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**Migration and Unemployment in South Africa:
When Motivation Surpasses the Theory**

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by

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Abstract

This paper looks at the connection between internal migration and unemployment in South Africa. We examine whether rural-urban migrants are more likely to be unemployed, in informal sector employment or underemployed than non-migrants. We build on standard economic theory to predict that rates of unemployment and of participation in the informal sector ought to be much higher for migrants than for non-migrants. The empirical evidence we present, based on the 1993 and 1994 October Household Surveys, provides only some support for this theory. Results suggest that compared to job seeking non-migrants, recent migrants do well at finding formal employment, and are much less likely to be unemployed.

Keywords:

Africa, South Africa, Unemployment, Informal Sector, Rural-Urban Migration, Labour Turnover

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Abstract

This paper looks at the connection between internal migration and unemployment in South Africa. We examine whether rural-urban migrants are more likely to be unemployed, in informal sector employment or underemployed than non-migrants. We build on standard economic theory to predict that rates of unemployment and of participation in the informal sector ought to be much higher for migrants than for non-migrants. The empirical evidence we present, based on the 1993 and 1994 October Household Surveys, provides only some support for this theory. Results suggest that compared to job seeking non-migrants, recent migrants do well at finding formal employment, and are much less likely to be unemployed.

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1. Introduction

Urbanisation has long been believed to go hand in hand with industrialisation and development. Theories of Lewis (1954) and Ranis and Fei (1961) envisage development as the transfer of labour from the informal subsistence sector to the more productive industrial sector. Indeed, population growth in urban areas has soared over the last few decades. For instance, the United Nations documents that 40% of the total least developed country population lived in urban areas in 2000, compared to 26.1% in 1975. More specifically, 34% of the 2000 Sub-Saharan African population was urban – a jump of more than 62% over the 15 years. According to the model of Harris and Todaro (Todaro, 1969, 1970, 1976 and 1986, and Harris and Todaro, 1970), this rapid movement to urban areas reflects the desire of rural inhabitants to improve their economic situation: migration results when the individual's expected urban wage exceeds that for the rural sector.

While migration is a normal element of population growth in most societies, the scale of movement in developing countries is such that the urban population swell may have undesirable consequences for overall poverty and development. The migration literature has come to regard rural-urban migration as “the major contributing factor to the ubiquitous phenomenon of urban surplus labour and as a force which continues to exacerbate already serious urban unemployment problems” (Todaro, 1976, p. 2). Despite the positive economic and social externalities of large cities, a highly concentrated population brings social costs such as congestion, pollution and crime. The increased demand for housing and overloading of urban facilities sees the poor reside in slums, often lacking access to clean water and sewerage systems. Resultant high unemployment necessitates that migrants create their own employment through informal labour-intensive services and production. In the absence of unemployment benefits, this informal sector provides the much needed income for those unable to find work in the formal sector, and provides many of the necessary inputs into formal sector production. Despite this, governments have expressed distaste at the informal sector in its capacity to avoid taxation, provide inadequate worker protection and lack permanent and sufficient income for its constituents.

Of particular interest is whether newly arrived urban-bound migrants do indeed improve their lot. On arrival, often with an absence of social connections, the migrant may be unsuccessful in finding formal employment and hence enter the informal sector or become unemployed. Further still, the migrant may be unable to find a

sufficient amount of full-time work in either the formal or informal sector and hence be underemployed.

This paper looks specifically at the migration cum unemployment situation in South Africa, and whether rural-urban migrants are more likely to be unemployed, in informal sector employment or underemployed than non-migrants with otherwise identical social and demographic characteristics. While, in comparison to the majority of developing countries, the size of the urban South African informal sector is not large (Kingdon and Knight, 2004), the urban unemployment rate has reached crisis point (NALEDI, 2000) and urban population growth is among the largest in the world (Knight, 1982). It is therefore important to identify how new urban dwellers fare in pursuing their goal of improved economic wellbeing.

The research question will be addressed by empirical analysis of South Africa's October Household Survey data for 1993 and 1994. Econometric analysis will be used to establish possible connections between a person's employment status and whether they are a recent internal migrant.

We begin this paper with a discussion of the theoretical underpinnings of the well-renowned Harris-Todaro model (Harris and Todaro, 1970), and extend their analysis to concentrate on what the model predicts for the recent migrant. Section 3 introduces the data, while section 4 presents the results. The final section offers some discussion and concludes.

2. Background and Theory

Much of the contemporary literature on economic motivations for rural-urban migration builds on the seminal work of Todaro (1969) and Harris and Todaro (1970). We begin with a simplified presentation of their model. The starting point of their model is the internal division of the country into two-sectors: the rural and the urban. In the same vein as Lewis (1954), Harris and Todaro (1970) distinguish sectors according to production specialisation: the rural in agriculture and the urban in manufacturing. The rural sector then reciprocates agricultural product for the manufactured item of the urban sector.

Wages in the rural sector are assumed flexible but employment guaranteed. The urban sector, however, characterises a union or legislated minimum fixed wage, and this wage (W_U) is fixed above the rural (W_R) and flexible equilibrium wage (W^*).

At this fixed wage there are also a fixed number of urban jobs, N_U . The remainder of the labour force finds themselves as urban unemployed or working in the rural sector at the applicable wage rate W_R .

The typical rural worker is a utility-maximising individual who has a choice to produce the agricultural good or migrate to the urban sector in search of waged employment. The rural worker is enticed to migrate to the urban area in search of work if their expected urban income exceeds their guaranteed rural wage. That is, the choice to migrate depends on a comparison of the expected income from remaining in the rural sector with the expected urban wage.

Rural expected income is given by

$$E(W_R) = W_R, \quad (1)$$

since income is guaranteed in the rural sector. The expected urban wage, however, must be corrected for the probability of employment, which is taken to be the ratio of number of urban jobs N_U to the total urban labour force L_U . This gives

$$E(W_U) = W_U \left(\frac{N_U}{L_U} \right). \quad (2)$$

Migration occurs, therefore, when

$$W_U \left(\frac{N_U}{L_U} \right) > W_R. \quad (3)$$

(Adapted from Bardhan and Udry, 1999)

Harris and Todaro's (1970) analysis provides a natural explanation for what is often observed: despite high levels of unemployment in urban areas, large volumes of migration to urban areas prevail. Their model also predicts that efforts to alleviate unemployment in urban areas involving urban job creation may actually induce migration, since this will increase the probability of employment and thus widen the expected rural-urban wage differential.

Since the seminal papers of Todaro (1969) and Harris and Todaro (1970), many authors have criticised, extended and empirically tested aspects of the migration model. Two directions of further work are relevant to this paper. First, authors such as Hart (1973) and Fields (1975) incorporate the urban informal sector into their models. Fields describes the “murky” urban traditional sector, within which ease of entry and underemployment thrive. It is recognised that recent migrants might well find themselves at first in the informal sector, due to the relative ease of entry. Some argue that this is a transitional phase, providing an alternative to unemployment while waiting for a formal sector job. Others, including Steel and Takagi (1983) and Cole and Sanders (1985), suggest that there are reasons for migrants to relocate with the intention of finding work in the urban informal sector. In the empirical work to follow, we will model explicitly the likelihood of migrants finding themselves in the informal sector, and / or in the pool of urban unemployed.

A second significant development has been to incorporate labour turnover into the analysis. Mazumdar (1976) develops a model which can explain variations in the volume of migration, while Stiglitz (1974) seeks to find an endogenous explanation for the rural-urban wage gap by building in the cost of labour turnover. A by-product of these and related papers is the recognition that since not all jobs in the urban sector turn over every year, $\frac{N_U}{L_U}$ provides an overestimate of the probability of finding a job in the urban sector. This is an important observation in empirical testing of the standard Harris-Todaro theory. When labour turnover rates of less than 100% are incorporated into the model, the theory predicts that the unemployment rate among recent migrants ought to be significantly higher than the overall unemployment rate.

In the remainder of this section we will outline a simple framework which incorporates the urban informal sector and which demonstrates the connection between labour turnover and the probability of the migrant gaining employment. This framework will guide the interpretation of the empirical results presented in section 4.

Let L_{t-1} represent the total urban labour force at the start of year t . The number employed in the formal sector is denoted F_{t-1} , with N_{t-1} employed in the informal sector, and U_{t-1} unemployed. We assume

$$L_t = F_t + N_t + U_t \quad \forall t.$$

Begin with some assumptions about what changes take place through the course of the year. First assume that the proportion of the labour force in formal and informal employment remain constant across time. That is, $f = F_t/L_t$ and $n = N_t/L_t \quad \forall t$. Of course, this implies that the overall unemployment rate will also be constant across time. Next, let λ be the rate of rural-urban migration per year as a proportion of the size of the labour force at the start of that year. That is, in year one the number of rural-urban migrants arriving is λL_0 , and this represents the growth in the urban labour force. We will also assume that the formal labour turnover rate each year is given by γ : that is, γF_0 formal jobs are turned over during year one.

Interest is in the probability of the recent migrant obtaining a formal job, and the probability that they will work in the informal sector. First consider formal sector jobs. The pool of people seeking formal sector jobs will include those whose jobs turn over (γF_0), those who are currently in informal sector jobs (N_0), the unemployed (U_0) and the recent migrants (λL_0). The supply of formal sector jobs will comprise the turned over jobs (γF_0) plus the growth in formal sector jobs, which is given by λF_0 (growth in the labour force is λL_0 , and since F_t/L_t is assumed constant across time, growth in formal sector jobs will be λF_0). Assume that all competitors for formal sector jobs are equally likely to get a job; this implies that the probability of a migrant getting a formal sector job is given by

$$p_f = (\gamma + \lambda)F_0 / (U_0 + N_0 + \lambda L_0 + \gamma F_0).$$

Some simple rearrangement of this equation will be helpful. First, replace $U_0 + N_0$ with $L_0 - F_0$ in the denominator, then divide both numerator and denominator by L_0 .

This gives

$$p_f = (\gamma + \lambda)f / ((1 + \lambda - f(1 - \gamma))). \quad (4)$$

A similar analysis can be used to derive the probability of the migrant finding themselves in informal employment. Since $1 - p_f$ is the probability of the migrant being either in the informal sector or unemployed, we can see that the probability of informal employment is

$$p_n = (1 - p_f)N_1 / (N_1 + U_1).$$

Replacing $N_1 + U_1$ with $L_1 - F_1$, and then dividing through by L_1 , it is easy to see that this simplifies to

$$p_n = n(1 - p_f) / (1 - f). \quad (5)$$

Equations (4) and (5) can be combined to derive the probability that the migrant will be unemployed:

$$\begin{aligned} p_u &= 1 - p_f - p_n \\ &= 1 - p_f - (1 - p_f)n / (1 - f) \\ &= (1 - f - n)(1 - p_f) / (1 - f). \end{aligned}$$

If we define $u = U_t / L_t$ as the time invariant unemployment rate, we thus have

$$p_u = u(1 - p_f) / (1 - f). \quad (6)$$

Equation (4) reveals how the probability of the migrant attaining a formal job varies with the various market parameters. First, suppose $\lambda = 1$, which implies 100% turnover of formal sector jobs each year. In this case, $p_f = f$. In other words, the migrant's probability of employment equals the formal employment rate. This is the result implicit in the initial Harris-Todaro formulation, as shown in equation (2) above. However, for the more realistic case where $\lambda < 1$, it is easy to demonstrate that $p_f < f$. This implies that rates of formal employment among recent migrants ought to be lower than the overall rate of formal employment in the economy.

Furthermore, utilising the result that $p_f < f$, it is easy to see from equation (5) that $p_n > n$; that is, the migrant has a higher probability of being in the informal sector than the proportion of the total work force in that sector. Likewise, it is clear that p_u will exceed the economy-wide unemployment rate. Not only does the migrant have a higher probability of being in the informal sector, they also have a higher probability of being unemployed.

<TABLE 1 ABOUT HERE>

Table 1 illustrates the implied values of these various proportions / probabilities, for a range of values of γ and λ . The key message from Table 1 is that the outcome for the migrant is likely to be much worse than for the overall market. Take row 1 of the table as an example: with a formal sector labour turnover rate of 20%, if the market unemployment rate is 20%, we expect 35% unemployment among migrants, assuming migrants are equally likely as others who are looking for work to find employment. Given standard labour turnover rates of somewhere between 10% and 30% per annum, the unemployment rate among recent migrants ought to be much higher than the market unemployment rate. Contrary to this prediction, we find in section 4 that migrants are generally achieving significantly lower unemployment rates than what is predicted here, suggesting that they are doing much better than the average job seeker in finding employment.

3. Data

We now shift focus to empirics with South Africa in mind. The essence of our work is to identify whether the newly arrived rural-urban migrant is left out in the cold in terms of employment opportunities, as our simple theoretical model predicts. Analysis involves estimation of a probit model to examine whether the rural-urban migrant is more likely to have adverse employment prospects – unemployment, entry into the informal sector or underemployment – compared to her non-migrant cousin.

Data for this study has been taken from the 1993 and 1994 Statistics South Africa October Household Survey. The 1993 survey comprises of a stratified multi-stage

cluster sample of some 136,468 persons, while its 1994 counterpart has a sample size of 132,469. A number of alterations to questions and coverage were implemented in the latter version; the 1994 survey extends coverage to include former TBVC states Transkei, Bophuthatswana, Venda and Ciskeier alongside the nine South African provinces¹.

In our analysis we utilise a number of variables relating to socio-economic and demographic characteristics of respondents. The connection between variables and survey questions is given in Table 2².

<TABLE 2 ABOUT HERE>

We will consider four different dependent variables of interest. Each represents the propensity of the individual to enter the particular state of employment: unemployment defined narrowly (official unemployment), unemployment defined broadly, employment in the informal sector, and underemployment. These dependent variables are constructed as follows.

Unemployed: There has been much debate over the correct definition of unemployment, particularly when it comes to South Africa (see, for example, Gerson, 1981, Knight, 1982, Kingdon and Knight, 2004, and Proudly South African, 2003). The narrow definition of unemployment is that used in the official unemployment statistics. Under this definition, a person is unemployed if they did not work in the last 7 days, were actively seeking work, would be prepared to work if offered and could begin work within 1 week. The broad definition of unemployment is often regarded as a better guide to the extent of the unemployment problem in the economy. It only requires that a person be not working, and willing to work if offered. A person who is unemployed under this definition need not be actively seeking work. For each definition, the dependent variable takes a value of 1 if the individual is unemployed but seeking work and 0 if they are working or have some attachment to a job or enterprise.

Informal Sector: We use the survey variables OCCUPAT and OCC_EMP to define the informal sector according to the type of occupation of the individual. Occupation codes are listed in the 1994 survey, but not correctly coded in 1993, hence for this particular model we restrict our analysis to 1994 data alone. We define informal sector membership as those whose occupations are flagged by the survey as “informal sector” or are defined as elementary occupations as listed under category 9³. For

those who classify as self employed – both solely and in addition to a main employed position – a further indicator of informal sector membership is used: self-employed workers are classified as part of the informal sector if their business does not have a VAT number or is not registered with the register of companies, the Commissioner of unemployment insurance or the Commissioner of workmen’s compensation. This absence of registration is a commonly recognised means of identifying informal sector self-employment.

The binary indicator variable is constructed by first selecting all those respondents who were working most in the last seven days (ACTIV1) or with some attachment to a job or enterprise (JOB_ATT). Restricting our sample to these workers, we use the above means to identify those in the informal sector, providing a dependent variable which takes a value of 1 if the individual is employed in the informal sector and 0 otherwise.

Underemployed: We consider only those individuals who were working most in the last 7 days (ACTIVITY and ACTIV1) or with some attachment to a job or enterprise (JOB_ATT). From these workers, we consider an individual to be underemployed if they responded “yes” to the question “would you have liked to work more hours?” (WK_MORE). The dependent variable takes a value of 1 if the individual is underemployed and 0 otherwise.

We now turn to the independent variables used in the analysis. In order to compare a migrant with a non-migrant, we condition on socio-economic and demographic variables. The conditioning variables are mostly dummy variables constructed as follows.

ASIAN, COLOUR, WHITE: From the variable POP_GRP, we distinguish the 4 named population groups by creating 3 dummy variables, with Black as the base.

HEAD: We use RELATION to create a dummy indicating whether the individual is the head of the household.

ED1, ED2, ED7, ED9, EDTERTIARY, EDOTHER: On examination of LEVEL_ED, there appeared to be large build-ups of educational attainment at standard 1, 2, 7 and 9, thus we distinguish these years of educational attainment as well as tertiary and other levels of education.

RURAL: We allow for differing unemployment / informal sector participation / underemployment rates in rural and urban sectors by including a dummy variable which takes a value of 1 where the individual resides in a rural area, determined by the survey variable URBAN.

UU, RR, RU, UR: We separate each combination of internal migration origin and destination based on variables MOVE_ARE, PREV_ARE and URBAN. This leaves a non-migrant as the reference person.

INTERNL: We distinguish international migrants with this dummy constructed from the variable MIG_COUN.

MARRIED: Using MARITAL, we define a dummy variable which takes a value of 1 if the individual is married.

AGE, AGE2: We allow for a diminishing effect on the probability of unemployment by including age and age². For convergence it was necessary to scale these variables by 0.1.

1994: In models where we combine data from the 1993 and 1994 surveys, we include a time dummy for 1994 to allow for differing intercepts.

The reference person thus has the following characteristics: Black, Female, Other than household head, Attained no schooling, Urban, Unmarried, Non-migrant, Surveyed in 1993.

Table 3 presents descriptive statistics for several key variables of interest. As with studies on migration in Africa by Smith (1994) and Kingdon and Knight (2004), we find the majority of South African migrants in 1993 and 1994 were urban-urban migrants. Rural-urban migrants constitute a much smaller share.

<TABLE 3 ABOUT HERE>

For migrants in 1993, rural-urban migrants recorded by far the highest rate of unemployment, followed by urban to rural, with urban-urban unemployment the lowest. This ordering is as expected, considering that urban-urban migrants would hold the advantage of established social networks, which might not be paralleled by migrants crossing from one sector to the other. Rural-urban migrants appear to be the only migrants more worse off than non-migrants on the unemployment front. For

1994, the largest unemployment rate differs with narrow and broad definitions of unemployment.

A higher proportion of rural-rural migrants appear to be in the informal sector than non-migrants, followed by urban-rural – most likely reflecting the type of jobs available in the rural compared to the urban sectors. Rates of underemployment in 1993 appear to be highest amongst rural-urban migrants.

This preliminary analysis provides mixed evidence about whether rural-urban migrants fare worse than their non-migrant counterparts. In the next section we will investigate this question by estimating models for unemployment, entry in the informal sector and underemployment.

4. Results

Our analysis considers four different dependent variables of interest. Each represents the propensity of the individual to enter the particular state of employment: unemployment (narrow and broad), employment in the informal sector or underemployment. This unobserved propensity, y_i^* , can be described by two realised states of employment using an indicator variable, y_i . For example, y_i takes a value of one where the individual is unemployed, and zero otherwise. We then have the realised state

$$y_i = \begin{cases} 1 & \text{if } y_i^* \geq \text{threshold} \\ 0 & \text{if } y_i^* < \text{threshold} \end{cases}$$

where the threshold refers to the threshold propensity to be in the given employment state. Interest lies in the factors which influence the probability of observing the binary outcome of entry into the particular employment state.

A linear functional form for the latent variable is given by

$$y_i^* = x_i' \beta + v_i \quad i = 1, \dots, N \quad (7)$$

where x_i is the vector of explanatory variables, β the vector of unknown coefficients and v_i is the unknown $N(0,1)$ error term. This is the specification for a probit model, and the model parameters can be estimated using maximum likelihood.

4.1 Models for Unemployment

We first model the propensity of an individual to be unemployed. This translates to modelling the probability that an individual will be unemployed.

<TABLE 4 ABOUT HERE>

In the first set of results we consider the narrow definition of unemployment. Results are presented in Table 4. All variables are found to be significant in explaining likelihood of unemployment except standard 1 education, rural-urban, urban-rural and international migrant dummies. This suggests that, once the listed social and demographic characteristics are taken into account, the likelihood of a rural-urban and urban-rural migrant being unemployed is no greater nor less than the overall market unemployment rate. Furthermore, urban-urban and rural-rural migrants are actually less likely to be unemployed than a non-migrant with the same social and demographic characteristics.

The estimated marginal effects suggest that Asians, Coloureds and Whites are substantially less likely to be unemployed than Blacks – the marginal effects are extremely large. Similarly, household heads, males, rural dwellers and married persons are less likely to be unemployed than their base counterparts.

Estimated marginal effects of the education dummies have interesting signs. They suggest that an individual with one of standard 2 through to standard 7 education is more likely to be unemployed than an individual who had received no schooling. This suggests that the intrinsic value of education is not realised until at least standard 9 education is achieved. In fact, Barnum and Sabot (1982) label one as “educated” only with 8 or more years of schooling. Perhaps it is only then that an individual can have the edge over another who has built up vocational experience rather than basic education. Moreover, it could be the case that standard 9 attainment allows the individual to enter a vocation that is not available to one who does not have such a level of education.

As already noted, the only significant migration dummies are those in urban-urban and rural-rural migrant category, and the evidence is strong here that these migrants are less likely to be unemployed than other urban and rural residents respectively. This result is not surprising, on reflection. Many rural-rural migrants are those who

have migrated to another area specifically because of the availability of seasonal work, which relies to a large extent on mobile labour.

Finally, age has a positive quadratic effect on the probability of unemployment, while the unemployment rate has risen in general between 1993 and 1994.

The same set of regressors were used to estimate the model using the broad definition of unemployment, which includes as unemployed those who would accept a job if offered, even if they were not actively seeking work in the last 7 days. Aside from the urban-urban dummy, the results given in Table 5 show very little difference: similar signs and magnitudes to the first recoding were found.

<TABLE 5 ABOUT HERE >

In summary, it seems that rural-urban migrants have no greater probability of being unemployed than the overall unemployment rate. This clearly contradicts the theory presented in section 2, especially equation (6), which predicts that the probability of unemployment for migrants ought to be much higher than the overall unemployment rate. Of course, one simple explanation could be that these migrants are entering the informal sector rather than joining the ranks of the unemployed. The next set of results explores this possibility.

4.2 Models for Informal Sector Employment

We next model the propensity of an individual to be employed in the informal sector. To facilitate this we model the probability that an individual is employed in the informal sector, given that they are employed. In other words, a dependent variable taking the value 1 indicates the person is employed in the informal sector, and a zero indicates employment in the formal sector. Since occupation codes were unavailable for the 1993 survey, this model is estimated based on the 1994 data alone. Hence, the conditioning variables are those outlined in section 3, omitting the time dummy.

<TABLE 6 ABOUT HERE >

The results in Table 6 show that most variables are highly significant in explaining likelihood of informal sector employment, with the exception of household head, standard 1 education and four of the five migrant dummies. This provides strong

evidence that, once the listed social and demographic characteristics are taken into account, urban-urban, rural-rural, urban-rural migrants are no more or less likely to be employed in the informal sector than a non-migrant. We do find, however, that rural-urban migrants are significantly more likely to be in the informal sector. This result is consistent with the theory presented in section 2: equation (5) suggests that the migrant has a higher than average probability of ending up in the informal sector.

The estimated marginal effect on the rural-urban migration dummy suggests that a migrant has a probability of employment in the informal sector (given they are not unemployed) that is around 9% higher than the overall average. Recall that in the results presented in Table 4, the migrant has no greater chance of being unemployed than the overall average; that is, the model predicts that $p_u = u$. Contrast these findings with the predictions of the theory in section 2. Realistic values of the parameters of the model can be found in the first row of Table 1. In this case, we have assumed a labour turnover rate of 20%, as well as an unemployment rate of 20%, with 25% of employed persons being in the informal sector. The theoretical model predicts that the migrant has a 35% chance of being unemployed, and that 54% of the employed are in the informal sector (0.35/0.65). In other words, it predicts an unemployment rate among migrants p_u which is almost double the overall market unemployment rate u (35% compared to 20%), and that the proportion of migrant workers in the informal sector would be more than double that in the overall labour market (54% compared to 25%). The empirical models' estimated outcomes for the migrant are clearly significantly better than what is predicted in the theoretical model. Migrants seem to do much better than the average job seeker in finding formal employment, and are far less likely to be unemployed. While the proportion of migrants in the informal sector exceeds the overall market proportion, migrants are still much less likely to end up in the informal sector than other job seekers.

Coefficients and marginal effects on other variables in this model of informal sector employment are quite informative. They show that Asians, Coloureds and Whites are less likely to be in the informal sector than Blacks. Rural residents appear more likely to enter informal sector employment, while males and married persons are less likely to be in the informal sector than their respective counterparts. Estimated marginal effects on the education dummies indicate that the more highly educated the individual is, the less likely are they to enter the informal sector. The only exception

is that a person with Standard 1 education is no less likely to have an informal sector job than someone with no schooling. Finally, age has a positive quadratic effect on the probability of informal sector employment.

4.3 Models for Underemployment

The probability of an individual being underemployed is now modelled using data from both 1993 and 1994, conditioning on the same variables as above.

<TABLE 7 ABOUT HERE >

Table 7 reveals that comparatively little is significant in the model for underemployment. Males, household heads, those with standard 7, 9 or tertiary education, rural dwellers and married persons are all less likely to be underemployed than the base individual. More relevant to the focus of this paper, the evidence is that none of the categories of migrants are any more or less likely to be underemployed than non-migrants⁴.

5. Discussion and Conclusions

This study reveals that recent rural-urban migrants (those who have migrated sometime in the past 12 months) are remarkably successful in avoiding unemployment outcomes. The theoretical three-sector model presented in section 2 predicts that if jobs were allocated with equal probability to migrants and non-migrants, the unemployment rate among migrants ought to be much higher than the overall average unemployment rate. However, the empirical evidence suggests that migrants do better than this, and that their unemployment rate is no higher than the average. This result does highlight the importance of the theory developed in section 2. Were the empirical results to be interpreted in the light of the standard Harris-Todaro model as summarised at the beginning of section 2, the non-significance of the rural-urban dummy would be seen as exactly consistent with the theory. Because the Harris-Todaro model effectively assumes 100% labour turnover, the probability of not finding employment is equated with the unemployment rate. However, our more general model highlights the fact that indeed the results are not consistent with the theoretical predictions. There is something about the motivation or qualities of the migrant, which is currently not included in the model, which affords them greater success in avoiding unemployment.

The evidence surrounding informal employment is a little more consistent with the theory, and may in part explain the lower than expected unemployment rates among migrants. Empirical results suggest that indeed recent migrants are more likely to find themselves in informal work than the overall average rate of informal employment. The theory predicts this result, although the proportion of migrants in informal employment is still well below what would be predicted. The evidence also suggests that migrants have better than average success in finding formal employment.

In what direction might we look for an explanation of these results? We would suggest that there is something about the migrant experience that affects the motivations and aspirations of the migrant. Consider the typical potential rural-urban migrant. If she were privy to information that the expected urban wage is higher than her current rural income, then she would be enticed to migrate to the urban area. A long-distance move such as this would surely involve significant planning, including prior research into the specific location and type of jobs that are available. The migrant not only hears about a higher wage, but also about where they can go to get it. Moreover, in giving up her roots the migrant would possess a great deal of motivation to search for employment, to the point where she may take up work which the non-migrant would not consider. Thus the motivation and planning of the migrant is quite different to that of the non-migrant, who restricts job search to her urban surroundings. It seems quite plausible, therefore, that the migrant may find work much more readily than suggested by previous literature, rendering a migrant less likely to be unemployed than their non-migrating counterpart. If formal employment is not available, the migrant would then turn more readily to the informal sector; given the risks and sacrifices they have made to get to this point, they are likely to be highly motivated to find work of whatever form they can.

An alternative explanation for the migrant's relative success in the labour market deserves comment. It has been well documented that it is often the more highly educated who migrate, thus allowing the migrant to hold a general advantage over the non-migrant in terms of formal employment (Becker et. al., 1994). Our investigation has conditioned on such levels of human capital, yet even with this conditioning our results indicate the migrant is more likely to be employed in the formal sector, and less likely to be unemployed.

Our results on the informal sector are somewhat tentative, due to well recognised difficulties in defining the informal sector itself. Borat (1999, p. 323) notes that "the really poor sampling of the informal sector in (the survey) renders it impossible

to undertake any serious analytical work on the sector". We have defined the informal sector largely as those with occupations requiring minimal technology and levels of education, as well as some in certain types of self-employed work. Indeed, this is a common method to determine the informal sector (Becker et. al., 1994), however we have not distinguished between the rural and urban informal sectors. In fact, using our definition, 59% of workers in the rural sector are in informal jobs, while the informal sector comprises only 23% of the urban work force.

Similarly, there are difficulties in how we have classified the self-employed in the informal sector. We follow Kingdon and Knight (2004) and Borat (1999) in saying the informal self-employed can be defined according to occupation category, as well as those self-employed whose business is not registered nor has a VAT number. However, Borat (1999) argues that this approach may provide a distorted representation of the number of domestic workers in the informal sector.

Along similar lines, the labour force excludes those seasonal workers who are not actively seeking work due to the timing of the survey. In South Africa, the peak season for agricultural work is around February each year (Proudly South African, 2003). This aspect could be improved for the purposes of the unemployment rate by considering responses to the October Household Survey question regarding reasons for not working. This question specifically allows for identification of seasonal and contractual labour. Mother tongue or language proficiency could also be key distinguishing variable in the labour market.

A further avenue of research is to examine the income outcomes of the migrant compared with non-migrants. It could be that the new migrant, who is highly motivated to find work of any kind, finds work, yet the wage is so poor that in order to earn enough to justify their move, they must work long and hard hours. Indeed, survey respondents record up to 99 hours worked per week. Income data is available, and it would be interesting to see if this suggests that the migrant is settling for work and income below that of the non-migrant with similar other characteristics.

It is also worth noting that despite the finding that the migrant appears no worse off than the non-migrant in terms of employment prospects, this in no way implies that there is no unemployment or underemployment problem in South Africa among recent migrants and non-migrants. Nor does it suggest that facilities should not be improved in either the urban or rural areas, particularly with respect to improved housing, clean water and sanitation. In fact, it may be better to use the term

desperation rather than motivation to describe the migrant's relative success in the labour market. The migrant who arrives in an urban area will most likely have fewer social networks and other kinds of informal social protection than the non-migrant, and thus be forced - out of desperation - into more active pursuit of work. The quality of this work and the quality of life that accompanies this work and new living environment could well create serious social problems that need policy attention.

Future endeavours could therefore delve deeper into the welfare of the newly arrived rural-urban migrant by examining the income distribution of migrants compared to non-migrants, as well as other measures of quality of life. Policy issues could also be addressed, including the effect of wage subsidies, migration restrictions and development programs, all of which have saturated the Harris-Todaro literature (e.g. Hoddinott (1996), Todaro (1997), De Haan (1999) and Chaudhuri (2000)).

“But none of these currents can compare in volume with that which arises from the desire inherent in most men to ‘better’ themselves in material respects.”

Ravenstein (1889, p. 286, quoted in Basu, 1997, p. 164)

References

- Bardhan, P. & C. Udry, 1999, *Development Microeconomics*, Oxford University Press.
- Barnum, H. N. & R. H. Sabot, 1982, *Education, Employment Probabilities and Rural-Urban Migration in Tanzania*, Oxford Bulletin of Economics and Statistics, 39, 2.
- Basu, K., 1997, *Analytical Development Economics: the Less Developed Country Revisited*, Cambridge, MIT Press.
- Becker, C. M., A. M. Hamer & A. R. Morrison, 1994, *Beyond Urban Bias in Africa: Urbanisation in an Era of Structural Adjustment*, Heinemann.
- Bhorat, H., 1999, The October Household Survey, Unemployment and the Informal Sector: A Note, *South African Journal of Economics*, 67, 2, 320-326.
- Chaudhuri, S., 2000, Rural-Urban Migration, the Informal Sector, Urban Unemployment and Development Policies: A Theoretical analysis, *Review of Development Economics*, 4, 3, 353-364.
- Cole, W. E. & R. D. Sanders, 1985, Internal Migration and Urban Unemployment in the Third World, *American Economic Review*, 75, 3, 481-494.
- Fields, G. S., 1975, Rural-Urban Migration, Urban Unemployment and Underemployment, and Job Search Activity in LDCs, *Journal of Development Economics*, 2, 165-187.
- Gerson, J., 1981, The question of Structural Unemployment in South Africa, *South African Journal of Economics*, 49, 1, 10-25.
- Harris, J. R. & Todaro, M. P., 1970, Migration, Unemployment and Development: A Two-Sector Analysis, *American Economic Review*, 60, 1, 126-142.
- Hart, K., 1973, Informal Income Opportunities and Urban Employment in Ghana, *Journal of Modern African Studies*, 11, 1, 61-89.
- Hoddinott, J., 1996, Wages and Unemployment in an Urban African Labour Market, *Economic Journal*, 106, 1610-1626.
- Kingdon, G. G. & Knight, J., 2004, *Unemployment in South Africa: the Nature of the Beast*, *World Development*, forthcoming.
- Knight, J., 1982, The Nature of Unemployment in South Africa, *South African Journal of Economics*, 50, 1, 1-12.
- Lewis, W. A., 1954, Economic Development with Unlimited Supplies of Labour, *The Manchester School*, 22, 2, 139-191.

Mazumdar, D., 1976, The Rural-Urban Wage Gap, Migration, and the Shadow Wage, *Oxford Economic Papers*, 28, 406-425.

NALEDI, 2000, *Highlights of Current Labor Market Conditions in South Africa*, Johannesburg.

Proudly South African, 2003, www.proudlysa.co.za/about/news/2003/0411.html.

Ranis, G. & J. C. H. Fei, 1961, A Theory of Economic Development, *American Economic Review*, 51.

Ravenstein, E. G., 1889, The Laws of Migration, *Journal of the Royal Statistical Society*, June, 241-301.

Ray, D., 1998, *Development Economics*, Princeton University Press.

Smith, D. M., 2001, *The Apartheid City and Beyond: Urbanisation and Social Change in South Africa*, Routledge.

StatSA, 1998, *Unemployment and Employment in South Africa*, Statistics South Africa.

Steel, W. F. & Y. Takagi, 1983, Small Enterprise Development and the Employment-Output Trade-Off, *Oxford Economic Papers*, 35, 423-446.

Stiglitz, J. E., 1974, Alternative Theories of Wage Determination and Unemployment in LDCs: The Labour Turnover Model, *The Quarterly Journal of Economics*, 88, 2, 194-227.

Todaro, M. P., 1969, A Model of Labour Migration and Urban Unemployment in Less Developed Countries, *American Economic Review*, 59, 1, 138-148.

Todaro, M. P., 1970, Labour Migration and Urban Employment: Reply, *American Economic Review*, 60, 3, 187-188.

Todaro, M., P., 1976, *Internal Migration in Developing Countries*, International Labour Office, Geneva.

Todaro, M. P., 1986, Internal Migration and Urban Employment: Comment, *American Economic Review*, 76, 3, 566-569.

Todaro, M. P., 1997, *Urbanisation, Unemployment and Migration in Africa: Theory and Policy*, Working paper 104.

United Nations Human Development Report 2002, Oxford University Press, 162.

Table 1
Theoretical Employment Outcomes for Recent Migrants

Labour Force Shares			Migration Rate	Formal Sector Turnover Rate	Probabilities of Outcomes for Migrants		
Formal Employment	Informal Employment	Unemployed			Formal Employment	Informal Employment	Unemployed
0.60	0.20	0.20	0.10	0.20	0.29	0.35	0.35
0.40	0.30	0.30	0.10	0.20	0.15	0.42	0.42
0.40	0.40	0.20	0.10	0.20	0.15	0.56	0.28
0.60	0.20	0.20	0.10	0.10	0.21	0.39	0.39
0.40	0.30	0.30	0.10	0.10	0.11	0.45	0.45
0.40	0.40	0.20	0.10	0.10	0.11	0.59	0.30
0.60	0.20	0.20	0.10	0.30	0.35	0.32	0.32
0.40	0.30	0.30	0.10	0.30	0.20	0.40	0.40
0.40	0.40	0.20	0.10	0.30	0.20	0.54	0.27

Table 2
Variables of Interest

Variable Name	Survey Question / Description
ACTIVITY ACTIV1	Activity undertaken most in last 7 days
AGE	Age
GENDER	Gender
JOB_ATT	Did you have a job or enterprise or attachment thereto?
LEVEL_ED	Highest level of educational attainment
MARITAL	Marital status
MIG_COUN	From which country did you migrate?
MOVE_ARE	Have you moved to this area in the last 12 months?
OCCUPAT OCC_EMP	Main category of occupation
PERSON PERSON_NO	Unique number for persons within each household
POP_GRP	Population group: Asian, Black, Coloured, White
PREV_ARE	Was the previous area rural or urban?
REGIS	Business registered with the register of companies, the Commissioner of unemployment insurance or the Commissioner of workmen's compensation
RELATION	Relationship to head of household
VAT	Have a VAT number
UNIQNUM	Unique number given to each household
URBAN	Current dwelling in a rural or urban area?
WK_MORE	Would you like to work more hours?

Table 3
Summary Statistics: Recent Migrants and the Work Force

	Number Surveyed		Unemployment Rate				Proportion of Employed in Informal Sector	Under-employment Rate	
	1993	1994	1993		1994		1994	1993	1994
			Narrow	Broad	Narrow	Broad			
Internal migrants									
Urban-urban	1939	1322	0.096	0.141	0.103	0.153	0.165	0.011	0.018
Rural-rural	691	354	0.127	0.152	0.231	0.265	0.617	0.023	0.023
Rural-urban	550	243	0.283	0.331	0.203	0.234	0.331	0.039	0.008
Urban-rural	619	313	0.151	0.205	0.229	0.278	0.496	0.012	0.037
All internal migrants	3799	2232	0.138	0.182	0.150	0.195	0.283	0.017	0.020
Non-migrants	132485	101656	0.207	0.232	0.248	0.272	0.359	0.020	0.017
All respondents	136468	103922	0.204	0.230	0.245	0.270	0.357	0.020	0.017

Table 4
Models for Unemployment (Narrow Definition)

Variable	Coefficient	t statistic	Marginal Effect
C	1.165	22.304	0.878
ASIAN	-0.743	-36.237	-0.260
COLOUR	-0.576	-43.509	-0.210
WHITE	-1.216	-56.831	-0.365
MALE	-0.058	-5.324	-0.023
HEAD	-0.477	-36.761	-0.178
ED1	0.008	0.259	0.003
ED2	0.071	4.015	0.028
ED7	0.075	3.710	0.030
ED9	-0.110	-5.358	-0.043
EDTERT	-0.860	-26.746	-0.291
EDOTHER	-0.191	-2.217	-0.074
RURAL	-0.262	-22.729	-0.101
UU	-0.103	-2.080	-0.040
RR	-0.288	-3.864	-0.111
RU	0.011	0.141	0.004
UR	-0.001	-0.015	0.000
INTERNL	0.411	1.347	0.162
MARRIED	-0.242	-20.526	-0.094
AGE	-0.542	-20.161	-0.248
AGE2	0.047	13.569	0.021
Y1994	0.180	17.896	0.072

Table 5
Models for Unemployment (Broad Definition)

Variable	Coefficient	<i>t</i> statistic	Marginal Effect
C	1.414	29.201	0.921
ASIAN	-0.679	-35.171	-0.250
COLOUR	-0.582	-45.368	-0.219
WHITE	-0.918	-51.791	-0.318
MALE	-0.169	-16.307	-0.067
HEAD	-0.506	-41.155	-0.193
ED1	0.018	0.656	0.007
ED2	0.077	4.575	0.031
ED7	0.090	4.644	0.036
ED9	-0.136	-6.932	-0.054
EDTERT	-0.840	-28.834	-0.297
EDOTHER	-0.264	-3.227	-0.104
RURAL	-0.209	-19.062	-0.083
UU	0.004	0.096	0.002
RR	-0.278	-3.956	-0.109
RU	0.073	1.054	0.029
UR	0.098	1.434	0.039
INTERNL	0.134	0.444	0.053
MARRIED	-0.159	-14.312	-0.063
AGE	-0.659	-26.995	-0.324
AGE2	0.065	21.218	0.032
Y1994	0.159	16.655	0.063

Table 6
Models for Informal Employment

Variable	Coefficient	t statistic	Marginal Effect
C	1.152	12.647	0.875
ASIAN	-0.473	-14.896	-0.166
COLOUR	-0.092	-4.605	-0.029
WHITE	-0.357	-14.190	-0.122
MALE	-0.264	-13.991	-0.088
HEAD	-0.028	-1.392	-0.009
ED1	-0.021	-0.424	-0.007
ED2	-0.371	-12.081	-0.127
ED7	-1.052	-30.691	-0.394
ED9	-1.492	-42.300	-0.544
EDTERT	-1.771	-43.228	-0.618
EDOTHER	-0.556	-4.638	-0.198
RURAL	0.486	27.025	0.121
UU	0.109	1.676	0.032
RR	0.034	0.285	0.010
RU	0.364	2.724	0.096
UR	0.068	0.557	0.020
INTERNL	0.220	0.469	0.062
MARRIED	-0.164	-9.010	-0.053
AGE	-0.252	-5.745	-0.193
AGE2	0.034	6.449	0.026

Table 7
Models for Underemployment

Variable	Coefficient	t statistic	Marginal Effect
C	-1.622	-13.214	0.052
ASIAN	0.026	0.624	0.003
COLOUR	-0.047	-1.589	-0.004
WHITE	-0.070	-1.926	-0.007
MALE	-0.261	-9.925	-0.021
HEAD	-0.129	-4.500	-0.012
ED1	-0.012	-0.180	-0.001
ED2	-0.004	-0.086	0.000
ED7	-0.131	-2.756	-0.012
ED9	-0.262	-5.352	-0.021
EDTERT	-0.226	-4.111	-0.019
EDOTHER	-0.217	-1.242	-0.018
RURAL	-0.071	-2.660	-0.007
UU	-0.015	-0.168	-0.001
RR	0.061	0.425	0.006
RU	0.083	0.529	0.009
UR	0.111	0.734	0.012
INTERNL	-2.155	-0.176	-0.048
MARRIED	-0.072	-2.866	-0.007
AGE	-0.036	-0.604	-0.002
AGE2	0.006	0.818	0.000
Y1994	-0.067	-2.972	-0.006

Footnotes

¹ The October Household Survey was conducted throughout the 1990's. We use only the 1993 and 1994 surveys, as the question regarding migrants who have moved in the last 12 months was not included in later surveys. This is unfortunate, as the rate of rural-urban migration increased greatly later in the 1990's.

² In the 1993 survey, the variable PREV_ARE allowed for two responses: Urban (67% of 1993 migrants) and Non-urban (33% of 1993 migrants). The 1994 survey, however, distinguishes between individuals who had migrated from City/town (58% of 1994 migrants), Next to city/town (15% of 1994 migrants) and Outside city/town (27% of 1994 migrants). For compatibility and comparability it is desirable to distinguish only between urban and rural origin of migration. The results in this paper are based on classifying those in the Next to city/town category as urban; this seems the most appropriate in terms of the type of labour market these migrants are moving from. We have obtained results where the Next to city/town classification was included as rural, and the differences are very small.

³ Category 9 refers to elementary occupations such as domestic helpers, street vendors and services, doorkeepers, messengers, garbage collectors, labourers and freight handlers.

⁴ Recall that a person is defined as underemployed if they were willing to work more hours if the work was available. This is quite a narrow definition of underemployment, and Table 3 shows that it represents quite a small proportion of the labour force. Further work could be done in the future to explore other ways of capturing the underemployment phenomenon.