The Dynamics of Poverty and Migration in a Rural South African Community, 2001-2005[*]

Mark A. Collinson[1,2,5], Samuel J. Clark[1,3,5], Annette A.M. Gerritsen[4], Peter Byass[2,5],

Kathleen Kahn[1,2,5], Stephen M. Tollman[1,2,5]

[1] MRC/Wits University Rural Public Health and Health Transitions Research Unit (Agincourt); School of Public Health, University of the Witwatersrand, South Africa

[2] Centre for Global Health Research, University of Umeå, Sweden

[3] Department of Sociology, University of Washington, USA

[4] Department of Public Health, University of Venda, South Africa

[5] INDEPTH Network

Working Paper no. 92
Center for Statistics and the Social Sciences
University of Washington

October 20, 2009

CONTENTS

ABSTRACT

This study investigates the dynamics of poverty and its relationship with migration in a rural setting in northeast South Africa during 2001-2005. Against a background of steadily improving household socio-economic status (SES) we describe an endogenous relationship between male and female temporary migration and poverty that appears to have a causal impact on household SES. For the poorest households the most important factors improving SES are government grants and female temporary migrants, while for less-poor households male temporary migrants and local employment are most important.

POVERTY AND MIGRATION IN RURAL SOUTH AFRICA

Introduction and Aims

Throughout the developing world rural households that are unable to sustain themselves using local resources utilize migration as a compensatory livelihood strategy (Cross 2003; Oberai and Singh 1980; World Bank 2003). Migration enables individuals to maximize their return to human capital and allows substantial numbers of rural dwellers to participate in the dynamic urban economy while retaining a rural base (Guest 2006). In the *apartheid* era in South Africa, labor migration was strictly controlled using restrictions on destination and duration of stay, giving rise to patterns of temporary circular labor migration (Posel 2006). Various laws facilitated the provision of cheap labor for the emerging economy of South Africa while simultaneously prohibiting Africans (Black South Africans) from accruing, owning or renting land of their own (Aliber 2003). In this way the migrant labor system simultaneously developed wealth and

structural poverty in South Africa (Wilson 2001).

This study examines the dynamics of poverty, household socio-economic status (SES), migration and other household characteristics in a rural population living in the Agincourt sub-district of Mpumalanga province, South Africa. Focusing on initial conditions at the start of the period 2001-2005 and changes during that period, we address:

1. The effects of temporary labor migration on absolute household SES;

2. The relationship between temporary labor migration and upward mobility from the lower to the upper half of the household SES distribution; and

3. Factors that protect households from remaining trapped in a state of chronic poverty.

Migration and Socio-Economic Status

Migration is fundamentally linked to changes in the socio-economic status of individuals and households (Guest 2006; White 2009). Often viewed as a livelihood strategy (Quisumbing and McNiven 2007), the success of migration in affecting individual or household socio-economic status depends on whether or not and how the migrant is employed (Aliber 2003; White 2009). Four theories dominate the literature on the links between migration and socio-economic status of the household of origin: 'neoclassical', 'new economics of labor migration', 'migrant social networks', and 'world systems'.

In the 'neoclassical' approach migration is seen as a rational response to expected wage differences in different places (Harris and Todaro 1970). For individuals, Lee (1966) highlights a balance of positive and negative factors at the origin and destination that drive the decision to

migrate. He also raises the important issue of migration selection. The shape of the distribution of migrants with household socio-economic status at time of migration is bimodal, heaped at both the high and low extremes. In the neoclassical approach temporary migration is explained through *target income theory* which relaxes the assumption of life-time income maximization and posits that migrants desire to return home as soon as sufficient income has been made (Hill 1987; Lindstrom and Lauster 2001).

In the 'new economics of labor migration' it is argued that households make strategic decisions with respect to migration (Taylor 1999; White 2009). In this framework migration is not used simply to achieve higher income, which would imply that households always choose destinations with the highest wages, but is also used to manage risk to income streams. Assuming the migrant gets a job, he or she participates in an economy different from that of the sending household. The climatic and economic forces affecting these two economies are likely to be different and possibly not even well correlated, and thus by deriving income streams from both, the household is partly protected against a variety of exogenous economic shocks (Stark and Bloom 1985; Stark and Levhari 1982). Remittance transfers are driven by shared expectations about the obligations of kinship (Massey 1990) and are also economically self-reinforcing (Lucas and Stark 1985).

Another meso-level concept is the *migrant social network* which explains where people go and how the momentum of migration builds over time. The 'migrant social networks' theory emphasizes that most migrants go to where they have most connections (Massey and Espinosa 1997). According to Stark and Yitzhaki (1988), household well-being and satisfaction arise not only from improvements in absolute socio-economic status, but also through comparison to

other households in the community. The combination of social networks and *relative deprivation* work together to create a cumulative force that drives and guides migration (Massey 1990).

'World systems' theory describes how at a macro-level there are specific social and economic transformations that mobilize labor through the creation of geographic inequalities in wealth and opportunity (Portes and Walton 1981). Labor migration in South Africa is a case in point. Burawoy describes how this system was enforced under apartheid with specific legal and political mechanisms to regulate geographic mobility. The migrant is deliberately kept powerless in the place of employment and his life is divided between employment in one place and family in another. Thus, the cost of labor renewal is shouldered by the family in impoverished Bantustans outside the remit of the employer or state (Burawoy 1976).

A key question in the literature is how migration affects households and communities, does it improve or worsen their situations? There is no decisive answer and researchers have found support for both possibilities in different communities.   Rempel and Lobdell (1978) review fifty studies in developing world settings and show that remittances mostly increase consumption and education and lead to better housing, but these development impacts are better achieved through return migration than from remittances. Skeldon (1997) shows that the impact of remittances in Thailand is more positive from international migration than from internal, but that the impact of internal remittances can also be substantial, a finding confirmed by Kuhn (2005) in Bangladesh. Return migrants also contribute to communities through bringing back new ideas and attitudes toward family size (Skeldon 1997), and education (Alam and Streatfield 2009). Skeldon concludes that migration can have negative impacts for sending communities, but that

the balance is positive.

The arguments that migration is negative for rural development cover a range of perspectives. The main issue is that out-migration can exacerbate labor shortages leading to negative net impacts on farm incomes (Lucas 1997; Punpuing and Guest 2009; Quisumbing and McNiven 2007). Lipton builds this case and argues that out-migration increases inter-household inequality because only the better-off households can benefit from remittances (Lipton 1980). Furthermore, dependence on remittances serves as a means of retaining traditional systems in rural areas and therefore serves as a brake for development (Azam and Gubert 2006). Links between Mexico and the United States have been examined by Lindstrom and Lauster who highlight the fact that opportunities for small scale investment in the sending communities are a critical driving force behind temporary migration to the United States, but are less important for internal migration within Mexico (Lindstrom and Lauster 2001). This result is consistent with the new economics of labor migration theory. They also find support for the migrant social network theory such that US migrant networks engender further US migration while migrant networks internal to Mexico stimulate further internal migration.

Poverty in Rural South Africa

Post-apartheid South Africa inherited the challenge of being among the world's most economically unequal societies (Klasen 2002; Leibbrandt, Bhorat and Woolard 1999). In 1998 the Human Development Index for South Africa as a whole was 0.63, similar to other middle income countries, but for the White sub-population it was 0.88, roughly equivalent to Spain, and for the

African sub-population it was 0.46, roughly equivalent to Congo Brazzaville (Cheru 2001). Wealth inequality in South Africa is sharply defined both between and within race groups and across geography with particularly stark differences between urban and rural areas. The Project for Statistics on Living Standards and Development (PSLSD) led by the Southern Africa Labor and Development Research Unit of the University of Cape Town in 1993 showed that while *inter-race* inequality remained a huge challenge there was significant inequality *within* race groups, especially within the African population (Leibbrandt, Woolard and Woolard 2000). A strong geographical distribution of poverty emerged at a national level with rural, former homeland areas being the most poor (Aliber 2003). The poverty rate in rural areas was 73%, more than three times the rate in metropolitan areas and the poor households in rural areas were much poorer than their urban counterparts (Klasen 1997). These results highlight national inequalities as well as socio-economic diversity within communities.

In another study, econometric techniques were used to decompose inequality within the rural population by type of income to determine what contribution each income type made in resolving inequality between households (Leibbrandt et al. 2000). Three income types emerged as most influential: remittances from temporary migrants, income from locally employed household members and government grants. These three income types influenced inter-household inequality the most, but did so in different ways. Income from remittances and grants tended to lower inter-household inequality and were most important at the poorer end of the socio-economic spectrum, while incomes from local employment actually increased inter-household inequality and were more relevant in the upper half of the distribution. Other sources

of income considered included agricultural and capital income, but these did not play a significant role in the distribution of household socio-economic status.

Other studies have investigated the dynamics of poverty at the household level to describe the movement of households between socioeconomic levels and identify factors associated with chronic poverty (stagnation) and either improvement or deterioration (movement). Important among these is the KwaZulu-Natal Income Dynamics Study (KIDS) comprised of a panel starting in 1993 with 1,400 households, 1,183 of which were located and interviewed again in 1998 (Carter and May 2001; May et al. 2000). Findings from KIDS reveal that income varies substantially over time for many households, but that there are some households that are stuck and cannot rise out of extreme poverty. These are termed *chronically poor,* in contrast to *transitory poor,* those that are able to change socio-economic status over the course of the study. The distribution of poverty dynamics among the rural households observed by the KIDS study is: 22% households chronically poor, 11% move from poverty to non-poor between the first and second waves of the study, 19% move from non-poor to poor, and 47% stayed non-poor throughout (Aliber 2003).

These studies from South Africa make clear that rural households bear a large burden of national poverty with about half above the poverty line, while in the worse-off half there is dynamic movement into and out of poverty with almost a quarter of households remaining chronically poor. Panel studies from a range of other African countries highlight that a large proportion of poor households are *transitory* poor (Hoddinott 2003). Studies examining factors correlated with chronic poverty show that demographic events – death of an adult bread-winner, losing or gaining a job, a fall or rise in migrant remittances, or a fall or rise in non-labor income (e.g.

government grants) – were the major driving factors moving households into or out of poverty. Statistically, getting a job was more important than changes in earnings within the same job when it came to lifting a rural household out of poverty (Woolard and Klasen 2004).

Data are scarce with which to examine the extent to which remittances from temporary rural migrants offset or contribute to inequality in former homeland populations. It was expected that when apartheid policy was abolished and the restrictions on movement were lifted the pattern of temporary migration would change and families would move more permanently closer to places of employment, but this did not happen. Not only did temporary migration continue, but it actually increased (Collinson et al. 2006; Posel 2006). In particular more women became involved in temporary migration, a pattern that echoes similar patterns of migratory change in Asia and other parts of the developing world (Bilsborrow 1993; Guest 2006).

With the change in political regime and advent of democracy in South Africa, government strategies changed from controlling migration to addressing socio-economic inequality and poverty. A flagship strategy of the Mandela administration was the Reconstruction and Development Programme (RDP) that involved stimulating the labor demand side of the economy, aiming to address structural imbalances that appear as inequalities in opportunities and resources (Government of South Africa 1996). Electricity and water supply were key developments, as was an ambitious national housing program and school feeding schemes that were directed at improved educational performance. In 1996 the strategy evolved into the Growth, Employment And Redistribution policy (GEAR) (Department of Finance 1999; Government of South Africa 1998) that emphasized macroeconomic development in line with

neo-liberal economic policy. This placed emphasis on deficit reduction, restructuring state assets and tax reform. As Cheru (2001) points out, an unplanned consequence was that the GEAR strategy effectively 'rendered national economic system hostage to the vagaries of finance capital'.

Another pivotal poverty-oriented strategy was the roll out of social grants, notably the non-contributory, social pension eligible to men over 65 and women over 60 that paid more than twice the median per-capita African income and became an important source of income for a third of all African households in the country (Case and Deaton 1998). Ardington and colleagues (2007) show that when rural households gain a pension the likelihood that the household sends a prime-age temporary migrant to an urban labor market increases significantly.

Several issues conspired against these poverty reduction strategies including labor market changes typified by the shedding of formal employment; health status changes, with new epidemics including HIV/AIDS and tuberculosis; and dramatic social changes accompanied by high crime rates (Aliber 2003). Nevertheless in 2007 Statistics South Africa published a report that compared poverty statistics between the 1996 national census, 2001 census and 2007 community survey. The report concluded that 'substantial progress has been made with regard to improving the living conditions of South Africans' (Statistics South Africa 2007). The results show positive improvements at national and provincial level with the proportion of people with no formal education decreasing from 19% in 1996 to 10% in 2007 and the proportion with some secondary education increasing from 34% to 40%. Census data from the (inland) Mpumalanga Province shows improvements in living conditions in the period 2001 to 2007. The proportion of

households using electricity for lighting increases from 69% to 82%; use of electricity for cooking increases from 38% to 56%; fridge ownership from 51% to 64% and television ownership from 54% to 66%.

It is likely that migration plays a key role in the socio-economic and poverty dynamics of rural communities, but showing this is difficult for two reasons. First, migration is a diverse phenomenon with both *permanent* and *temporary* patterns, each with different gender dynamics, underlying motivations and potentially different outcomes. Second, there is an endogeneity in the relationship between migration and poverty. This can be conceived as a bi-causal relationship such that less-poor households are more likely to send migrants because they can more easily overcome the costs of migration, such as migrant support and child care constraints, and conversely, migration can improve household socio-economic status through migrant remittances and enhanced social networks. This can also be expressed by noting that households are not equally likely to send a migrant, neither are they likely to be equally poor, and that the same factors may influence both, i.e. there is likely to be unobserved heterogeneity. These problems are addressed in this study using longitudinal data that is sensitive to migration type and includes repeated measures of migration and household socio-economic status (SES).

The Hypotheses examined are:

1. Temporary migration impacts on household SES and decreases the inequity between households over time.

2. Temporary migration affects the upward mobility of households from the lower to the

upper half of the household SES distribution.

3. Temporary migration protects households from remaining trapped in a state of chronic poverty.

DATA

The Agincourt Health and Demographic Surveillance System

This investigation utilizes four years of data collected by the Agincourt Health and Demographic Surveillance System (AHDSS). The AHDSS is a field and computer-based research operation that continually updates a population register describing the population of the Agincourt sub-district of Bushbuckridge District, Mpumalanga Province, South Africa. The data are organized around a household panel that includes all households in the sub-district, 11,737 in 2005 (Kahn K. et al. 2007; Tollman et al. 1999). This study spans 2001-2005 and includes five rounds of data collection on migration and household dynamics and three rounds of data collection on household asset ownership.

Since the baseline in 1992 the surveillance system has conducted a rigorous annual update of the status of various features of each household and of the events occurring within each household – births, deaths, migrations, etc. Importantly, migration is recognized as either *permanent* or *temporary.* A temporary migrant is a household member who was physically absent for at least six months in the year preceding interview but who remained a *de jure* household member while away. A permanent migrant is someone who either entered or exited the study area permanently, i.e. without intent to move *back* or go anywhere else. A household asset survey

that described the salient features of assets owned by each household was conducted in 2001, 2003 and 2005. Modules eliciting household-level information on employment and government grant receipt were conducted in 2000 and 2004.

Migration

Migration and other household factors were extracted from the main AHDSS database in order to classify the experience and exposure of individual people. Migration events include male and female adult temporary and permanent migration. The number of adult temporary migrants of both sexes was computed for 2001, 2002, 2003, 2004 and 2005. Permanent migration is captured as events, either permanent in or out migration, during each year of the study. These events are summed into categories for each combination of male and female in and out-migration. For both permanent and temporary migration, migrants were defined as adults aged 15-64 because migration is more likely to be directly linked to changes in SES in this age group compared to other ages.

Household Socio-economic Status

An asset-based 'absolute SES' indicator was constructed from the household asset surveys. In constructing this indicator the aim was to keep it as simple as possible, retain an additive scale so that the final indicator scales in a cumulative sense and can be compared through time, and finally to recognize that assets fall into importantly different broad groups. To begin each asset variable was coded with the same valence (i.e. increasing values correspond to greater SES) and effectively given equal weight by rescaling so that all values of a given asset variable fall within

the range [0, 1]. Assets were then categorized into five broad groups – 'modern assets', 'power supply', 'water and sanitation' 'quality of housing', and 'livestock assets'. For each household within each asset group, the rescaled asset values were summed and then rescaled again to yield a group-specific value in the range [0, 1]. Finally, for each household these five group-specific scaled values were summed to yield an overall asset score whose value could theoretically fall in the range [0, 5]. In reality, values for the SES indicator range from 0.75 to 3.75. The final overall score effectively gives equal weight to the five asset groupings, and within each group to each of the individual assets.

A number of other more complex asset indicators were constructed and compared to one another and to the individual asset values. This indicator is highly correlated with all of the others and at least or more correlated with the individual asset values as the others, and since it is far easier to calculate and explicate it was chosen for our final analysis. Figure 1 shows the distribution of this indicator for each of the three years of data collection: 2001, 2003 and 2005.

Changes in Household Socio-economic Status

Under apartheid poverty was exacerbated by the migrant labor system that forced a large proportion of the South African black population to relocate to arid, unproductive rural "homelands", thus ensuring that the socio-economic level from which to measure change was low. Adding to this more recently has been the impact of the HIV/AIDS pandemic that has been linked to high levels of labor migration and the settlement dynamics of Southern Africa, including the Agincourt study area (Clark et al. 2007). Increased mortality in the study area has been

accompanied by a reduction of life expectancy of about 12 years in both males and females, with most of the excess mortality occurring to prime-age adults (Kahn 2006; Schatz and Ogunmefun 2007). Despite these negative contextual factors this study reports an overall improvement in SES of the study population, which is in agreement with the national statistics agency (Statistics South Africa 2007). The distribution of household SES in Figure 1 looks like a wide-based normal curve and the whole curve shifts slightly upwards toward higher SES with each successive round of data collection. The largest gains were made in the centre of the distribution (especially between 2003 and 2005) showing that households near the middle rather than at the tails of the distribution enjoyed the greatest improvement in SES.

Figure 1 about here

Examining each of the broad categories of assets that compose the overall indicator, ownership of 'modern assets' showed strong improvement; 'power supply' showed an improvement due to the expansion of electricity coverage to rural areas, and 'water and sanitation' and 'quality of housing' showed some improvement. 'Livestock assets' was the only category of assets to decline over the period.

METHODS

Analytical Approach

The relationship between temporary migration and poverty is conceptualized as having two components: *endogenous* and *causal*. The endogenous or 'selectivity' component recognizes the fact that households with temporary migrants may have been better off to begin with and

thereby initially more likely to send a migrant. This selectivity effect is represented in the models by levels of temporary migration *at the start* of the period. The causal component is the effect of temporary migration on poverty net of the selectivity effect and other factors in the model *during* the period of analysis. The causal component is related to change in the number of temporary migrants after the baseline measurement.

We define three outcome variables and examine different aspects of the relationship between migration and household SES. The first is *absolute household SES at the end of the period* which examines effects on household SES across the whole distribution of SES. The second is *the probability that a household moves from the lower to upper half of the household SES distribution* during the period; this identifies the 'upwardly mobile' households. Finally, the third is *the probability of not being 'chronically poor' throughout the period* – 'chronically poor' defined as having an SES below the median value at the start of the period of analysis in 2001 and not crossing above that threshold throughout the entire period 2001-2005.

Three multivariate statistical models are used to relate these outcome variables to household conditions at the start of the period of analysis in 2001 and to changes during the period 2001-2005. Resulting from our conceptual distinction between endogenous and causal components of the relationship the models take a similar form in which a first set of explanatory variables are given values at the start of the period of analysis to control for heterogeneity in potential among households and a second set of explanatory variables are given values that describe change over the period of analysis.

The first model defined in Equation 1 is an OLS regression of absolute household SES in 2005 on absolute household SES in 2001, twelve other selectivity controls defined in 2001 (the $X_{h,j,start}$ variables) and eight change variables defined between 2001 and 2005 (the $X_{h,k}$ variables). In order to keep the model simple and interpretable and to recognize potential non-linearities in the relationships, the selectivity and change variables are all indicator variables associated with categories or levels of the explanatory quantities. Table 1 contains detailed definitions of the selectivity and change variables along with the results from estimating the model.

$$S_{end} = \alpha + \beta_0 S_{start} + \sum_{j=1}^{12} \beta_{j,start} X_{j,start} + \sum_{k=1}^{8} \beta_k X_k + \varepsilon \tag{1}$$

The second model defined in Equation 2 is a logistic regression of the probability of moving from the lower to upper half of the household SES distribution during the period 2001-2005 on household SES in 2001 and the same selectivity and change variables as the first model, see Table 1. The logit transformation used in Equation 2 is defined in Equation 3:

$$\text{logit}(U) = \alpha + \beta_0 S_{start} + \sum_{j=1}^{12} \beta_{j,start} X_{j,start} + \sum_{k=1}^{8} \beta_k X_k + \varepsilon \tag{2}$$

$$\text{logit}(p) = \log_e \left(\frac{p}{1-p} \right) \tag{3}$$

The third and last model in Equation 4 is a logistic regression of the probability of staying out of chronic poverty as a function of selectivity and change variables similar to those used in the first and second models, see Table 2 for definitions.

$$\text{logit}(C) = \alpha + \sum_{j=1}^{12} \beta_{j,\text{start}} X_{j,\text{start}} + \sum_{k=1}^{16} \beta_k X_k + \varepsilon \qquad (4)$$

The unit of analysis in Equations 1, 2 and 4 is the household: S is absolute household SES, U is the probability of transitioning from the lower to upper half of the household SES distribution, C is the probability of staying out of chronic poverty during the period of analysis, α is a constant, the βs are the estimated coefficients, the Xs are the household-level explanatory variables and ε is a household-level error term. In Equations 1, 2 and 4 the variables indexed by subscript j are related to selectivity effects and take their values at the beginning of the period while the variables indexed by subscript k are related to change during the period and their values are defined over the duration of the period.

All regressions were estimated using Stata 9's 'bootstrap' mode which reports the converged standard errors after 50 repeated estimations. Since the whole Agincourt sub-district population is included in the study (~12,500 households), the bootstrap estimates are in all cases almost identical to the results produced using the usual non-bootstrap estimation methods for each regression type. Throughout the presentation of regression results, the valence of the coefficients we present is such that increasing coefficient values share a positive relationship with the outcome.

Background Factors & Controls

Key household variables known to be associated with socio-economic status through earlier research are included as controls in the models. These are: household size, gender of the household head, nationality of household head (discriminates South African from Mozambican

headship), receipt of government grants by the household, and number of local incomes earned by the household. Male-headed households typically have access to at least the male head's income, and the nationality-of-head association results from the fact that the Mozambican-headed households are former refugee households that escaped civil war in Mozambique in the 1980s and are now self-settled immigrants in the Agincourt study area. As a consequence of their history as refugees they are less able to acquire property, engage in the labor market or access government services, resulting in significantly lower average household SES compared to South African households.

Receipt of government grants to aid in the support of children and the elderly and as disability compensation has been shown to be critical to many rural South African households and is related to household SES in an obvious way. Likewise, local employment plays an important role in the SES status of many of the households.

The household headship variables are included as dummy variables and the remaining controls are handled in a way similar to migration. The level of each is defined at the start of the period in 2001 to control for heterogeneity at the onset, and then 'change' variables are defined to control for change in these quantities during the period.

RESULTS

Dynamics of Temporary Labor Migration and Household SES

The results of estimating Equations 1, 2 and 4 are displayed in Table 1 (Equations 1 and 2) and Table 2 (Equation 4). First we present the selective effects of SES and migration on the outcomes;

then net of selection, the causal effects of migration, and finally the relationship between migration and chronic poverty.

Selection Effects of SES and Temporary Migration

The selection effects describe the relationship between explanatory variables at the beginning of the period and outcomes at the end. This accounts for the fact that households with more resources and migrants are better able to send additional temporary migrants and also increase their SES through a variety of other means.

Table 1 about here

The grey-shaded rows in Table 1 describe the selection effect variables and the relationships they share with the outcomes. The level of household SES at the beginning of the period is a strong and highly statistically significant predictor of both SES at the end of the period and transitioning from the lower to the upper half of the SES distribution. An additional unit of SES at the beginning of the period is associated with a 0.45 increase in SES at the end of the period and also increases the odds of moving from the lower to upper half of the household SES distribution by a factor of 14.

A substantial number of households have temporary labor migrants at the beginning of the period, 49 percent with a male temporary migrant and 26 percent with a female temporary migrant. Regardless of sex, having at least one temporary migrant raises household SES at the end of the period by about 0.03. Similarly, households with at least one temporary migrant have

odds of transitioning to the upper half of the SES distribution about 30 percent greater than households with no temporary migrants at the beginning of the period, and in this case having more than one temporary migrant at the beginning yields a slightly greater increase in the odds of transition. These effects are all statistically significant to highly significant.

Causal Effects of Temporary Migration

The causal effects of temporary migration describe the relationship between *changes* in the number of temporary migrants associated with a household over the period of analysis and the outcomes at the end of the period, net of the initial level of SES and number of temporary migrants and the other control variables. Estimated coefficients for the change variables are presented in the non-shaded rows of Table 1 for both increases and decreases in the number of temporary migrants over the period.

Over the study period just under half the households change the number of male temporary migrants they send; 34 percent increase and thirteen percent decrease the number of male temporary migrants. For female temporary migrants the situation is reversed. About 40 percent of households change their number of female temporary migrants; sixteen percent increase and 25 percent decrease the number of female temporary migrants.

There are important and statistically significant relationships between changes in the number of temporary migrants over the study period and the outcomes. The effect of increasing the number of temporary migrants differs by sex depending on the outcome. An increase in the number of male temporary migrants has a weak positive effect on SES (coefficient 0.01) but a

substantial positive effect on the odds of transition to the upper half of the SES distribution (OR 1.12). In contrast, an increase in the number of female temporary migrants has a stronger positive effect on SES (coefficient 0.03) and the same substantial positive effect on the odds of transition to the upper half of the SES distribution (OR 1.12). The effects of reducing the number of temporary migrants are substantial and do not depend on sex. Reducing the number of temporary migrants has a strong negative effect on SES (coefficient about -0.03) and reduces the odds of transitioning to the upper half of the SES distribution by about 20 percent (OR 0.82 [male] and 0.74 [female]).

Temporary migration has important and statistically significant effects on SES and the likelihood that a household transitions to the upper half of the SES distribution. Recognizing that the scale of male temporary migration is about double that of female temporary migration and that changes in temporary migration favor males, the results suggest that the marginal effect of additional female temporary migrants may be great than that of males.

Factors Protecting Against Chronic Poverty

Despite the general upward movement of the distribution of household SES there was a chronically poor group comprising 29% of households that were unable to lift themselves out of extreme poverty. These households represent a truly trapped subgroup that is immobile at the very bottom of the SES distribution.

Table 2 about here

Table 2 presents the estimated odds ratios from a logistic regression of the binary variable differentiating chronically poor households from the rest against the explanatory variables. Temporary migration is related to chronic poverty in important and statistically significant ways, net of the other factors. Temporary migration for both males and females is endogenous with chronic poverty but inversely related such that households with male and female temporary migrants are unlikely to be chronically poor. The odds ratios are 1.9 for one male temporary migrant and 1.5 for one female migrant in the household. Net of positive selection there is also a causal impact of temporary migration on chronic poverty. Increasing temporary migration of either sex significantly raises the odds of a household not being chronically poor, odds ratio 1.3 for males and 1.4 for females. Consistent with this finding, a decrease in temporary migration of either sex significantly increases the odds of being chronically poor, odds ratio 0.7 for reduction in the number of either male or female temporary migrants.

Table 2 reveals that the most important factor differentiating the chronically poor is the nationality of household head; compared to self-settled Mozambican refugees, South African households are much more likely to not be chronically poor, highly statistically significant odds ratio of 4.8. Households of larger size are also less likely to be chronically poor. Medium size households are also protected, as are male headed households, households with more than one government grant, those for which the number of government grants increased and those with more than one household member employed locally. Permanent migration was included in this model as a control (not shown) but generally does not differentiate households by chronic poverty because as a group the permanent migration variables are only weakly statistically

significant and individually not statistically significant except for very weak significance of changes in permanent female migrants during the period.

Household Characteristics Associated with Poverty

While isolating the effects of migration on household SES through time we have controlled for other household characteristics that are likely to affect household SES: size of the household, gender of the head of the household and nationality of the head of the household. These 'control' variables are indeed strongly associated with household SES, and it is worth considering the estimates associated with them. These controls are included in all three models (Equations 1, 2 and 4), and the estimated coefficients are displayed in Table 1 and Table 2. Household size has an important and highly significant relationship with both absolute SES and the probability of transitioning to the upper half of the SES distribution, Table 1. Larger households tend to have more assets even after controlling for livelihood strategies such as migration, local employment and grants transfers. Over the study period male-headed households make up 66 percent of all households and have higher final SES than female-headed households (coefficient 0.03), and male-headed households are also more likely to transition to the upper half of the SES distribution (odds ratio 1.3), Table 1. Net of everything presented above, the 28% of all households headed by Mozambicans have an extreme deficit in SES compared to South African households. Households headed by South Africans are much more likely to improve their position in the SES distribution over time (odds ratio 1.9) compared to the Mozambican households, Table 1. The number of government grants received by households increased dramatically over the period of observation, Table 1. In 2001 at the start of the period 81 percent

of households did not receive a government grant, and the nineteen percent that did qualified *on the basis of being impoverished*. This is reflected in the results; receiving a grant at the beginning of the period predicts negative outcomes at the end of the period, Table 1.

The critical result with respect to government grants is that they have an important positive effect. Fifty-three percent of households increased the number of government grants they received over the period, while only three percent lost grants. The effects of increasing the number of government grants is highly positive; an increase in SES of 0.04 over the period and an increase in the odds of transitioning to the upper half of the SES distribution of eleven percent.

Local employment is another important source of household income, Table 1. Compared to the 63 percent of households without a local income at the start of the period, the remaining 37 percent are far better off at the end of the period. Net of initial local employment, increasing the number of locally employed persons in the household during the period leads to important, positive outcomes; 0.04 change in SES and 25 percent increase in the odds of transition to the upper half of the SES distribution. Consistently, decreasing the number of locally employed people in the household leads to important, negative outcomes; -0.05 change in SES and 24 percent decrease in odds of upward mobility.

DISCUSSION

Findings

Poverty is a key feature in South Africa's rural areas due to a century of socially repressive laws. Recently labor migration was a cornerstone of the apartheid system but is now used by rural

households as a prime strategy to combat poverty. Despite the removal of apartheid restrictions, the level of temporary labor migration has been and is increasing, especially among young adult males but also among women.

In this study temporary migration is linked to changes in socio-economic status, but not in a straightforward way. There is a positive association with socio-economic status that works through selection and a causal relationship that depends on the economic situation and composition of the sending household. The community itself is poor, remote and underserved by utilities such as schools, health care, water, sanitation and decent roads. As people reach a life stage when things are needed that they cannot procure locally, due to general underdevelopment, they are likely to migrate. Selection then determines who is most likely to migrate. Better-off households are more likely to send migrants since they can overcome the costs of migration and also may have more connections in certain destinations (such as a city suburb) or work sectors (such as a commercial farm). In return the migrant remits a portion of his or her salary, and that becomes an income for the rural household. Thus households selected for sending a migrant also benefit, and this mutual reinforcement keeps migrant-sending households on a better socio-economic track than those that cannot afford to send a migrant.

Households in the poorer half of the population are also stratified, with some transitioning out of poverty and others remaining in chronic poverty. The households that transition out of poverty are those that send migrants, and female migration is a key strategy for these poorer households. Female migrants are more likely to come from female-headed households which are in turn more likely to be in the poorer half of the socio-economic distribution. For the poorest households the

most important factors improving SES are government grants and female temporary migrants, while for better-off households male temporary migrants and local employment are the most important factors.

Our investigation of chronic poverty reveals important stratification in the Agincourt community. The findings on temporary labor migration and local employment show that both rural and urban labor markets play critical roles in the welfare of rural households. As with the analysis of upward mobility, the focus on chronic poverty emphasizes the importance of temporary migration as a livelihood strategy; a select group exists that sends migrants and possesses assets, and they are highly unlikely to be chronically poor. Additionally, sending a temporary migrant lowers the risk of being chronically poor, especially in poorer households that send a female temporary migrant. Households that have lost temporary migrants of either sex, through retrenchment or death, have a significantly higher risk of being chronically poor. Permanent migration within the sub-district is not related to socio-economic change and it does not characterize households in chronic poverty. People in chronically poor households still migrate locally to get married or divorced. Social grants primarily affect households in the poorer half of the SES distribution, although they also generate some improvement in the less-poor half as well. Subgroups that are at heightened risk of being chronically poor are Mozambican refugees, female-headed households and small-size households.

We have examined how migration impacts on the socio-economic status of rural households. We have not directly tested how well different migration theories explain these relationships, but each theory mentioned above has something to offer. World systems theory shows how the

political economy created a legacy of densely settled rural areas with minimal agriculture and a high dependence on labor migration. Where this theory is limited is explaining how household selection stratifies impoverished rural communities and how better-off households are more likely to send migrants. The new economics of labor migration theory predicts this better by describing how households diversify livelihood strategies to minimize risk and compensate for underdeveloped insurance markets. Migrant social network theory has a lot to offer in the South African situation because existing social networks have played a major role in determining where migration streams go and why they are self-perpetuating. Although political restrictions to mobility have been lifted for almost two decades circular labor migration has increased. Social network theory helps to explain how migrants remain connected to rural households while away and continue to send remittances. The likelihood of return migration is high for most rural migrants and acts as insurance for the temporary migrant. Often this is health insurance; the fact that migrants return home when sick or dying is being increasingly documented (Clark et al. 2007; Welaga et al. 2009). Neoclassical theory helps to highlight the individual agency of the migrant that works even in the poorest households that are thereby able to pull themselves out of extreme poverty. We have seen how rural women migrate and remit income from low-paying jobs and informal trading. The target income theory which posits that migrants would prefer to remain in the rural household, but are temporary migrants until a specific amount has been earned, does not seem an accurate depiction of the South African situation. Rather migrants stay away as long as they can earn while remaining strongly committed to the rural community where they were born and expect to retire. In addition to income, successful migrants contribute a variety of other things to the household of origin, including a range of urban attitudes and

behaviors such as the value of education and utilization of modern health care services. Migrants from impoverished households are driven by necessity and the perceived livelihood possibilities. This highlights their agency, despite the systemic inequalities that are correctly described by world systems theory.

Overall there is a positive relationship between temporary migration and rural development. We show how male migration tends to increase inequity in the rural community while female migration tends to decrease it. However, these economic consequences are not the whole story. There are health and social impacts not investigated in this paper. These include the heightened risk of sexually transmitted disease at both ends of the migrant partnership. The HIV epidemic has contributed a tragic twist to this story because the positively selected temporary migrants who are important household earners are often at increased risk of HIV infection and eventual death. Temporary labor migration also jeopardizes the mental health of spouses who are often separated and increases the risk of child death when mothers and their children are apart.

Implications

Policies that improve access to employment in both formal and informal sectors are likely to positively affect rural poverty. Labor migration remains a mainstay of household income and asset generation. Employment opportunities for men and women are required in both rural and urban areas. Temporary migration should be facilitated and made safer by measures such as enhancing long-distance public transport, improving roads and introducing migrant-oriented health services. Mechanisms for transferring remittances safely back to remote areas are

essential. Since urban centers are increasingly viewed as 'home to the nation's poor'- largely because informal settlements are so visible - it is imperative that the extent of urban poverty is not misinterpreted. Migrants from rural areas are positively selected sojourners who access urban labor markets, commercial agriculture and game farms and remit back to rural homes, a fundamental process of generating and distributing resources. Improving living conditions for the urban poor and farm laborers will benefit the rural poor and should be part of a strategy for national economic development.

Limitations

The migration typology adopted for this study simplifies the complex reality of migration in this rural population. Female temporary migration is more transient and fluid than male temporary migration. When interactions between the 'levels' and 'change' variables are examined (results not shown), male temporary migration effects are made sharper and have some statistically significant interactions, while female temporary migration effects are dispersed by similar interactions. These observations can be explained if households experience more frequent transitions between female temporary migration levels. This in turn implies that the values presented in this study are influenced by the timing of measurement, but we expect that these arbitrary observation times are sufficiently random that the findings hold up with the large population described by these data.

FIGURES AND TABLES

Figure 1:   The Distribution of Socio-Economic Status by Year.
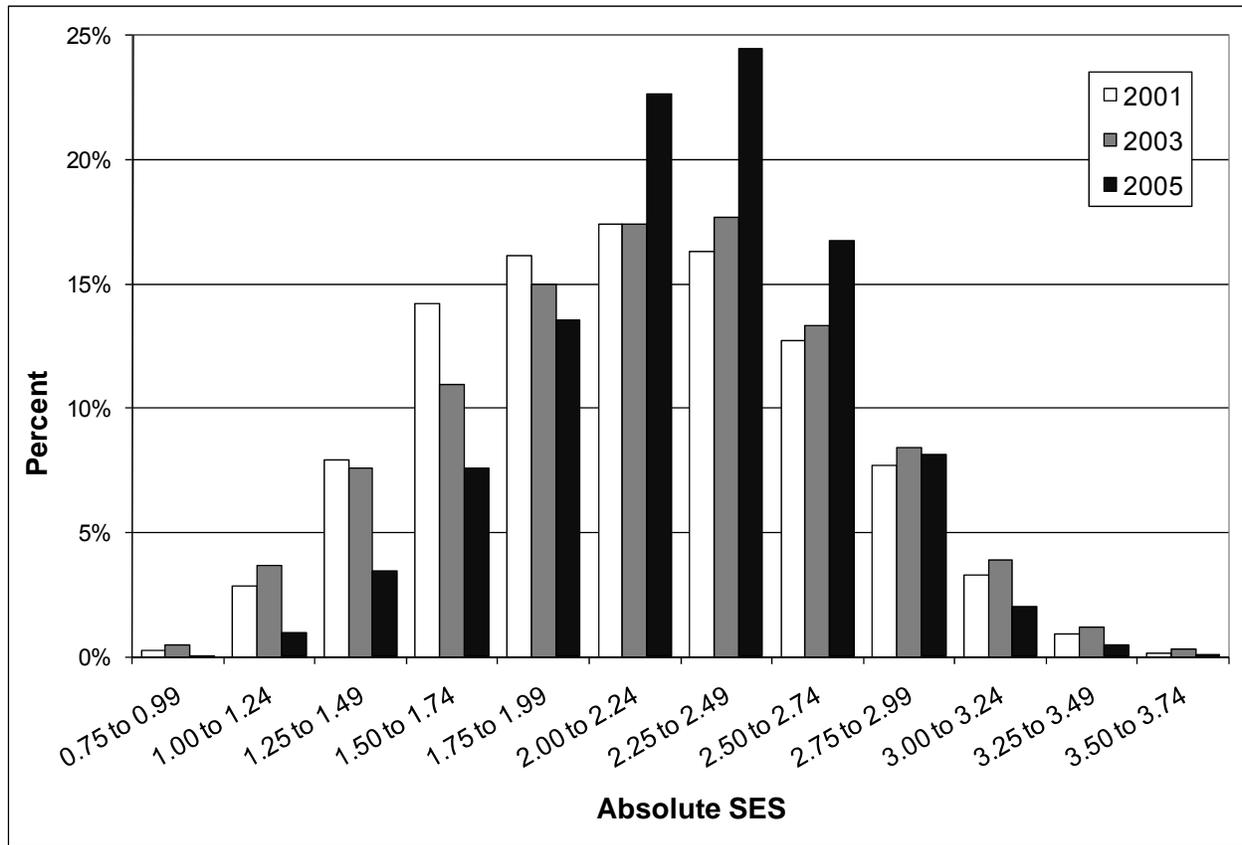
Histograms of the percentage of households by socio-economic status show changes in poverty

levels between three successive rounds of data collection from 2001 to 2005.

Table 1:   The Dynamics of Poverty, Migration and other Household Factors, 2001-2005.

Explanatory Factor and Timing	Indicator-coded Explanatory Variable	n	%	OLS regression (Eqn. 1) Coefficient: SES absolute	Logistic regression (Eqn. 2) Odds Ratio: upper half
SES **At start of period**				0.45 (0.44, 0.47)§	14.02 (12.24, 16.06)§
Male temporary migrants **At start of period**	Reference: none	5,675	51		
	1	3,945	36	0.04 (0.03, 0.05)§	1.25 (1.11, 1.41)§
	>1	1,507	13	0.03 (0.01, 0.05)‡	1.34 (1.12, 1.6)§
Male temporary migration Change during period	Reference: no change	5,911	53		
	increase	3,753	34	0.01 (0, 0.03)†	1.12 (1.01, 1.25)‡
	decrease	1,463	13	-0.04 (-0.06, -0.02)§	0.82 (0.69, 0.99)‡
Female temporary migrants **At start of period**	Reference: 0	8,265	74		
	1	2,218	20	0.03 (0.02, 0.05)§	1.26 (1.05, 1.5)‡
	>1	644	6	0.03 (0, 0.07)†	1.42 (1.07, 1.88)‡
Female temporary migration Change during period	Reference: no change	6,785	59		
	Increase	1,835	16	0.03 (0.01, 0.04)§	1.12 (0.99, 1.27)‡
	decrease	2,920	25	-0.03 (-0.05, -0.01)§	0.74 (0.61, 0.89)§
Government grants **At start of period**	Reference: 0	9,513	81		
	1	1,866	16	-0.01 (-0.02, 0.01)	0.85 (0.75, 0.97)‡
	>1	375	3	0 (-0.03, 0.03)	0.78 (0.58, 1.07)
Government grants Change during period	Reference: no change	5,164	44		
	increase	6,258	53	0.04 (0.03, 0.05)§	1.11 (1.02, 1.21)‡
	decrease	332	3	-0.03 (-0.06, 0.01)	0.79 (0.57, 1.08)
Local Incomes **At start of period**	Reference: 0	7,438	63		
	1	3,117	27	0.05 (0.03, 0.07)§	1.34 (1.17, 1.53)§
	>1	1,199	10	0.08 (0.05, 0.1)§	1.72 (1.33, 2.21)§
Local Incomes Change during period	Reference: no change	6,494	55		
	increase	2,867	25	0.03 (0.01, 0.04)§	1.25 (1.08, 1.45)§
	decrease	2,393	20	-0.05 (-0.07, -0.03)§	0.76 (0.65, 0.89)§
Household size **At start of period**	Reference: 1-3	3,132	27		
	4-8	6,017	51	0.05 (0.03, 0.07)§	1.22 (1.07, 1.38)§
	9+	2,637	22	0.06 (0.03, 0.08)§	1.38 (1.17, 1.63)§
Sex of household head **At start of period**	Reference: female	3,823	34		
	male	7,318	66	0.03 (0.02, 0.05)§	1.3 (1.16, 1.46)§
Nationality of HH Head **At start of period**	Reference: Mozambican	3,093	28		
	South African	8,048	72	0.13 (0.11, 0.14)§	1.9 (1.71, 2.1)§
Constant				1.11 (1.08, 1.14)§	
				N = 9,564 Adjusted R^2 = 0.44	N = 9,564 Pseudo R^2 = 0.25

95% confidence interval: (lower bound, upper bound); Statistical significance: § = $p < 0.01$; ‡ = $p < 0.05$; † = $p < 0.1$

Table 2: **Logistic Regression of 'Not Chronically Poor' on Migration and Household Factors, 2001-2005.**

Explanatory Factor and Timing	Indicator-coded Explanatory Variable	Logistic Regression (Eqn.4)	
		OR	95% CI
Male temporary migrants **At start of period**	Reference: none		
	1	1.87	(1.65, 2.13)[§]
	> 1	1.96	(1.61, 2.38)[§]
Male temporary migration Change during period	Reference: no change		
	increase	1.29	(1.14, 1.47)[§]
	decrease	0.73	(0.62, 0.86)[§]
Female temporary migration **At start of period**	Reference: none		
	1	1.50	(1.27, 1.77)[§]
	> 1	1.73	(1.3, 2.3)[§]
Female temporary migration Change during period	Reference: no change		
	increase	1.35	(1.17, 1.56)[§]
	decrease	0.70	(0.57, 0.87)[§]
Government grants **At start of period**	Reference: none		
	1	1.06	(0.92, 1.23)
	> 1	1.90	(1.36, 2.66)[§]
Government grants Change during period	Reference: no change		
	increase	1.53	(1.38, 1.71)[§]
	decrease	0.75	(0.55, 1.01)[†]
Local incomes **At start of period**	Reference: none		
	1	1.74	(1.49, 2.02)[§]
	> 1	2.64	(2.09, 3.32)[§]
Local incomes Change during period	Reference: no change		
	increase	1.28	(1.11, 1.47)[§]
	decrease	0.63	(0.53, 0.75)[§]
Household size **At start of period**	Reference: 1-3		
	4-8	1.72	(1.52, 1.95)[§]
	9+	2.10	(1.77, 2.49)[§]
Sex of household head **At start of period**	Reference: female		
	male	1.48	(1.32, 1.67)[§]
Nationality of household head **At start of period**	Reference: Mozambican		
	South African	4.76	(4.27, 5.32)[§]

N = 9,656
pseudo R^2 = 0.13

95% confidence interval: (lower bound, upper bound); Statistical significance: § = $p < 0.01$; ‡ = $p < 0.05$; † = $p < 0.1$

REFERENCES

Alam, N.and P.K. Streatfield. 2009. "Parent's Migration and Children's Education in Matlab, Bangladesh." in *Households Unfolding: INDEPTH Network Perspectives on the Dynamics of Migration, Health and Livelihoods*, edited by M.A. Collinson, Adazu, K., White, M.J., Findley, S.E. London, UK: Ashgate.

Aliber, M. 2003. "Chronic Poverty in South Africa: Incidence, Causes and Policies." *World Development* 31(3):473-490.

Ardington, C., A. Case, and V. Hosegood. 2007. "Labor supply responses to large social transfers: longitudinal evidence from South Africa." in *NBER Working Paper Series 13442*: National Bureau of Economic Research.

Azam, J.-P.and F. Gubert. 2006. "Migrants' Remittances and the Household in Africa: A Review of Evidence." *Journal of African Economies* 15(Suppl 2.):426-462.

Bilsborrow, R.E. 1993. "Internal Female Migration and Development: An Overview." Pp. 1 - 17. New York: United Nations.

Burawoy, M. 1976. "The Functions and Reproduction of Migrant Labor: Comparative Material from Southern Africa and the United States." *The American Journal of Sociology* 81(5):1050-1087.

Carter, M.and J. May. 2001. "One Kind of Freedom: Poverty Dynamics in Post-apartheid South Africa." *World Development* 29(12):1987-2006.

Case, A.and A. Deaton. 1998. "Large Cash Transfers to the Elderly in South Africa." *The Economic Journal* 108(450):1330-1361.

Cheru, F. 2001. "Overcoming Apartheid's Legacy: The ascendency of neol-liberalism in South Africa's anti-poverty strategy." *Third World Quarterly* 22(4):505-527.

Clark, S.J., M.A. Collinson, K. Kahn, and S.M. Tollman. 2007. "Returning Home to Die: Circular labour migration and mortality in rural South Africa." *Scandinavian Journal of Public Health* 35(Suppl. 69):35-44.

Collinson, M.A., S.M. Tollman, K. Kahn, S.J. Clark, and M. Garenne. 2006. "Highly prevalent circular migration: households, mobility and economic status in rural South Africa. ." in *Africa on the Move: African Migration and Urbanisation in Comparative Perspective*, edited by M. Tienda, S.E. Findley, S.M. Tollman, and E. Preston-Whyte. Johannesburg: Wits University Press.

Cross, C. 2003. "Migrant Worker's Remittances and Micro-finance in South Africa." in *Social Finance Programme*. Human Sciences Research Council: Pretoria, South Africa.

Department of Finance. 1999. "Budget Review." Pretoria: Government of South Africa.

Government of South Africa. 1996. "White Paper on Reconstruction and Development." Pretoria.

—. 1998. "Poverty and Inequality in South Africa." in *Office of the Deputy Vice President*. Pretoria.

Guest, P. 2006. "Bridging the Gap: Internal Migration in Asia." Pp. Pp. 194 – 216 in *African on*

the Move: Migration in Comparative Perspective, edited by M. Tienda, Findley S.E., Tollman, S.M., Preston-Whyte, E. (eds) Johannesburg.: Wits University Press.

Harris, J.R.and M.P. Todaro. 1970. "Migration, Unemployment and Development: A Two-Sector Analysis." *American Economic Review* 60(1):126-142.

Hill, J.K. 1987. "Immigrant decisions concerning duration of stay and migratory frequency." *Journal of Development Economics* 25(1):221-234.

Hoddinott, J., Quisumbing, A., de Janvry, A., Woldehanna, T. . 2003. "Pathways from Poverty: Evaluating Long-term Strategies to Reduce Poverty. ." in *Basis Brief.* : Department of Agricultural and Applied Economics, University of Wisconsin, Madison, USA.

Kahn K., S.M. Tollman, M.A. Collinson, S.J. Clark, Twine R., B.D. Clark, M. Shabangu, F.X. Gómez-Olivé, O. Mokoena, and M. Garenne. 2007. "Research into health, population and social transitions in rural South Africa: Data and methods of the Agincourt Health and Demographic Surveillance System. ." *Scandinavian Journal of Public Health* 35 (Suppl. 69):8-20.

Klasen, S. 1997. "Poverty, Inequality and Deprivation in South Africa: An Analysis of the 1993 SALDRU Survey." *Social Indicators Research* 41(1-3):51-94.

—. 2002. "Social, Economic and Environmental Limits for the Newly Enfranchised in South Africa." *Economic Development and Cultural Change* 50(3):607-642.

Kuhn, R. 2005. "A Longitudinal Analysis of Health and Mortality in a Migrant-Sending Region of Bangladesh." Pp. 177-208 in *Migration and Health in Asia*, edited by S. Jatrana, M. Toyota and B.S.A.Yeoh: Routledge.

Lee, E.S. 1966. "A Theory of Migration." *Demography* 3(1):47-57.

Leibbrandt, M., H. Bhorat, and I. Woolard. 1999. "Understanding Contemporary Household Inequality in South Africa." in *Development Policy Research Unit Working Paper. No 99/25*: University of Cape Town.

Leibbrandt, M., C. Woolard, and I. Woolard. 2000. "The Contribution of Income Components to Income Inequality in the Rural Former Homelands of South Africa: a Decomposable Gini Analysis." *Journal of African Economies* 9(1):79-99.

Lindstrom, D.P.and N. Lauster. 2001. "Local economic opportunity and the competing risks of internal and U.S. migration in Zacatecas, Mexico." *International Migration Review* 35(4):1232-1256.

Lipton, M. 1980. "Migration from Rural Areas of Poor Countries: The Impact on Rural Productivity and Income Distribution." *World Development* 8(1):1-24.

Lucas, R.E.B. 1997. "Internal Migration in Developing Countries." Pp. 721-798 in *Handbook of Population and Family Dynamics*, edited by M.R. Rosenzweig, Stark, O. Amsterdam: Elsevier Science Publishers.

Lucas, R.E.B.and O. Stark. 1985. "Motivations to Remit: Evidence from Botswana." *Journal of Political Economy* 93(5):901-918.

Massey, D.S. 1990. "Social structure, household strategies and the cumulative causation of migration." *Population Index* 56(1):3-26.

Massey, D.S.and K. Espinosa. 1997. "What's driving Mexico-US migration: A theoretical, empirical and policy analysis." *American Journal of Sociology* 102:939-999.

May, J., M.R. Carter, L. Haddad, and J.A. Maluccio. 2000. "Kwazulu-Natal Income Dynamics Study (KIDS) 1993-1998: A Longitudinal Household Data Set for South African Policy Analysis. ." *Development Southern Africa* 17(4):567-581.

Oberai, A.S.and H.K.M. Singh. 1980. "Migration, Remittances and Rural Development: Findings of a case study in the Indian Punjab." *International Labour Review* 119(2):229-241.

Portes, A.and J. Walton. 1981. *Labor, class and the international system.* New York: Academic Press.

Posel, D. 2006. "Moving On: Patterns of Labour Migration in Post-Apartheid South Africa." in *Africa on the Move: African Migration and Urbanisation in Comparative perspective*, edited by M. Tienda, Findley S.E., Tollman, S.M., Preston-Whyte, E. Johannesburg: Wits University Press.

Punpuing, S.and P. Guest. 2009. "Migration and Agricultural Production in Kanchanaburi, Thailand " in *Households Unfolding: INDEPTH Network Perspectives on the Dynamics of Mirgration, Health and Livelihoods*, edited by M.A. Collinson, .K. Adazu, M.J. White, S.E. Findley. London: Ashgate.

Quisumbing, A.R.and S. McNiven. 2007. "Moving Forward, Looking Back: The Impact of Migrant's Remittances on Assets, Consumption, and Credit Constraints in sending Communities in the Rural Phillipines." in *ESA - Working paper No. 07-05*. The Food and Agriculture Organization of the United Nations.

Rempel, H.and R.A. Lobdell. 1978. "The Role of Urban-to-Rural Remittances in Rural Development." *Journal of Development Studies* 14(3):324-341.

Skeldon, R. 1997. "Rural-to-Urban Migration and its Implication for Poverty Alleviation." *Asia-Pacific Population Journal* 12(1):3-16.

Stark Oand S. Yitzhaki. 1988. "Labor Migration as a Response to Relative Deprivation." *Journal of Population Economics* 1(1):57-70.

Stark, O.and D.E. Bloom. 1985. "The New Economics of Labour Migration." *American Economic Review* 75(2):845-867.

Stark, O.and D. Levhari. 1982. "On migration and risk in LDCs. Economic Development and Cultural Change." 31(1):191-196.

Statistics South Africa. 2007. "Community Survey 2007 (Revised version), Statistical release P0301." Pretoria: www.statssa.gov.za.

Taylor, J. 1999. "The New Economics of Labour Migration and the role of remittances in the migration process." *International Migration* 37(1):63-86.

Tollman, S.M., K. Herbst, M. Garenne, J.S.S. Gear, and K. Kahn. 1999. "The Agincourt Demographic and Health Study - Site Description, Baseline Findings and Implications." *South African Medical Journal* 89(8):858-864.

Welaga, P., V. Hosegood, R. Weiner, C. Hill, K. Herbst, and M.-L. Newell. 2009. "Coming home to die? The association between migration and mortality in rural South Africa." *BMC Public Health* 9(193):doi:10.1186/1471-2458-1189-1193.

White, M.J. 2009. "Migration and Demographic Surveillance: An overview of Opportunities and Challenges." in *Households Unfolding: INDEPTH Network Perspectives on the Dynamics of Migration, Health and Livelihoods*, edited by M.A. Collinson, .K. Adazu, M.J. White, S.E. Findley. London: Ashgate.

Wilson, F. 2001. "Minerals and Migrants: How the Mining Industry has Shaped South Africa." *Daedalus: The Proceedings of the American Academy of Arts and Sciences* 130(1):99-122.

Woolard, I.and S. Klasen. 2004. "Determinants of Income Mobility and Household Poverty Dynamics in South Africa." in *Institute for the Study of Labour (IZA) Discussion Paper*. Bonn, Germany.

World Bank. 2003. "Workers Remittances: An Important and Stable Source of External Development Finance." Pp. pp 157-175 in *Global Development Finance*: World Bank, Washington D.C.