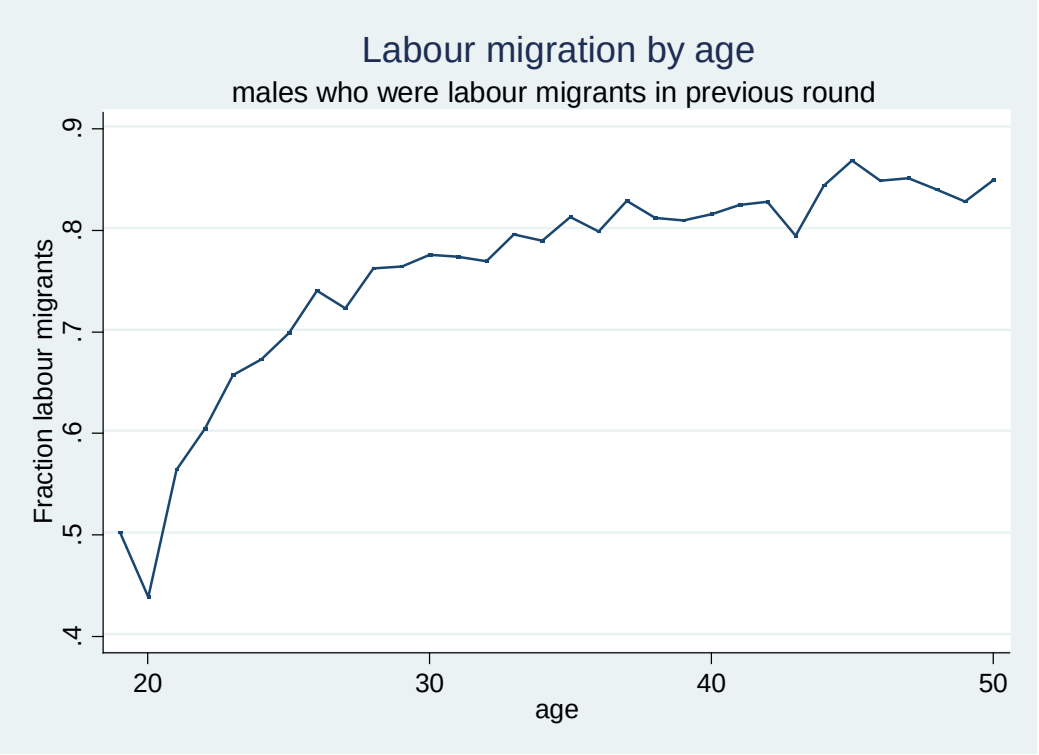

Labour migration by age
males who were labour migrants in previous round
Fraction labour migrants
.4
.5
.6
.7
.8
.9
20
30
40
50
age

Figure 2

Table1. Characteristics of males aged 18 to 50 – HSE 8 (2011)

	Aged 18-24	Aged 25-35	Aged 36-50
Employed	0.247	0.635	0.693
Enrolled in secondary education	0.306	0.017	0.015
Enrolled in tertiary education	0.086	0.030	0.021
Neither studying nor employed	0.387	0.332	0.282
Resident	0.600	0.448	0.547
Working migrant	0.152	0.414	0.383
Years of education	10.303	10.362	8.523
Completed high school (matric)	0.395	0.507	0.345
Pension household	0.391	0.418	0.423
Total observations	5,170	5,843	3,527

Table 2. Changes between consecutive HSE rounds for HSE 1 to HSE 8 for males aged 18-35

Household gained pension between rounds	0.046
Household lost pension between rounds	0.032
Unique individuals	19257
Average observations (changes) per individual	3.31
Total observations (changes)	63751

Table 3. The effect of change in pension status by labor migrant status in the last period for men ages 18 to 35

	Change in labor migrant status for those who were labor migrants in the previous round	Change in residency status for those who were labor migrants in the previous round	Change in labor migrant status for those who were not labor migrants in the previous round	Change in labor migrant status for those who were resident in the previous round
Household gained pension between rounds	0.010	-0.007	0.024***	0.022***
	(0.015)	(0.011)	(0.009)	(0.008)
Household lost pension between rounds	-0.106***	0.087***	-0.019*	-0.025**
	(0.022)	(0.016)	(0.011)	(0.011)
Observations	17,361	17,585	46,390	33,279

Notes: Data are drawn from all males aged 18 to 35 observed in at least two consecutive HSE rounds between HSE1 (2001) and HSE8 (2011). “Household gained pension status” is equal to 1 if any household in the DSA that claims this individual as a member gained a resident pension-aged person between HSE rounds, and zero otherwise.

Table 4. The effect of change in pension status by finer age group and labor migrant status as of the last HSE round for men aged 18 to 35

	Change in labor migrant status for those who were labor migrants in the previous round	Change in residency status for those who were labor migrants in the previous round	Change in labor migrant status for those who were not labor migrants in the previous round	Change in labor migrant status for those who were resident in the previous round
Household gained pension between rounds x aged 18-24	-0.005 (0.032)	0.028 (0.024)	0.018* (0.011)	0.027** (0.011)
Household gained pension between rounds x aged 25-30	0.014 (0.022)	-0.013 (0.015)	0.051*** (0.017)	0.026 (0.016)
Household gained pension between rounds x aged 31-35	0.017 (0.027)	-0.034** (0.016)	-0.015 (0.028)	-0.022 (0.023)
Household lost pension between rounds x aged 18-25	-0.159*** (0.052)	0.115*** (0.040)	-0.019 (0.013)	-0.014 (0.014)
Household lost pension between rounds x aged 26-30	-0.115*** (0.033)	0.100*** (0.024)	0.023 (0.021)	-0.024 (0.020)
Household lost pension between rounds x aged 31-35	-0.060* (0.032)	0.051** (0.022)	-0.096*** (0.025)	-0.059** (0.024)
Observations	17,361	17,585	46,390	33,279

Table 5. Migrant characteristics and changes in migrant status – males aged 18 to 35

	Change in labor migrant status for those who were labor migrants in the previous round		Change in labor migrant status for those who were not labor migrants in the previous round		
	All	Matric only	All	Matric only	All
Pension gain	0.004	-0.010	-0.008	0.029*	0.012
	(0.016)	(0.021)	(0.011)	(0.015)	(0.014)
Pension loss	-0.168***	-0.103***	-0.016	-0.026	-0.019*
	(0.032)	(0.031)	(0.011)	(0.020)	(0.011)
Pension loss x matric	0.103**				
	(0.044)				
Pension gain x matric			0.079***		
			(0.018)		
Pension gain x pension is parent					0.018
					(0.017)
Observations	15,962	8,338	43,496	17,246	46,390

Table 6. The effect of change in pension status on tertiary enrollment for men aged 18 to 25 years old

	Men aged 18 to 25	
	Change in tertiary enrollment	Change in tertiary enrollment or employment
Household gained pension between rounds	0.015*	0.027*
	(0.008)	(0.016)
Household lost pension between rounds	-0.012	-0.002
	(0.008)	(0.019)
Observations	30,901	29,402
	Men aged 18 to 25 with at least Grade 12	
Household gained pension between rounds	0.044**	0.058**
	(0.019)	(0.028)
Household lost pension between rounds	0.003	0.031
	(0.021)	(0.034)
Observations	12,447	12,050