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Race and Patriarchy: Gender and Migration in South Africa, 1950-2000

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Abstract:

Apartheid was not only a racial project, but also a patriarchal project that encouraged family separation. By design, black men and women in South Africa had quite different experiences under the apartheid regime, although many times they did not follow the strict patriarchal and racial laws. There is not much good historical data about gender differences in migration in South Africa, so I use a unique data set (2000 South African Migration and Health Survey) that includes retrospective life histories for a nationally representative sample of the black population to investigate the impact of apartheid policies on both men's and women's past and present migration patterns. Overall, I find that both women and men became increasingly likely to move over time, both during after the apartheid years and that women were more likely to move with their families, contrary to conventional wisdom and unlike migration patterns in other contexts. Women may not have moved at the same rates as men, but this paper gives evidence that despite apartheid's intended effects of family separation, both women and men were moving as families. Gender and migration patterns are relatively understudied, especially for historical populations, so this paper's findings add to our understanding of both historical and current gendered migration patterns, particularly in South Africa.

INTRODUCTION

The literature on gender and migration has grown enormously over time, and has improved its understanding of the varied nature and outcomes of women's and men's movements, as well as the interaction of these movements and other social and economic processes. Nevertheless, the extant literature still (with a few exceptions) primarily focuses on international migration, especially South-North migration, rather than internal migration, and often examines only men's or only women's movements, rather than both. This is particularly true of the quantitative literature. Moreover, the literature on gender and migration is limited in sub-Saharan Africa. This, as well as the poor data availability, has resulted in the gendered migration patterns some places with broad and deep histories of migration, such as South Africa, being poorly documented and studied.

Apartheid was, in some ways, not only a racial project, but also a patriarchal project that encouraged family separation. By design, black men and women in South Africa had quite different experiences under the apartheid regime. Men were expected to participate as migrant laborers in the regulated formal labor force (primarily as mine workers), while women were expected to remain in the homelands to care for their households and children. Thus few employment opportunities were available for women, and women and men were meant to occupy separate spheres. Despite the intent, however, the reality was that some men remained in the homelands and some women actually moved to urban areas to seek employment (primarily in the informal sector—beer brewing, prostitution, trading, domestic work—but in some places in formal sector textile factories) (Hart 2002).

Little good historical data exist about gender differences in migration in South

Africa. Thus the impact of apartheid policies on both men's and women's past and present migration patterns is understudied. This paper aims to remedy this problem using a unique data set that includes retrospective life histories for a nationally representative sample of the black population, addressing one of the major shortcomings of previous studies. Through the use of event history methods, I investigate changes in migration patterns (and the factors that affected these patterns) for both men and women during the last half of the twentieth century in South Africa. I use the 2000 South African Migration and Health Survey (SAMHS) to examine the gendered patterns and determinants of internal migration for the black population of South Africa. I seek to answer three main research questions in relation to black migration in South Africa during the last half of the twentieth century (1950-2000). First, how did patterns of internal migration change and persist over this time period for women and men? Second, how did the determinants of internal migration change and persist over this time period for both men and women? And, finally, assuming that the patterns and determinants of internal migration *did* change over this time period, did these changes begin before the official end of the apartheid regime?

I begin the paper with a brief overview of the literature on gender and migration, with a focus on sub-Saharan Africa. Then I discuss demographic and historical change in South Africa, emphasizing what other researchers have found about gendered patterns of migration there during and after the Apartheid era. I then discuss the data and methods of analysis, followed by a presentation of the results. The final section of the paper discusses what the results mean in terms of our understanding of gender and migration, especially in sub-Saharan Africa.

GENDER AND MIGRATION

In their excellent review of the sociological literature on gender and migration, Curran et al. (2006) argue that starting in the late 1970s, women were "brought into" the migration literature and more and more studies began to examine the importance of gender in the migration process. However, as they also note, much of the recent scholarship has been qualitative, not quantitative, and although our understanding of the crucial importance that gender and gender roles, relations, and norms play in shaping migration and migrant's lives, gender is often not included as a "key constitutive element" by quantitative researchers (Curran et al. 2006). This was probably particularly true for studies of migration in the Global South, and especially in sub-Saharan Africa, up until fairly recently. However, there are an increasing number of studies in the last decade and a half which do examine gender differentials in migration and recognize the importance of gender as a determinant of migration.

In terms of the literature on international migration, there is still a difference of opinion about whether there has been a "feminization" of international migration. Recent data from the United Nations (United Nations 2013) suggests that this is not the case, but other analysts find that women do indeed represent a growing percentage of all immigrants residing in high-income countries and the women have higher skilled emigration rates than do men (Docquier et al. 2009). A comprehensive analysis of gender composition of migrants over time in the U.S. and 26 other countries revealed an overall increase in the percentage of women migrants over time towards near gender-parity in many countries, yet some flows that remained male-dominated (Donato

et al. 2011).

Although comparable analyses do not exist for internal migration on the global level (regrettably, Bell and Muhidin's 2009 global comparative analysis of internal migration does not include gender), there are numerous examples of research on men's and women's or just women's labor migration to urban areas (Agesa 2003; Agesa and Agesa 1999; Chattopadhyay 1998, 1997; Curran et al. 2005; Gugler 2008; Gray 2009; He and Gober 2003; Henry et al. 2004; Roberts 2002). In sub-Saharan Africa, although market women have migrated (or commuted) for centuries in some countries (see, for example, Clark 1999, 1995), the predominant modes of migration traditionally were men's labor migration (often temporary or circular in nature), and women's marriage and family migration. Some researchers find these patterns to still be predominant in certain contexts (see, for example, Henry et al. 2004). Yet, there are an increasing number of studies that find similar mobility patterns for men and women (Beauchemin and Bocquier 2004; Reed et al. 2010; Reed 2013) or even increased migration for women (Tacoli and Mabala 2010), and a greater propensity to send remittances when they do migrate (Tacoli and Mabala 2010; Curran et al. 2005; Van Wey 2004).

THE SOUTH AFRICAN CASE

Demographic Transition

Recent evidence has shown that South Africa was on the forefront of the demographic transition in sub-Saharan Africa (Cohen 1998). Fertility decline among black South Africans began several years before the South African government extended its family planning program to blacks in 1974. The gradual fertility decline continued

throughout the 1970s. So, by the mid-1980s, women were estimated to have about 4 children on average, and this declined even further by the end of apartheid, perhaps even below 4.0 children per woman (Cohen 1998). As apartheid's constraints on blacks' opportunities slowly crumbled in the later 1980s and early 1990s, the pace of fertility decline quickened (Moultrie and Timaeus 2003). The country is now well advanced in the fertility transition and birth cohorts have already peaked in size, so like many countries around the world, South Africa's annual population growth rate has been steadily declining. The total fertility rate (TFR) for black South Africans was estimated to be 2.9 in 2007 (Lehohla 2010). The estimated overall growth rate was approximately 1.3 percent in 2001-2, but only 1 percent in 2007-8 (Statistics South Africa 2007). South Africa's declining growth is not only due to declining fertility rates, as is the case in most countries, but also because of increasing mortality rates due to HIV/AIDS, which according to some recent estimates, accounts for about 40 percent of all mortality in South Africa (Bradshaw et al. 2003). While the national TFR has declined from almost 5.0 in 1980 to 2.7 in 2007, life expectancy has declined from almost 62 years in 1990 to only 49 years in 2005 (United Nations Population Division 2006).

The estimated overall HIV prevalence rate is current around 11 percent and the HIV positive population is approximately 5.3 million (Statistics South Africa 2007). The AIDS crisis has hit South Africa very hard, in part because of labor migration and the accompanying separation of families. Migration has the potential, often realized, to spread contagious disease by putting those who are infected in contact with those who are not. Packard (1989) described this relationship between mining labor migration and the spread of tuberculosis in South Africa in his seminal book on the topic. More recently,

researchers have shown that a similar process is occurring with the HIV epidemic. Originally, many researchers believed that migrant male laborers, who worked away from their homes and families for long periods of time, were likely to become infected with HIV while they are away and then to infect their partners or wives when they returned to their rural homes (Mabey and Mayaud 1997; Mbizvo et al. 1996; Pison et al. 1993). Yet more recent research has uncovered a more complex process in which men may infect their rural partners when they return home, but rural female partners also take on outside relationships in the rural areas and become infected with HIV through those relationships (Lurie 2006). Moreover, men who have lived in four or more places are more likely to be HIV-positive, which points to the importance of the social disruption and extended family separation associated with multiple relocations (possibly dislocations forced as a result of government resettlements and political violence) as a risk factor for HIV in South Africa (Lurie et al. 2003).

Gender and Migration

Pass laws, segregation policies, and the labor migration system had wide-reaching effects on black South Africans' families and social structures. The separation of families meant that women were taking on many of the responsibilities traditionally held by male heads of households. Inter-generational tensions were exacerbated as young men used their wages to buy cattle for their own bride wealth, established their own households, and formed their own associations, sometimes eschewing the traditions of their elders (Thompson 2001). Kinship networks maintained their importance in African life, however, and helped to sustain families who did not have a migrant wage earner.

Despite the destructive nature of the migrant labor system, the remittances sent by miners also preserved rural households, which explains why migrants continued to go to the mines to work and why those who were not recruited (so-called "voluntaries") also went in search of employment (Crush, Jeeves and Yudelman 1991). The patriarchal society, led by rural chiefs and reinforced by the segregation project, promoted traditional values of owning land and cattle as status measures among black Africans. This ensured that many migrants maintained their social ties to their rural home places. Because subsistence farming could not support families in the reserves, it was in the interest of the rural households to maintain their ties with their migrant workers, who sent them remittances. Women who remained in the rural homes had to maintain subservience and maintain the land to ensure that their husbands sent remittances and ultimately returned home to retire (Ross 1999). Relations between men and women suffered under this segregated system as some men grew more distant from their rural homes and families.

Despite the harsh reality of apartheid, Africans survived and created their own social worlds, in which they often ignored the government's attempts to divide them ethnically; they married across ethnic lines and younger generations identified as Africans (or even as "Blacks""—a group which included Africans, coloureds, and Indians), rather than as Xhosa, Zulu, Sotho, Pedi, or Tswana. Many African women, doubly oppressed by the government and sometimes abandoned and abused by African men, worked hard to hold their families and the fabric of rural society together.

Women's Labor Force Participation

Apartheid planners viewed African women's labor as unnecessary and women's

work was not included in urban labor force plans. Even laundry was a "male" labor task (Nesvag 2000). Women's main paid work was thus restricted to the informal sector, primarily in beer brewing and prostitution. This situation worsened as apartheid restrictions intensified starting in the 1950s; black residence in cities was only justified by formal sector labor needs, thus, women were not considered legitimate urban residents (Bozzoli 1991). As legislation (e.g., the Black (Urban Areas) Consolidation Act No. 25 (1945) and the 1950 Group Areas Act) was enacted to crack down on black street traders and small business owners, it became increasingly difficult for women to earn their livelihoods (Nesvag 2000). Therefore, labor opportunities in the cities were scarce for women through the mid-1970s. Nevertheless, some women—particularly those who had been abandoned or mistreated by their husbands——did migrate to urban areas and enter into the informal sector, generally as brewers or traders, but sometimes as prostitutes too. Although men patronized these women's businesses, the women were also heavily criticized for lacking respect for male authority and lacking morals. They were also harassed by the police who raided their breweries and seized illegal beer (Ross 1999).

By the 1980s, the Apartheid government had begun to recognize the commercial possibilities of the black townships (where blacks—mostly men—lived adjacent to white urban centers, separated by "buffer zones", while commuting to work for whites in the city) and made plans to use these townships and their buffer zones as industrial estates (Hart 2002). While much of the labor force for heavy industry (chemicals, metal, machinery) was male, there was an increase in female labor in the lighter industries such as clothing and textiles, some of this due to Taiwanese investment in South Africa. Thus, labor opportunities for women in urban areas, and the possibility of moving to urban

areas, increased (Hart 2002). Although influx control laws remained in place, along with severe state restrictions on labor and mobility, some women did now have access to wage-based employment opportunities (although wages were very low and working and housing conditions extremely poor) and thus more independence, as well as the potential to live in urban neighborhoods within the townships (Singh 2007).

Despite this history, there is little good quantitative data about women's migration patterns before 1993. Many researchers assume that very few women migrated during the apartheid era, although qualitative researchers have found evidence that they did participate in migration streams, particularly to cities and particularly in informal labor markets (Bozzoli and Nkotsoe 1991). Nevertheless, most labor migrants in apartheid South Africa were men.

Family Migration to Cities during Apartheid

Resistance to the extremes restrictions of the Apartheid government took many forms. There is anecdotal evidence that beginning in the 1970s, some black men fought the system and moved their families with them to the townships and even to the mining compounds and hostels (Wolpe 1988). The subsequent overcrowding led to outbreaks of violence against not only the management, but also by workers against each other (Crush, Jeeves and Yudelman 1991). Other research has found that young men and women increasingly formed households together in the squatter settlements of the townships, although they often did not marry in defiance of traditional norms (Bank 2001).

The separation of the sexes occurred in urban areas too. One researcher argues that young couples who began to live together without marrying in the townships during

the 1980s formed the basis of the government's social programs centered on the nuclear family as a building block of a stable post-apartheid urban society. Yet in her research in the Duncan Village settlement outside of East London in the Eastern Cape, she found that many of these relationships were not at all like traditional families and far from stable. Instead, new household and family forms were arising in the shacks of the squatter settlements which have yet to be well-understood. But gender relationships in these areas were fraught with tensions and most of the women never married, even if they did have children. Ultimately they either invested in their rural homes, with hopes to retire there, or became rooted in the city, investing in their communities there (Bank 2001).

Recent Migration Trends

Now there is theoretically free movement, yet the legacies of apartheid remain in the spatial and economic distribution of the population and in migration patterns as well. Although historical trends are difficult to ascertain given the poor quality of data, it is possible to take a look at shorter-term trends, particularly since 1980, using census and national survey data. Comparing census data, some authors found that overall migration rates remained relatively constant between 1975 and 2001, with about 12 percent of the population moving in any given five-year period. Yet they argue that most of this migration is temporary or circulating (Kok and Collinson 2006; Collinson and Wittenberg 2001). Another researcher found that between 1993 and 1999, internal labor migration increased slightly and that rural households with a migrant worker outside the house were increasingly likely to receive remittances over this time period (Posel 2003).

Yet another study did not find that permanent migration was replacing circular migration as an economic strategy (which is what one might have expected once families were free to move together) (Posel and Casale 2003).

This evidence suggests that despite black South Africans' new freedom to move permanently and as a family unit, temporary and circular migration is not abating as a household economic strategy. Commuter migrants have become more common; these workers live in the compounds while at work, but commute on a regular monthly or weekly basis from family homes in rural areas or townships (Crush, Jeeves and Yudelman 1991). Other authors have come to similar conclusions (Collinson et al. 2006a; Posel 2006; Kok and Collinson 2006; Kok et al. 2003). Yet there is some evidence from KwaZulu-Natal that fewer migrants are sending remittances to rural areas and maintaining their rural ties (Mosoetsa 2004; Cross, Mngadi and Mbhele 1998). This may point to some decline in circular migration in certain areas of the country.

By 1999, men were still twice as likely as women to migrate, but at least one study has documented a clear increase in female labor migration during the 1990s (Posel 2003). In fact, the small increase in total labor migration between 1993 and 1999 (less than 1 percent) appears to be driven by women, who in 1999 made up about one-third of all migrant workers (in 1993, they were only 29 percent) (Posel 2003). These women migrants are more likely to be in rural areas, however, which suggests a step migration strategy in which women first move to small towns or farms in search of employment, before making moves to larger urban areas (Posel and Casale 2003). This also suggests that women are maintaining ties to the rural areas.

Women in households that own land and with young children are much less likely

to migrate, since they are expected to maintain their traditional roles of childcare and farming (Posel and Casale 2003). Yet in households with older children and retired women receiving pensions, women of working age are more likely to move, possibly leaving their children in the care of their grandmothers or other older women in the household while they seek employment to pay for increased educational expenses for their older children (Posel and Casale 2003). Meanwhile, there are several studies that find migration between rural areas (or to small towns within rural areas) increased, as people seek work in the farms and game lodges in these areas, because the costs of migrating to another rural area or small town are lower than moving to the city (Collinson et al. 2006b; Bekker 2002; Posel and Casale 2003; Collinson and Wittenberg 2001; Cross, Mngadi and Mbhele 1998).

The increasing instability of formal sector employment in the wake of neo-liberalism has led to more informal sector workers of both sexes in petty trading, hawking, and other street enterprises, both in large cities and in towns. This informal sector employment has been particularly important for women entering the labor force, who make up about 46 percent of the informal sector work force as seamstresses, brewers, sellers, and prostitutes (Statistics South Africa 2001; Todes and Posel 1994). Women have also been increasing their migration to cities to work as domestic servants (Collinson et al. 2006a; Dinat and Peberdy 2007). Domestic work, as well as work cleaning offices and hotels, accounted for about 45 percent of female migrant workers' employment in the late 1990s (Cox, Hemson and Todes 2004).

Unemployment has increased for both sexes, and migrant men are much less likely to work as mineworkers as mining employment recedes. Casale and Posel (2002)

have dcoumented that the feminization of the labor force has coincided with more women being unemployed or working in low-paid, informal sector jobs. More and more men are working as drivers, in construction, or in the private security industry (Cox, Hemson and Todes 2004). As finding employment becomes more difficult for men, women have become less likely to live with employed men or to marry, so their need to migrate to look for work on their own has increased (Posel and Casale 2003). Meanwhile, as women increasingly live alone and become heads of households, they may have greater freedom to migrate, since several historians believe that traditionally female mobility was restricted by their fathers, husbands, and chiefs in rural areas (Posel 2003; Todes 2001; Walker 1990; Bozzoli and Nkotsoe 1991).

Nevertheless, it seems that there has been at least some increase in women migrating with men or to join their husbands who have already migrated (Posel and Casale 2003). One might have expected that the possibility of settling permanently in urban areas after the ending of apartheid would have led to a decrease in the importance of remittances. The increase in social pensions received by rural households after 1992 might have reduced the need (or perceived need) for remittances. The growing reliance on lower-paying and unstable informal sector employment might also reduce the ability of migrants to send remittances. And finally, traditional ties to rural agricultural land or livestock might be expected to be on the decline as well (Posel 2003). However, there is some evidence that investments in rural retirement houses have replaced these more traditional investments among some groups (James 2001; Todes 1998). At least one study found that many rural households continue to receive remittance income and that it remains a significant part of their overall income (Posel 2003).

HYPOTHESES

How do gender, household and family migration strategies, shifts in the job market (e.g., from the formal sector to informal employment), and other factors relate to the shift from "international" to internal migration (in other words, from mobility between the homelands and townships or urban areas, which used to be like "international" migration and is now internal)? One might expect to see an increase in family migration, because families were previously separated by the labor control system, but are now free to move together (Posel 2003). In addition to its emphasis on racial segregation, the apartheid system promoted gender segregation in both employment and residence by keeping many women working in rural areas while men migrated for employment in the mines and factories. Thus, one might hypothesize that there would also be an increase in female migration, because the labor market is more open (and less driven by the mining industry) and women have additional freedom under a less patriarchal system (Posel 2003). The end of labor control might also portend the diversification of both origins and destinations for migrants as flows are freed up and new development and urbanization increasingly drive migration flows (Cox, Hemson and Todes 2004). Finally, the post-apartheid expansion of internal transportation networks may mean that circular labor migrants are able to return home more frequently than before.

The evidence regarding these changes is mixed and sometimes based on poor quality data for understanding historical change. Thus far it seems that the end of apartheid may have led to some changes in migration patterns (such as the increase in

female migration and the diversification of origins and destinations), but that other expected changes may not have occurred (such as the increase in permanent family migration). Understanding what happened after the "borders" were opened—in other words, what happened as "international" migration flows became internal migration flows in South Africa—requires further analysis. By examining the historical patterns and determinants of migration in South Africa, my paper may not only improve empirical knowledge of these patterns in this particular country, but, more broadly, I can also help to clarify the similarities and differences between internal and international migration.

Freedom of movement will be measured in the statistical analysis in terms of the probability of various types of migration. Note that almost all types of migration are expected to have increased over time after 1976, as apartheid was gradually dismantled and new possibilities for mobility opened up. Although migration restrictions for black South Africans remained on the books until 1991, and the apartheid government was not out of office until 1994, I expect that black migration increased in each of the three historical periods as black resistance to apartheid strengthened and mobility opportunities opened up. There are new labor opportunities for women in increasing service industries, and the demise of apartheid also meant a weakening of patriarchal controls on female movement, so female migration is also expected to have increased. There is some evidence in post-1994 data regarding this (Posel and Casale 2003), but again, there is no data to compare historical patterns, so my analysis will help to clarify the patterns. The end of labor control also leads me to expect that family migration would have increased, as families became free to move together. There was also an expectation among some analysts that after apartheid ended, circular and temporary migration would decline

because of the ability for families to move together. Several studies, however, have found evidence of continuing strong patterns of circular and temporary migration (Kok and Collinson 2006; Cox, Hemson and Todes 2004; Posel and Casale 2003; Posel 2003). Therefore, while I hypothesize that family migration will have increased over time, it is possible that this increase may be small, because of persistent patterns of circular migration and continued strong ties to rural areas.

Although the political changes and changes to the laws in South Africa are key predictors in the models of increasing migration, there could be other explanations for migration changes. Labor market and economic shifts may also play a role; as the South African economy, which was traditionally heavily dependent on the mining industry, shifted to an economy more reliant on the informal sector particularly in the 1990s, these changes likely contributed to changes in migration as well. For example, as fewer men were recruited into mining labor pools, more of them may have begun moving to the cities in search of work in construction, transportation, trading or other informal work. As fewer men were able to get steady work in the mining sector, perhaps more women turned to looking for work outside of the home to support their families. Demographic shifts, like decreased fertility and the increased mortality rates due to HIV/AIDS may also have had an impact on changing migration patterns. Although I cannot directly test these alternative explanations because of a lack of data, it is important to keep in mind that some changes in migratory behavior might be due to economic or socio-demographic changes as well as broader political changes. In future work, I will examine whether the pattern of migration changes seems to map more closely to political, economic, or demographic shifts.

From previous work with this same data, we know that the probability of migration increased overall in each subsequent historical period (Reed 2013). Our expectations in terms of gendered patterns of mobility are the focus of this paper. Although I still expect that men's mobility will be higher than women's, I expect both to have experienced increases in migration over the four periods. And we expect to observe some differences by gender in terms of types of migration and origin-destination flows. To summarize, the hypotheses relating to the historical changes in gendered migration patterns due to the demise of apartheid are that, for black South Africans, all other things being equal:

- ☐ Men's probability of moving increased over each of the four time periods (net of the overall increase);
- ☐ Women's probability of moving increased over each of the four time periods (net of the overall increase), but somewhat less than men's probability of moving;
- ☐ Both men and women experienced an increased probability of moving across provincial borders over time, but this increase was greater for men;
- ☐ Men and women, but men especially, experienced an increased probability of moving to urban areas over time;
- ☐ The probability of moving with one's immediate family increased over each of the four time periods (net of the overall increase) for both men and women, but especially for women;
- ☐ The probability of moving alone increased over each of the four time periods (net of the overall increase) for both men and women, but especially for men.

DATA AND METHODS

This paper utilizes the South African Migration and Health Survey (SAMHS), collected between November 1999 and March 2000, which was conducted by the Population Studies and Training Center (PSTC) at Brown University, the Centre for Population Studies (CENPOPS) at the University of Pretoria, and the Human Sciences Research Council (HSRC) of South Africa. The SAMHS data are particularly useful for examining changes over time because they include lifetime residence histories for all individuals surveyed. They are also unique because they are nationally representative for the adult black South African population (age 18 and older) in the year 2000 (Population Studies and Training Center et al. 2002). A national sample of 2,552 black South Africans over the age of 18 years old was drawn using a stratified sampling procedure to account for urbanization and proportion of migrants (Roux 2000).

For the purposes of the survey, a household was defined loosely as all the people who live together for at least four nights a week (not necessarily under the same roof, but on the same premises), who eat together, and who share resources. Usual household residents were determined by the respondent for the household questionnaire (often, but not always, the household head). For group quarters or hostels, each unrelated person was considered a single-person household, even if they shared meals or lived in the same room (Roux 2000).

After each household questionnaire was complete, the household roster was used as a sampling frame from which a systematic random sample of one eligible individual (a usual resident 18 years or older) in the household was drawn; this selected individual was interviewed for the individual questionnaire (Roux 2000). The individual questionnaire

focuses on the migration experience of the respondent. This includes a detailed lifetime migration history, with the origin and destination of each move, reasons for the move, and work experience before and after the move. Respondents were also asked about social networks used in connection with each move and resources used for moving and finding a job and housing. The questionnaire also includes related information regarding remittances and visits to the home place following the last residential move (Details about any moves of a month or more made in the year prior to the survey were collected.) (Population Studies and Training Center et al. 2002). Data from the individual questionnaire, including the residential migration history are the data I use for this analysis.

Data Quality and Limitations

The overall quality of the data is very high because of the careful training of field workers and supervisors, and the detailed editing and checking of the data that occurred both in the field and during data entry and coding (Roux 2000). The data compare favorably to results obtained from the 2000 Census, which further underlines the high quality of the data (Population Studies and Training Center et al. 2002). As with any large survey, there were a few missing values (fewer than 2 percent of the questions for fewer than 2 percent of the sample) for some of individual questionnaire items as well. However, because of the comprehensive nature of the survey and the number of questions that were asked twice but in different ways at different points during the interviews, logical inference and deduction were sufficient to fix the majority of these missing values. For example, in the beginning of the questionnaire there are a number of

questions about the nature of the current residence (province, rural/urban location, etc.). Then, later in the residential history module, a series of similar questions about the current place of residence (last place in the history) are asked again. These types of cross-checks are quite common in high-quality surveys. Occasionally, it was not possible to use cross-checks to determine the correct value for a missing value on a particular question (this was the case for fewer than 1 percent of the questions for fewer than 1 percent of the sample). In these cases, I coded the value into the omitted category of the independent variable in question, so that any bias would be an underestimate of the effect of the independent variable on the dependent variable in the models.

Although the data are some of the best available for South Africa and sub-Saharan Africa generally, as with any survey, there are a few limitations. One limitation of the survey is that it is limited to the black population of South Africa, so it is not possible to compare migration patterns between different population racial sub-groups. Whites, coloureds (or persons of mixed racial ancestry), and Indians are not included in the data set (Roux 2000). This potential limitation, however, does not affect my study, because blacks make up 80 percent of the total population and there are so few good sources of data about black African migration in South Africa, particularly during the apartheid era. Thus, the data enable me to explore the patterns of black African migration in the country over time, which is the main focus of my research. One other limitation of the sample is that I cannot compare internal migrants to international migrants because there are so few international migrants.

Another limitation to the data is imposed by the definition of usual resident employed by the survey, i.e., that a usual resident is a person who usually sleeps in the

household for at least four nights a week. This definition makes it difficult to distinguish between temporary and permanent migrants, since some potentially temporary migrants might satisfy this condition and be classified as usual residents. Although some information on temporary migration is found in a separate module of the individual questionnaire, it is outside of the scope of this paper. Thus, at the household roster level, from which the selection of lifetime or ever migrants for the residential history was made, it is difficult to distinguish between temporary and permanent migrants. In the historical context of South Africa, where so many blacks were part of sometimes temporary and sometimes more permanent labor migration streams, it is especially difficult to separate temporary and permanent migration (either conceptually or formally) anyway. For the purposes of these analyses, however, I will assume that all residential moves that respondents report (e.g., a move of at least one month or more) are more permanent than temporary. This assumption means that some temporary moves may be analyzed as more permanent, and perhaps some overestimation of permanent moves will occur. However, due to the fact that I examine moves over such a long historical trajectory (almost 50 years), an event history analysis of the temporality of migration or of short-term moves would be a massive and nearly impossible undertaking. Although the information is available (moves are coded by both year and month), these data as well as the module on short-term migration will have to be the subject of a future analysis.

Another potential limitation is that, because the data were collected in 2000, they can capture moves that occurred during the apartheid era, but they only represent up to six years of mobility during the democratic era (post-1994). Thus, if mobility patterns have changed and continue to change (which is likely) in the subsequent years (2000 to

2008 and beyond) in ways that are quite different from the period immediately following the first democratic election in 1994, this survey cannot capture those changes. Nevertheless, one of my key goals for the paper is to explore how migration patterns began to change prior to the official end of the apartheid laws in 1991 and prior to 1994. So this limitation does not affect the analysis very much. One might expect a slow ramping up of mobility among blacks in the immediate post-apartheid era, or alternatively, one might expect a rapid increase in migration, followed by a leveling off of movement. Either way, I investigate migration patterns during the 1990s, and future survey and census data can indicate whether the 1990s patterns were a historical anomaly or not.

Recall bias is a possible limitation for any survey that asks for detailed retrospective information; respondents may sometimes have difficulty recalling details of their lives and it is likely to be more difficult to recall events that happened many years ago than it is to remember more recent events. When events are placed within the framework of a life history, however, the quality of recall is generally improved (Smith and Thomas 2003; Moreno and White 1989). Detailed questions about each place of residence and the circumstances surrounding the move (including province, rural or urban location, month and year of the move, the reason for moving, co-residents in the month after moving, and occupations before and after the move) were asked of respondents. This approach helps to reduce the potential issue of recall bias. If recall bias is a major issue, one might expect to find clustering of moves reported around the years of particularly salient historical events (e.g., the 1976 Soweto uprising or the 1994 election), or around the years of important personal events. The moves are fairly evenly

distributed across the years of the study, so recall bias does not seem to be a major problem with this data set.

Finally, there are two potential limitations of the variables used in the statistical analyses. Although residence histories and some individual socio-demographic characteristics are available, some key characteristics and variables were only measured in the year 2000, and therefore cannot be included as predetermined covariates in the models. Only residence histories were collected, not marital histories or educational histories. Marital status, the number of children ever born, and completed education are all measured in the year 2000, and therefore represent the completed marital, fertility, and educational attainment of migrants (and non-migrants), rather than characteristics measured before a potential move (or non-move) that could be considered predictors of that move. For example, someone might report being married in the year 2000, but he may have been married previously (in 1990) and divorced (in 1993), which could have occurred immediately prior to a move (in 1994). Thus, while his marital status as a determinant of that move will be "currently married" (as of 2000), if I had perfect life history information, his status should actually have been "divorced". Thus, these variables can only serve as proxies of prior human capital attainment and demographic behavior and may either over- or underestimate the effects of education, marital status, and fertility on migration. Although one might argue that someone who is married in the year 2000 is qualitatively different from someone who is not married in the year 2000, it is still not reflecting the fact that the two people could have quite different marital histories over time. I attempt to deal with this endogeneity by running the models in several different ways, which I discuss later in the paper.

Methods and Variables

In this section, I describe the variables and methods which I employ in the analyses. All variables are summarized in Table 1. Following the description of the dependent variables and models, the key independent variables, and finally, other independent variables are described. Before describing the variables and multivariate methods in detail, I present a brief background about the descriptive methods. I conducted all of the descriptive and multivariate analyses using either Excel or STATA 10/SE statistical software. Unequal sampling weights are used in the descriptive and analytical results to account for the stratification introduced by the sampling design. Because of the complex clustered sample design, robust standard errors are also calculated for all analyses. All descriptive statistics are presented weighted, to account for differential sampling probabilities. All multivariate analyses are conducted using unweighted data, but Huber-White or "sandwich"" estimators are used to estimate robust standard errors to adjust for the sampling design and possible correlation within cases in the event history models.

Definitions of Migration

The lifetime retrospective histories include detailed locational information (e.g., province, rural or urban location, district) for all of the places where an individual has lived for one month or more. Thus, for the purposes of my analysis, the temporal definition of any residential move is when a person moved to a new place of residence for

a period of at least one month. Defining migration requires a geographical definition as well as a temporal definition; in this study there are several geographical definitions for a move, because there are several types of moves that are analyzed. The first type of move is any residential move, which is defined as any change in residence, even if it is a move within the same village, town, or city. Recall that South Africa has ten provinces. A second type of move is a change in residence within the same province (intra-provincial), while a third type of move is a change in residence in which a migrant crosses a provincial border (inter-provincial). These moves are compared in the same multinomial logit model described later and serve as proxies for more local moves and longer-distance moves. The third type of move is a move from a rural area to another rural area (rural-rural), while the fourth type of move is a move from a rural area to an urban area (rural-urban). These moves are also compared in the same multinomial logit model. Rural and urban locations were as reported by the respondent. The fifth type of move is a move from an urban area to a rural area (urban-rural) and the sixth type of move is a move from one urban area to another urban area (urban-urban). Again, these moves are compared in the same multinomial logit model.

Event History Models

I use a discrete-time event history logit model – an extension of logistic regression – to estimate the probability of a migration event occurring in the current year as a result of the previous year's characteristics (as available) as well as some current characteristics and non-changing characteristics. I run the models separately for men and women. This estimation procedure divides time to migration into discrete intervals

(calendar years) and estimates the probability of observing a move event within each interval. This model not only accommodates repeated observations from the same individual, but also time-varying covariates, because for each discrete interval a new value of the covariate can be included (Yamaguchi 1991; Box-Steffensmeier and Jones 2004). The time-varying independent variables are lagged by one year on the assumption that changes in covariates in the previous year may affect the probability of migrating in the current year. I begin the analysis at age 12 (the age when the residence history begins) and continue up to the current age (at the time of the survey, in the year 2000) for all adults (age 18 and older in 2000) in the sample.

Although calendar intervals of one year may be subject to some potential misreporting due to misremembering of sequences or timing by respondents, it is likely that a key life event such as a move of one month or more will be fairly well reported. The event history analysis begins with a simple logit model containing basic demographic and socio-economic characteristics and then moves to a more complex model incorporating historical periods and other covariates as described below. The model for the analysis is:

$$\log \quad [p_{it} /(1-p_{it})] = \alpha + \beta_x X_i + \beta_x X_{i(t-1)}$$

where X_i represents covariates that are constant over time; $X_{i(t-1)}$ represents time-varying covariates; and the β_xs are the respective coefficients. This equation estimates: the probability of any residential move (the first set of models), the probability of moving within a province or across provinces (the second set of models), the probability of moving between rural and urban areas (the third set of models), and a

number of other types of moves; compared with not moving in a given year, as a function of the previous year's characteristics, some current characteristics (as of the year 2000), and constant characteristics. The second and third sets of models, focusing on intra-provincial and inter-provincial and rural-urban moves, rely on multinomial logistic (MNL) regression to capture multiple discrete outcomes, here alternative destinations. These MNL models estimate: a) the probability of moving intra-provincially, or inter-provincially, compared with not moving at all, for all individuals; b) the probability of moving to a rural area or to an urban area, compared with not moving at all, for a subset of the sample: rural residents at any time t-1; and c) the probability of moving to a rural area or to an urban area, compared with not moving at all, for a subset of the sample: urban residents at any time t-1.

Dependent Variables: To account for various types of mobility, there are a number of dependent variables related to migration used in the event history models. All moves come from the lifetime migration histories collected in the individual questionnaire and are coded by year of the move. The moves are included in the person-year data set, so the place of residence for each year of each person's life is recorded and any change in that residence indicates a move. Thus, individuals contribute multiple person-years (equal to the span from age 12 to their age in the year 2000) to the analysis. For example, if an individual is 28, he/she contributes 16 person-years to the models. Individuals who have moved more than once also contribute multiple move events to the analysis.

The first type of model predicts the probability of any residential move; the simplest definition of migration. The dependent variable is any move, coded 0 if there is

no move, or 1 if there is a change in residence. The second type of model predicts the probability of changing residence or moving within one of the provinces of South Africa or between provinces, compared with not moving. The dependent variable is coded 0 if there is no move, 1 if there is an intra-provincial move, and 2 if there is an inter-provincial move.

The next set of dependent variables relates to moves between rural and urban locations. The third type of model predicts the probability of moving from a rural area to another rural area, from a rural area to an urban area, or not moving, for rural residents at time t-1. The dependent variable in these models is coded 0 if there is no move, 1 if there is a rural-rural move, and 2 if there is a rural-urban move. Similar models are estimated for urban-origin populations at time t-1. The next model predicts the probability of moving from an urban area to a rural area, from an urban area to another urban area, or not moving. The dependent variable is coded 0 if there is no move, 1 if there is an urban-rural move, and 2 if there is an urban-urban move. The models estimating any move, intra- versus inter-provincial moves, and rural-urban moves were run for male and female sub-populations separately to test for differential gender effects. The model for any move was run for different age sub-groups—age 12-64 and age 65 and older in 2000—to test for recall bias. It was also run for age 25 and older to test the educational attainment variables as proxies for previous human capital accumulation (see discussion below). The models estimating any move, intra- and inter-provincial moves, and rural-urban moves were also run separately for the person-years before 1976, between 1976 and 1985, between 1986 and 1993, and between 1994 and 2000 (see below for discussion of historical time periods). For some of the pre-1976 models there were

sample size problems (because there were so few moves during that period), so they were omitted. Not all of the results are shown here, but are available from the author upon request.

Additional dependent migration variables are based on circumstances surrounding the move. Recall that these variables are part of the migration history, so they are available for event history analysis. However, as these variables are only available for those who moved, these analyses are essentially only estimating probabilities of different types of moves for those who ever move during their lifetimes. The first type of model predicts the probability of a move with one's immediate family members, as compared to a move alone or with other relatives or friends. Family moves are defined as moves with one's spouse or children. This variable is coded 0 if there is no move or another type of move, and 1 if there is a family move. Another type of model predicts the probability of moving alone, as compared with moving with family, friends, or other people. This variable is coded 0 if there is no move or if the migrant moved with someone, and coded 1 if he or she moved alone.

Key Independent Variables: The key independent variables for the models are the historical time periods and provinces. There are four key time periods: pre-1976, post-Soweto (1976-1985), post-pass laws (1986-1993), and post-election (1994-2000). Pre-1976 is the omitted category and the other three time periods are included in the models as dummy variables. Understanding migration patterns within different regions of South Africa is also important, so the other key independent variables are provincial dummy variables. Three variables are included in the models: residence (in the previous year) in one of the Cape provinces (Northern, Eastern or Western Cape);

residence in KwaZulu-Natal province; and residence in Gauteng or Free State provinces. The Cape provinces are grouped together because migration patterns in that region of the country are somewhat isolated from patterns in the rest of the country and there were very few cases in the Northern Cape. Gauteng and Free State are grouped together because of their proximity and interrelated labor markets, and because there are a relatively small number of cases in Gauteng. Residence in the other provinces (Northern/Limpopo, North-West, and Mpumalanga) is the reference category; these provinces are grouped together because of their relatively rural nature, their proximity to one another, and their locations on the northern border of South Africa. The three major cities (Cape Town, Durban, and Johannesburg, respectively) and much of the population resides in these three areas measured by the dummy variables: the Cape provinces, KwaZulu-Natal, and Gauteng/Free State.

Other Independent Variables: Both age and sex are usually key predictors of migration patterns. Age is included as a lagged term, so that age in the previous year predicts mobility in the current year. A lagged quadratic term is included (age squared in the previous year) to account for the usual curvilinear pattern of mobility by age. The probability of having ever migrated starts at age 12 at about 30 percent, and increases gradually to a probability of almost 70 percent by age 50, then levels off and even declines slightly to about 65 percent by about age 60 (not shown). The other simple covariate is sex, which is a fixed covariate and is coded 0 for male, 1 for female. The models presented here are run separately for men and women.

The next set of covariates is those variables dealing with marital status, childbearing, and human capital. Recall that these variables must be considered as

proxies for previous behavior, because they are measured in the year 2000, and are neither time-varying nor true prior predictors of mobility. Marital status in the year 2000 is a simple dichotomous variable, coded 0 if one is not married (never married, widowed or divorced) and coded 1 if one is currently married in 2000. The variable measuring the number of children ever born is a continuous variable, again measured in the year 2000.

Two dummy variables—no education and primary education—measure educational attainment. The reference category is secondary or higher education. Measured in terms of years of schooling completed, the black population of South Africa (and this sample) is actually relatively well-educated compared to many other developing country populations. Again, because this variable measures only completed education in the year 2000, it is a proxy for human capital attainment and not a true predictor. To test the utility of the education variables as proxies, I ran the basic event history migration models (any move, intra-provincial versus inter-provincial moves, and rural-urban moves) on a sub-sample of those who were age 25 and older in the year 2000. These are adults I expect would have completed their education by that age. The results were very similar to the results with the full sample, so it is likely that the education variables are decent proxies for prior human capital attainment.

Urban residence in the previous year is included in any model which does not predict moves between rural and urban areas (any move, inter-provincial and intra-provincial moves, and forced migration, resettlement, family moves, solo moves, and "network" moves). Lagged urban residence is a dummy variable coded 0 for rural residence in the prior year, 1 for urban residence in the prior year. Persons in the sample can contribute observations (person-years) across different risk sets as they

change provinces, urban and rural residences, etc. The sum of total moves in the previous year is also included in all of the migration models to explore whether those who previously moved are more likely to move again.

Several additional covariates were tested but are not presented. First, a series of language variables, indicating the native language of the individual (essentially a proxy for ethnicity, which was not collected in the survey) were originally included. Most of them were highly significant, but they were also highly collinear with the provincial dummy variables described above, so they were ultimately omitted from the models. Those who speak IsiXhosa, for example, are very likely to live in the Cape provinces, and those who speak IsiZulu are likely to live in KwaZulu-Natal province. Therefore, I determined that the language variables were essentially capturing a geographic effect that could be more precisely measured by the province dummy variables.

Some interaction terms were also included to explore whether the effects of certain independent variables changed over the four historical time periods. Educational attainment was interacted with the four time period dummies. No significant effects were found in any models, so the interaction terms were dropped from the final analyses.

CHARACTERISTICS OF THE SAMPLE: LIFETIME MIGRANTS VS. NON-MIGRANTS

Before moving into the descriptive analyses of migration, it is helpful to have a picture of the sample of individuals who answered the survey questions, and it is particularly useful to compare those who ever moved during their lifetimes to those who never moved from their birthplace. Table 1 shows descriptive characteristics of the

sample of individuals from the SAMHS survey, for both migrants (persons who have *ever* moved from their birthplace) and non-migrants (persons who have *never* moved from their birthplace). Note that these values are weighted and that numbers in the table are rounded to the first digit (N) and the first decimal place (percentages and means).

It is immediately clear that migration is a common experience among black South Africans. The majority of the total sample of 2,331 individuals—1,413 people or 63 percent—have moved at least once during their lives. There are more women (1,235) than men in the overall sample (998), but men are only slightly more likely to have moved than women (about 66 percent versus 61 percent, respectively). This suggests that perhaps men's and women's migration frequencies in South Africa are not as different as the literature might predict; potential sex differences in migration patterns are explored further later. The mean age of migrants (37 years) is only about three years older than non-migrants (34 years). Age will be a key control variable in later analyses, because the age pattern of migration is usually quite prominent in many settings. Note that only about one percent of the sample was born outside of South Africa (all of these persons are migrants, of course); because of the very small number of foreign-born persons, further analyses of international migration are outside of the scope of this study. It is possible that there was some under-reporting of foreign birthplaces or some under-sampling of this population, because it was not a focus of the SAMHS survey.

In terms of geography, more persons were born in rural areas (56 percent) than urban areas (44 percent), and rural-born persons were more likely to have moved during their lifetimes than urban-born persons (77 percent versus 46 percent, respectively). Although this seems somewhat counter-intuitive, because much of the literature about

migration suggests that urban residents are more likely to move than rural residents (Montgomery et al. 2003; Reed, Andrzejewski and White 2008; White and Lindstrom 2005), the particular situation in South Africa negates some of this urban mobility, particularly during the apartheid era. Many black South Africans were forced to live in rural "homelands" and therefore, rural to urban migration increased greatly as the apartheid system crumbled. Although fairly high percentages of those living in every province have moved at least once in their lives (at least 49 percent), residents of Western Cape, Gauteng, KwaZulu-Natal, Eastern Cape, and northern provinces have particularly high levels of mobility (at least 70 percent of current residents are lifetime migrants in each of these provinces). These provinces contain the largest metropolitan areas in South Africa and have strong links to industrial, mining, and transportation hubs (Cape Town—Western Cape; Johannesburg—Gauteng; Durban—KwaZulu-Natal; Port Elizabeth—Eastern Cape; Polokwane (Pietersburg)—northern).

Looking more closely at household demographics in the sample, Table 1 also shows that people who are currently married or living with a partner are the most likely to have moved, followed by those who are separated, divorced, or widowed, but this is likely to be an age effect, and will be explored in the multivariate models. Age may also be the explanation for why people with more children are more likely to have moved than those with only one or no child. Note that those with two children are the most likely to have moved, which may indicate that mobility declines with the birth of additional children after the second child.

In terms of human capital, over 64 percent of literate persons are migrants, and the majority of people in each category of educational attainment are movers, although

those with higher degrees are less likely to have moved than those with other levels of schooling. This is a first indication that education may not significantly affect mobility in South Africa (or may not affect it in the anticipated way); this will be analyzed further in the multivariate models. Work plays an important role in migration as well, since at least 70 percent of those employed in either the formal or informal sector have moved during their lifetimes, compared to less than 60 percent of those who are unpaid family workers, homemakers, retired, or disabled. Current students are very unlikely to have moved, probably because they are still quite young. Those who are currently unemployed are almost as likely to have moved as those who are employed, probably because they are looking for work. Some of these relationships will be tested further in the multivariate models.

Two other types of moves of interest in this paper are moves with one's immediate family (spouse or children) and solo moves (moving by oneself). The rates for these two types of moves, both overall and for men and women separately, are shown over the four key time periods in Figures 1 and 2, respectively. Figure 1, which shows rates for family moves, indicates that family migration increased over the four periods, from a rate of less than 5 before 1976 to almost 25 by the post-election period. This is what I expected, because moving with one's family was difficult and generally illegal for blacks under apartheid. Yet there is a wide divergence between the family migration rates for men and women. Women have a higher family migration rate than men do in every period except for a brief anomaly during the post-Pass Laws era. And women move with family at a rate almost three times that of men in the post-election period (30 compared to 10). The increase in family migration for men came after the Pass Laws

were repealed in 1986, but after 1994, their rate declined slightly.

The solo migration rates (shown in Figure 2), on the other hand, show almost the opposite trend. While the overall solo migration rate also increased steadily over the four time periods, from less than 5 to about 25 by the post-election era, rates for men and women again diverge. The rate of men moving alone increases sharply (fivefold) after the Pass Laws are repealed in 1986, and reaches a high of almost 45 after 1994. Meanwhile, women's solo migration rate increases only very slightly after 1986 and levels off thereafter at less than 15. This suggests that the ending of apartheid, starting with the repealing of the Pass Laws in 1986, opened up a floodgate of men's labor migration that had previously been stifled. Note, however, that this could also be due to labor market shifts, as mining recruitment began to decline in the 1980s, so more men were going in search of employment elsewhere, particularly to urban areas. There is little evidence here, however, of women moving alone at high rates, and it seems that women who did move primarily moved with their families. This suggests that women were not entering the labor market in large numbers, which is what one might expect to see if it were economic changes driving these migratory shifts.

MULTIVARIATE EVENT HISTORY RESULTS

Now I turn to the results from the multivariate discrete-time logit event history models. Note that, as discussed earlier, the models were run with a pooled sample of men and women and interaction terms between sex and time period and sex and education were tested, but no significant effects were found for any interaction terms in any of the models. This suggests that there are not significant differences between

men's and women's migration probabilities over time or by educational level. In this section, however, I aim to compare the different determinants of migration for men and women separately. Gender comparisons across the split-sample models, however, are not significant.

Any Residential Move

I begin with the model predicting any residential move, shown in Table 2. First, it is clear that some of the key determinants of migration, including urban residence, total number of moves, and the historical period variables, have similar effects for both men and women. Urban residence and prior moves are both positively and highly significantly related to mobility for both sexes ($p<0.001$ for all covariates). The effect of urban residence for women ($\beta= 0.64$) is a little stronger than it is for men ($\beta= 0.43$). The probability of migrating significantly increases for both men and women across the three time periods, compared to before 1976. For men the log odds increase from 0.7 in the post-Soweto period to 1.73 in the post-election period; for women the increases are slightly smaller, but they are still strong effects: from 0.82 in the post-Soweto period to 1.33 in the post-election period.

What is different about the determinants of migration for men and women? First, while the curvilinear age effect that was present in the full sample models is still present for both sexes, it is only significant for women (at $p<0.05$). Although marriage does not significantly affect the probability of moving for either sex, the number of children ever born has a significant negative impact on the probability that women moved ($\beta= -0.05$, $p<0.05$). This variable was not recorded for men in the survey, so its impact in other

models is only for women as well. In terms of education, less educated men are slightly more likely to migrate than those with secondary education (although this effect is not significant). Meanwhile, less educated women are less likely to migrate than more educated women (the effect is only significant for no education, $p<0.05$). This may reflect different labor market opportunities for men and women, as men with lower levels of education were likely to find employment in the mining sector in previous decades.

The results for the provincial variables also differ by sex. Although residents of either sex living in Cape provinces, KwaZulu-Natal and Gauteng or Free State are more likely to move compared to their counterparts in the north, these effects are much stronger and only significant for women, all at the $p<0.01$ level. Women living in the Cape, KwaZulu-Natal and Gauteng or Free State all have over 0.3 higher log odds of moving than those in the north do. Thus, women in these more urbanized and industrialized areas are much more mobile than their more rural and isolated counterparts in the north, even controlling for education and urban residence. This may reflect different labor market opportunities, cultural differences, or something else entirely. Further exploration of these provincial differences is needed to fully understand them, but such a detailed analysis is beyond the scope of my paper.

Intra- vs. Inter-Provincial Moves

Table 3 shows the results for multinomial logit models for men and women predicting the probability of a move within a province versus a move across provincial borders, compared with no move in a given year. The first two columns give the coefficients and robust standard errors for intra-provincial moves, for men and women

respectively, and the second two columns give the results for inter-provincial moves, for men and women respectively. Looking first at intra-provincial moves, the curvilinear age pattern of migration is present for both men and women (age is positive, age squared is negative), but the coefficients are only significant for women. Likewise, married persons are less likely to move within provinces, but this is only significant for women. Having children does not significantly affect the probability of women moving intra-provincially.

In terms of human capital, both men and women with no education are significantly less likely to move within provinces than those with secondary education (β= -1.30 for men, $p<0.01$; β= -0.62 for women, $p<0.05$). Although the effects for primary education are also negative, they are not significant for either sex. Thus, only those with no education are held back from moving "locally", or within a province. Urban women are significantly more likely to move than their rural counterparts (β= 0.29, $p<0.05$). Both men and women who have moved before are significantly likely to move again.

In terms of period effects on moves within provinces, there are no significant effects for men. However, all three period variables are positive for women, although only the last two are significant. Women had a 0.79 higher log odds of moving during the post-Pass Laws era ($p<0.001$) and a 0.63 higher log odds of moving after 1994 ($p<0.05$), compared to before1976. Clearly, women's mobility within provinces increased during the last two historical periods. Provincial effects are quite similar when one compares the two sexes: the only significant effect is a positive one for residents of the Cape provinces. Both men and women living in the Cape region are significantly

more likely to move within their province compared to those in the north. This may be because the Cape region is a bit isolated from migration streams in the rest of the country and much of the mobility in that region stays within the Cape.

Moving now to the second set of columns in Table 3, which show the results for inter-provincial moves, one finds more similarity between the results for men and women. There are few demographic and human capital variables that significantly affect inter-provincial (presumably longer distance) migration. Having children does have a significantly negative impact on the probability of women moving across provincial borders (β= -0.07, $p<0.05$). However, urban residents and previous movers of either sex are significantly more likely to move across provincial borders (at $p<0.001$). Both men and women who have previously moved have about 1.4 higher odds of moving again for each subsequent move. Urban men have 1.6 higher odds of moving across provinces than rural men and urban women have over 2.0 higher odds of moving inter-provincially than rural women do.

The historical period effects are highly significant (all at $p<0.001$) and positive for both male and female inter-provincial moves. Men in the post-Soweto period had a 1.22 higher log odds of moving between provinces than men in the pre-1976 period did and those log odds rose to over 2.3 by the post-election period. Women had a 1.05 higher log odds of moving inter-provincially in the post-Soweto period compared to before 1976, and those log odds rose to 1.59 by the post-election period. Thus, the probability of moving across provinces increased substantially for both sexes. Combined with the results for intra-provincial moves, this indicates that while men continued to move within provinces at more or less the same rate, their likelihood of moving between provinces,

which is a proxy for longer distance moves, increased dramatically. Meanwhile, women's mobility——both local and longer distance—increased significantly over the time span.

Finally, there are few significant results for the province dummy variables in terms of inter-provincial moves. Women from KwaZulu-Natal, however, have a 0.3 higher log odds of moving between provinces than those from the north ($p<0.05$). Also, women from Gauteng or Free State have 0.45 higher log odds of moving between provinces than those from the north ($p<0.001$). Province of origin does not significantly affect men's inter-provincial movement.

Rural-Urban Moves

To further examine some of the possible gender differentials in mobility patterns and determinants, I also estimated discrete-time multinomial logit models separately for male and female rural-origin populations and urban-origin populations. Table 4 displays the results for the logit models predicting moves between rural areas, or from rural to urban areas, compared with no move in a given year, for men and women. The first two columns in the table give the coefficients and robust standard errors for rural-rural moves for men and women, respectively, and the second two columns for rural-urban moves for men and women, respectively, compared to not moving in a given year.

Few demographic or human capital characteristics have a significant effect on the probability of moving between rural areas. For women I do find that being married and having no education in the year 2000 significantly reduce the probability of moving from a rural area to another rural area. However, as in many of the other models, having

previously moved has a significant and highly positive impact on the probability of both men and women moving between rural areas. Thus, even though rural dwellers are often a less mobile population (and we have seen that urban residence has a positive and significant effect on mobility in other models), those who do move in rural areas are more likely to move again. In some instances, this result may be due to circular migration between employment on farms or in mines and visits to one's rural home, particularly for men.

In terms of increasing mobility over the time period, again these results indicate a significantly increasing probability of moving between rural areas for both men and women over time (all coefficients are significant at least at $p<0.01$ except for men in the post-Soweto period). Men have over three times higher odds of moving between rural areas in both the era after the Pass Laws were repealed and in the post-election era than they did before 1976. Women''s odds of a rural-rural move, compared with the period before 1976, increase from 4.2 in the post-Soweto era to almost 5 in the post-Pass Law era, then decrease slightly in the post-election era to 3.7. This result may reflect changing labor market opportunities for women in the 1990s, with more opportunities in urban areas for domestic and office work and fewer opportunities in rural areas.

Provincial effects are strongly negative for the most part, with men from the Cape provinces, KwaZulu-Natal and Gauteng/Free State provinces all significantly less likely to move between rural areas than men in the north ($\beta= -0.51$, $p<0.01$; $\beta= -0.57$, $p<0.01$; and $\beta?= -1.52$, $p<0.001$, respectively). This makes sense as the migration streams in the southern part of South Africa are much more driven by movement toward the urban poles of Cape Town, Durban, Port Elizabeth and Johannesburg/Pretoria. In the northern areas,

on the other hand, there is seasonal agricultural labor migration and other rural migration flows. For women the only significant effect is that those living in the fairly urbanized provinces of Gauteng and Free State have -1.22 lower log odds of migrating between rural areas (significant at $p<0.01$).

Turning to the second set of columns in Table 4, which show the results for rural-urban moves, one sees that again, there are few significant effects for the demographic and human capital variables. Married men are significantly less likely to move from rural to urban areas, while women with children are also significantly less likely to move from rural to urban areas. The effect of the total number of moves on rural-urban mobility is, somewhat surprisingly, weaker, although still positive, but only significant for women ($\beta= 0.11$, $p<0.05$). Yet in terms of rural-urban migration, there are strong positive and highly significant time period effects which are consistent for both men and women. The log odds of a rural-urban move for men increased from 1.08 ($p<0.01$) in the post-Soweto era to over 2.0 in the post-election era ($p<0.001$), compared to before 1976. Meanwhile, women have slightly weaker, but still very positive and significant effects; women's log odds of moving from a rural area to an urban area increased from 1.11 ($p<0.001$) in the post-Soweto era to 1.68 in the post-election era ($p<0.001$), compared with before 1976.

Finally, one again sees the pull effect of the urban destinations in the southern provinces in the results for the provincial dummy variables. Men living in rural areas of the Cape provinces and in KwaZulu-Natal have a highly significant ($p<0.001$) and strongly positive higher log odds of moving to urban areas, compared with those living in the north. The probability of rural women living in the Cape, KwaZulu-Natal and

Gauteng or Free State moving to urban areas is highly positive and significant compared with those living in the north.

Table 5 displays the results from discrete-time multinomial logit models for the urban-origin male and female populations at time t-1. The first two columns show the results for urban-rural moves, for men and women, and then the second two columns give the results for urban-urban moves, for men and women, compared with not moving in a given year. Some key results for urban-rural mobility are that men with no education or only primary schooling are significantly more likely to move from an urban area to a rural area compared with those who have secondary or higher schooling. Less educated men will fare worse in terms of employment in an urban area than those with higher educational attainment, especially in a relatively well educated population like South Africa's. Previous movers—both men and women—living in urban areas are again highly significantly likely to move to rural areas; again this may indicate some circular migration between these areas, but also possibly some more permanent returns to rural homes. Previous mobility has an impact on almost all types of migration, for both men and women.

Again, one can see that there are highly significant and strongly positive effects for the historical period dummy variables for both men and women. These effects are strongest for men; their odds of moving from an urban area to a rural area compared with the pre-1976 era increase from almost 5 times greater between 1976 and 1985 to over 14 times greater after 1994 ($p<0.001$ for all coefficients). The effect for women is also significantly positive, although not as strong. Women are about twice as likely to make an urban-rural move in the post-Soweto era and about 4 times as likely to make the same

type of move after the election in 1994, compared to before 1976. Some of this mobility, particularly during the post-Soweto era, may reflect forced removals from urban settlements; I examine this further later. However, it is clear that both men and women became more likely to make urban-rural moves over the time period, and forced migration cannot account for all of this change. Thus, many people may be returning to their rural homes.

In terms of provincial differences, we see negative effects for both men and women living in the Cape provinces and in KwaZulu-Natal on the probability of moving from an urban to a rural area (effects are significant for women in the Cape and for both men and women in KwaZulu-Natal). Most mobility in these regions would be towards the urban centers of Cape Town, Port Elizabeth and Durban, so these results make intuitive sense.

The second two columns in Table 5 give the results for urban-urban moves for both men and women. There are no significant results for the basic demographic or human capital variables, although there are still highly significant and positive results for previous mobility for both sexes. Again, one also finds the significant and strongly positive effects for increased mobility between urban areas over time for both sexes. Men's log odds of urban-urban moves increase from 1.43 ($p<0.05$) in the post-Soweto era to 2.60 ($p<0.001$) in the post-election era, compared with before 1976, while women's log odds of urban-urban moves increase from 0.82 ($p<0.05$) in the post-Soweto era to 1.79 ($p<0.001$) in the post-election era. Legal urban to urban moves during the apartheid era would be highly unlikely for most blacks unless they were relocated between townships or moved from a job in one mining or industrial area to another. Thus, this

evidence provides further support for the suggestion that free mobility among blacks began to increase well before apartheid officially ended or before democracy began in South Africa.

As expected, we also see significantly and strongly positive results for the provincial variables, indicating that both men and women living in the Cape provinces, KwaZulu-Natal, and Gauteng or Free State, are much more likely to move between urban areas than those living in the north. The literature on urbanization suggests that as countries become more urban, urban-urban migration often increases (Montgomery et al. 2003), so it is likely that much of the urbanization found in the southern part of the South Africa leads to continuing urbanward mobility. This may often entail moves from smaller cities to larger urban centers; in the case of South Africa, for example, from places like Pietermaritzburg or East Rand to Durban or Johannesburg.

Figures 3 and 4 use the mean and modal values for the covariates in the rural-origin and urban-origin models to simulate the change in the proportion of women (Figure 3) and men (Figure 4) moving between different types of destinations over time. Both men and women see chronological increases in all four types of migration over the four historical time periods. Urbanward migration (both rural-urban and urban-urban moves) also increase dramatically in each time period for both men and women. Urban-rural moves show a much smaller increase over time for both sexes, but rural-rural flows increase for men (but not women) during the middle two time periods, but then decrease again after the 1994 election.

Summary

Gender differences in overall migration patterns are less pronounced than one might expect; migration for men and women appears to be driven by similar factors, including urban residence, previous number of moves, and the historical period. Women are, however, not surprisingly, less likely to have moved if they currently are married or have children. (Recall that the marriage and children variables are both proxies for prior behavior and thus their utility is limited.) Both men and women increased their probability of migrating over each historical time period. Family moves and solo moves also showed a clear temporal change. While the probability of moving alone declined over time, the probability of moving with one's immediate family increased over time. As apartheid's strictures on mobility of families decreased, black South Africans have become more likely to move with their families. Again, there were gender differences in these types of movement, where women were less likely to move alone, but more likely to move with their families, compared to men. I found little evidence, however, of the increasing migration flows of single women moving alone that was cited in other literature (Posel and Casale 2003).

There are some significant gender differences among types of moves, however. For example, men continued to move intra-provincially at roughly the same rate across all four historical time periods, but their probability of moving across provincial borders approximately doubled between the post-Soweto period and the post-election period. Women's mobility, on the other hand, both intra- and inter-provincially, increased significantly over the time span of the study. This supports the hypothesis that women became more likely to move over time. The probability of both rural-rural moves and rural-urban moves increased over time for men and women, although this leveled off

slightly for women in the post-election period. Urban-rural moves and urban-urban moves also increased for both sexes over each of the time periods.

CONCLUSION

In terms of gender differences and similarities, many of the same factors seemed to be driving men's and women's migration patterns. Simulations showed that educational attainment was less of a factor behind migration patterns than one might expect. Instead, while women had lower odds of migrating at any time compared to men (and while less educated women and men had lower odds of moving at any time compared to those with secondary or higher educational levels), all groups increased their odds of moving in each subsequent historical time period.

Results from multinomial logit models predicting the probability of migration between different types of locations for men and women do suggest some gender differences. Men continued to move intra-provincially at roughly the same rate across all four time periods, but their probability of moving across provincial borders increased dramatically. Women's mobility, on the other hand, both intra- and inter-provincially, increased significantly over the time span of the data set. The probability of both rural-rural moves and rural-urban moves increased over time for men and women, although it leveled off slightly for women in the post-election period. Urban-rural moves and urban-urban moves also increased for both sexes over each of the time periods, confirming results discussed earlier in this section.

A major contribution of my paper is that it furthers our empirical understanding of historical patterns of gendered migration in South Africa. Its unique contribution is the

ability to examine historical migration patterns from the apartheid era to the turn of the 21st century for a nationally representative sample of black South Africans. In this way I enhance knowledge gained from previous studies. Small area studies, demographic surveillance data, or sample surveys have small, geographically constrained samples, which are useful for capturing certain migration patterns (especially circular migration) among subpopulations in particular areas, but they miss the national and inter-provincial dynamics that this study can capture. Most small-area or sub-population studies also lack a historical political economic perspective, which is a strength of my research. Another type of study uses census data to capture broad national and inter-provincial migration patterns and how they have changed at regular intervals (e.g., every 10 years), but this type of study cannot use an event history approach to understand the timing and sequencing of migration in detail. Studies using census data to analyze migration also have a limited set of covariates and predictive factors to use in statistical analysis. While my study, like all studies, has its own limitations, it does have the distinct advantages of a nationally representative sample, retrospective life histories of migration, and the ability to include a large number of individual-level factors in the analyses while still maintaining a broad historical political perspective.

The results of my paper suggest a more complex and nuanced story of historical migration change in South Africa than most researchers have previously articulated. Many researchers seem to assume that the ending of apartheid led to increasing migration, particularly in the 1990s, but that circulatory and temporary migration patterns remained the norm for most migrants. Yet, my research has indicated that voluntary migration was increasing throughout the period after the Soweto uprising, even as the

government was cracking down on black resistance in the early 1980s. This migratory increase was already occurring, and only gained more momentum after the Pass Laws were repealed in 1986 and after the 1994 election. Moreover, nuclear families were more likely to move together, even beginning in the immediate post-Soweto period when such migration was illegal and dangerous. The probability of moving by oneself has likewise declined over each of the three time periods after 1976. These findings point to the persistence of migratory agency in the face of the apartheid regime, yet there is also some evidence in the effects on social networks and the ability to remit that the legacy of apartheid remains difficult for black migrants to surmount. Future research should examine whether and how families in South Africa are adopting different types of migration as economic strategies and whether or not these strategies are working.

The results also suggest that, contrary to the assertions of some scholars, divergent migration patterns for men and women found in other contexts may not be as prevalent in South Africa. Education also seems to be less important as a determinant of migration in this case. Provincial and regional dynamics are clearly important driving forces of internal migration in South Africa. South Africa's rapid urbanization is, as in many other contexts, an important driver of migration, too. All of these findings point to the need for further detailed studies on the part of migration researchers, and particularly a need to focus on gender, provincial and regional dynamics, urban-rural dynamics, and forced migration.

How can one reconcile findings of rising single female migration in many parts of the world with the findings from this paper? In South Africa, increases in female migration seem to come from women moving with their families, instead of moving

alone. However, it is true that the SAMHS data only cover six years of the post-Apartheid era, so they may not capture some of the most recent social and economic changes for South African women. This suggests areas for further comparison and exploration between different cases. South Africa, of course, is at a different developmental and historical stage than Mexico, Thailand, or some of the other major contexts where we know much about migration patterns, but further comparison and investigation could be helpful.

In recent years, there has been a recognition by many researchers that gender influences not only mobility, but also migrants' work, wages, family roles, and transnational activities (Bradatan and Sandu 2012; Contreras and Griffith 2012; Pajnik and Bajt 2012; Vullnetari 2012; Foner 2009; Foroutan 2009). Most of these studies remain in the qualitative sphere, however, and focus on international migration. There are a number of recent quantitative studies examining the relationship between internal migration and demographic and socioeconomic behavior and outcomes which do indicate the importance of understanding how mobility and various socio-demographic processes (e.g., fertility, health, schooling, marriage) affect one another (Agadjanian et al. 2011; Anglewicz 2012; Chattopadhyay et al. 2006; Clark and Cotton 2013; Hertrich and Lesclingand 2012; Lu and Treiman 2011; McEvoy et al. 2012; Nedoluzhko and Agadjanian 2010; Sevoyan and Agadjanian 2010; Strozza 2012; White et al. 2008; Yabiku et al. 2010; Yang and Xia 2008). These studies generally do attempt to do more than "add women and stir," as Curran et al. (2006) argued that previous literature had often done, but there is still much that is unknown about gender, migration and demographic change, particularly in sub-Saharan Africa. Future research should attempt

to learn more about how migration patterns and processes are gendered, but also how they relate to broader societal transformations.

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Table 1 Descriptive characteristics of the South Africa Migration and Health Survey, 2000 (All adults ages 18+ in the year 2000)

Characteristic	Migrants (ever moved)		Non-migrants (never moved)	
	N	Percentage or Mean	N	Percentage or Mean
Total	1,413	63.3	820	36.7
Sex				
Male	656	65.8	342	34.2
Female	757	61.3	478	38.7
Age	1,413	37.4	820	33.5
Foreign-born	18	1.3	N/A	N/A
Urban/rural birthplace				
Urban	453	46.0	531	54.0
Rural	960	76.9	288	23.1
Province of current residence				
Western Cape	14	84.0	3	16.0
Eastern Cape	300	69.9	129	30.1
KwaZulu-Natal	281	70.8	116	29.2
Mpumalanga	148	58.3	106	41.7
Northern	183	70.0	77	30.0
North West	62	59.0	43	41.0
Gauteng	119	81.4	27	18.6
Free State	306	49.0	318	51.0
Relationship to household head				
Head	828	71.6	329	28.4
Spouse/partner	261	69.5	115	30.5
Son/daughter	178	40.7	259	59.3
Brother/sister	51	62.8	30	37.2
Other relative or non-relative	95	52.5	86	47.5

Marital status				
Never married	585	55.5	469	44.5
Married or living with partner	629	71.3	253	28.7
Separated, divorced or widowed	200	67.2	98	32.8
Children ever born (only for women)				
None	99	46.2	115	53.8
One	128	50.0	130	50.0
Two	170	77.2	50	22.8
Three	126	67.5	61	32.5
Four	74	63.7	42	36.3
Five or more	109	67.8	52	32.2
Literate	1,248	64.1	700	35.9
Educational attainment				
No schooling	180	65.2	96	34.8
Primary school	413	60.8	266	39.2
Attended secondary school	725	63.1	424	36.9
Secondary school diploma	86	77.2	26	22.8
Higher degree	10	54.6	8	45.4
Labor force status				
Unemployed	511	69.3	227	30.7
Employed in informal sector	259	73.8	92	26.2
Employed in formal sector	325	70.0	140	30.0
Unpaid family worker, homemaker, retired, disabled	211	58.8	147	41.2
Student	107	33.4	214	66.6

Source: South Africa Migration and Health Survey, 2000.

Note: Values are weighted.

Table 2 Discrete-time binomial logit model of any residential move (compared to no move in a given year) for men and women

	Men			Women		
Covariate	**Coefficient**		**Robust Standard Error**	**Coefficient**		**Robust Standard Error**
Age[a]	-0.0293		0.0150	-0.0265	*	0.0128
Age squared[a]	0.0002		0.0002	0.0003	*	0.0002
Married[b]	-0.0479		0.0725	-0.1256		0.0698
Children ever born[b]	N/A			-0.0517	*	0.0229
No education[b]	0.0097		0.1312	-0.2933	*	0.1171
Primary education[b]	0.0598		0.0807	-0.0229		0.0852
Secondary+ education[b] (ref.)	0.0000		0.0000	0.0000		0.0000
Urban residence[a]	0.4276	***	0.0641	0.6390	***	0.0571
Total number of moves[a]	0.3545	***	0.0251	0.3165	***	0.0201
Pre-1976[a] (ref.)	0.0000		0.0000	0.0000		0.0000
Post-Soweto (1976-85)[a]	0.6953	***	0.1917	0.8231	***	0.1546
Post-Pass Laws (1986-93)[a]	1.5765	***	0.1830	1.2237	***	0.1563
Post-Election (1994-2000)[a]	1.7345	***	0.1867	1.3336	***	0.1607
Northern, Eastern, or Western Cape[a]	0.1921		0.1093	0.3599	**	0.1100
KwaZulu-Natal[a]	0.0470		0.1138	0.3087	**	0.1139
Gauteng or Free State[a]	0.1557		0.1247	0.3985	**	0.1298
Other provinces[a][c] (ref.)	0.0000		0.0000	0.0000		0.0000
Constant	-4.0744	***	0.2896	-4.0822	***	0.2575
Person-years (N)	25,575			31,108		
Wald chi-square	425.92 (13)			670.43 (14)		
Pseudo R-squared	0.0932			0.0949		
Log pseudolikelihood	-4,826.22			-5,457.09		

(a) Lagged by one year; [b] Current status, measured in 2000; [c] Reference category includes: Northern (Limpopo), Mpumalanga, North West, provinces and countries other than South Africa.

*p<0.05; **p<0.01; ***p<0.001

Table 3 Discrete-time multinomial logit model of intra-provincial or inter-provincial moves (compared to no move in a given year) for men and women

	Intra-Provincial Move				Inter-Provincial Move			
	Men		Women		Men		Women	
Covariate	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE	Coefficient	Robust SE
Age[a]	-0.0322	0.0281	-0.0413 *	0.0207	-0.0260	0.0165	-0.0224	0.0145
Age squared[a]	0.0003	0.0004	0.0006 *	0.0003	0.0002	0.0002	0.0003	0.0002
Married[b]	-0.2174	0.1791	-0.4305 **	0.1562	-0.0179	0.0850	-0.0452	0.0805
Children ever born[b]	N/A		-0.0017	0.0481	N/A		-0.0655 *	0.0266
No education[b]	-1.3066 **	0.4172	-0.6179 *	0.2533	0.2180	0.1420	-0.2040	0.1336
Primary education[b]	-0.0791	0.2023	-0.2055	0.1839	0.0901	0.0968	0.0295	0.1005
Secondary+ educ[b] (ref.)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Urban residence[a]	-0.0404	0.1623	0.2999 *	0.1279	0.5133 ***	0.0716	0.7243 ***	0.0639
Total number of moves[a]	0.1898 **	0.0625	0.1591 **	0.0505	0.3766 ***	0.0266	0.3479 ***	0.0225
Pre-1976[a] (ref.)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Post-Soweto (1976-85)[a]	-0.3725	0.2435	0.2115	0.2276	1.2169 ***	0.2911	1.0485 ***	0.1977
Post-Pass Laws (1986-93)[a]	0.2313	0.2160	0.7933 ***	0.2265	2.1565 ***	0.2877	1.4107 ***	0.1983
Post-Election (1994-2000)[a]	0.2253	0.2419	0.6323 *	0.2657	2.3410 ***	0.2907	1.5851 ***	0.1992
N., E., or W. Cape[a]	0.8677 ***	0.2176	1.4054 ***	0.2078	0.0374	0.1142	0.0260	0.1151
KwaZulu-Natal[a]	0.1098	0.2249	0.2901	0.2523	0.0367	0.1160	0.2953 *	0.1142
Gauteng or Free State[a]	-0.6094	0.3108	-0.4092	0.3693	0.2328	0.1247	0.4530 ***	0.1285
Other provinces[a][c] (ref.)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-4.2971 ***	0.5026	-5.0442 ***	0.5036	-4.9255 ***	0.3350	-4.5700 ***	0.2765
Person-years (N)	25,575		31,108		25,575		31,108	
Wald chi-square	509.01 (26)		911.33 (28)		509.01 (26)		911.33 (28)	
Pseudo R-squared	0.0972		0.0995		0.0972		0.0995	
Log pseudolikelihood	-5,336.88		-6,087.30		-5,336.88		-6,087.30	

Table 4 Discrete-time multinomial logit model of rural-rural and rural-urban moves (compared to no move in a given year) for men and women

	Rural-Rural Move						Rural-Urban Move					
	Men			Women			Men			Women		
Covariate	Coefficient		Robust SE	Coefficient		Robust SE	Coefficient		Robust SE	Coefficient		Robust SE
Age[a]	-0.0168		0.0353	0.0189		0.0318	-0.0097		0.0189	-0.0186		0.0163
Age squared[a]	-0.0004		0.0005	-0.0002		0.0004	0.0002		0.0003	0.0003		0.0002
Married[b]	-0.0320		0.1829	-0.5350	**	0.1970	-0.2410	*	0.1184	-0.1070		0.0998
Children ever born[b]		N/A		-0.0628		0.0624		N/A		-0.0616	*	0.0313
No education[b]	-0.3675		0.2863	-0.6457	*	0.2815	-0.1777		0.2074	-0.2822		0.1596
Primary education[b]	-0.0808		0.1845	-0.3773		0.2399	-0.0302		0.1165	-0.1453		0.1347
Secondary+ educ[b] (ref.)	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000
Total number of moves[a]	0.4032	***	0.0446	0.2763	***	0.0465	0.1129		0.0585	0.1080	*	0.0442
Pre-1976[a] (ref.)	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000
Post-Soweto (1976-85)[a]	0.1413		0.4261	1.4460	***	0.3549	1.0823	**	0.3520	1.1066	***	0.2270
Post-Pass Laws (1986-93)[a]	1.2014	**	0.4024	1.5800	***	0.4033	1.8909	***	0.3420	1.4583	***	0.2295
Post-Election (1994-2000)[a]	1.2488	**	0.4088	1.3059	**	0.4181	2.0058	***	0.3518	1.6788	***	0.2403
N., E., or W. Cape[a]	-0.5078	**	0.1946	-0.1310		0.2303	1.1196	***	0.2378	1.6211	***	0.2418
KwaZulu-Natal[a]	-0.5670	**	0.1816	0.0148		0.2019	0.9122	***	0.2360	1.5563	***	0.2470
Gauteng or Free State[a]	-1.5168	***	0.3685	-1.2184	**	0.4502	-0.3945		0.3399	0.6096	*	0.2989
Other provinces[a][c] (ref.)	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000
Constant	-4.0262	***	0.6733	-5.4031	***	0.6299	-5.7284	***	0.5144	-5.7714	***	0.4245
Person-years (N)	15,041			18,898			15,041			18,898		
Wald chi-square	275.56 (24)			453.63 (26)			275.56 (24)			453.63 (26)		
Pseudo R-squared	0.0795			0.0795			0.0795			0.0795		
Log pseudolikelihood	-2,959.50			-3,060.70			-2,959.50			-3,060.70		

Table 5 Discrete-time multinomial logit model of urban-rural and urban-urban moves (compared to no move in a given year) for men and women

	Urban-Rural Move						Urban-Urban Move					
	Men			Women			Men			Women		
Covariate	Coefficient		Robust SE	Coefficient		Robust SE	Coefficient		Robust SE	Coefficient		Robust SE
Age[a]	-0.0426		0.0236	-0.0444	*	0.0208	-0.0152		0.0291	-0.0268		0.0246
Age squared[a]	0.0003		0.0003	0.0004		0.0003	0.00002		0.0004	0.0003		0.0003
Married[b]	0.0349		0.1668	-0.0972		0.1508	0.2221		0.1539	0.0605		0.1329
Children ever born[b]		N/A		0.0339		0.0519		N/A		-0.0395		0.0432
No education[b]	0.6715	*	0.3326	-0.1119		0.2773	0.0708		0.2815	-0.0523		0.2392
Primary education[b]	0.6633	**	0.1936	0.0299		0.2080	-0.0981		0.1935	0.2959		0.1643
Secondary+ educ[b] (ref.)	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000
Total number of moves[a]	0.4900	***	0.0715	0.5317	***	0.0600	0.3800	***	0.0539	0.3406	***	0.0492
Pre-1976[a] (ref.)	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000
Post-Soweto (1976-85)[a]	1.5629	***	0.4432	0.6423	*	0.2612	1.4251	*	0.6569	0.8171	*	0.3559
Post-Pass Laws (1986-93)[a]	2.4373	***	0.4417	1.0755	***	0.2713	2.3306	***	0.6507	1.6164	***	0.3693
Post-Election (1994-2000)[a]	2.6413	***	0.4640	1.3024	***	0.2890	2.6022	***	0.6720	1.7932	***	0.3686
N., E., or W. Cape[a]	-0.4758		0.2619	-0.5740	**	0.2121	0.9039	**	0.2794	0.5628	**	0.2053
KwaZulu-Natal[a]	-0.4603	*	0.2204	-0.6348	**	0.2175	0.6709	*	0.2676	0.4785	*	0.2011
Gauteng or Free State[a]	0.3382		0.1989	0.2206		0.2003	0.9587	***	0.2635	0.5925	**	0.2185
Other provinces[a][c] (ref.)	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000
Constant	-4.9994	***	0.5205	-3.6241	***	0.4066	-6.0259	***	0.6120	-4.7058	***	0.5202
Person-years (N)	9,458			10,977			9,458			10,977		
Wald chi-square	253.61 (24)			218.21 (26)			253.61 (24)			218.21 (26)		
Pseudo R-squared	0.1141			0.0937			0.1141			0.0937		
Log pseudolikelihood	-2,528.50			-3,139.60			-2,528.50			-3,139.60		

Figure 1 Family migration rates, by sex

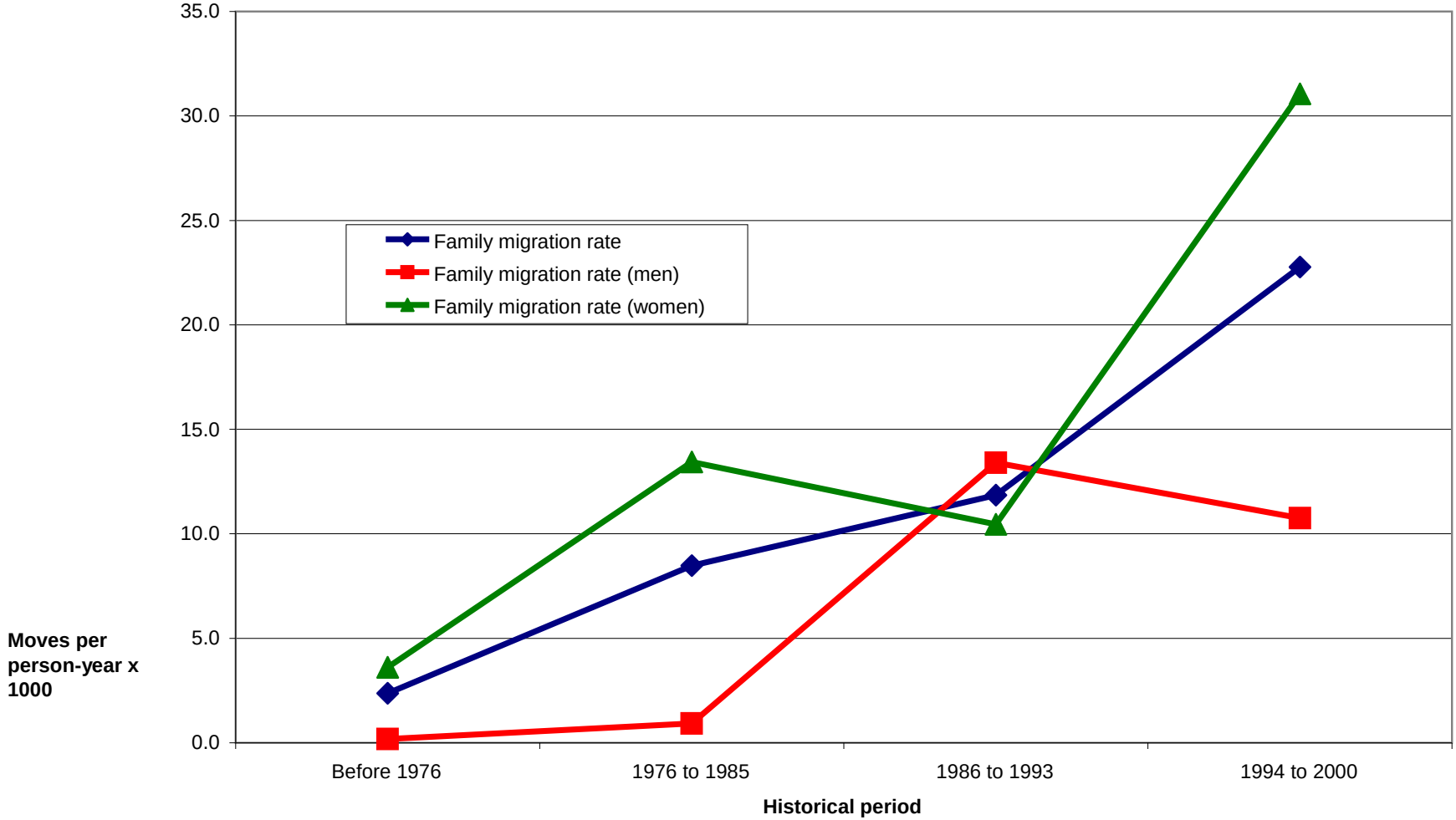

Figure 2 Alone migration rate, by sex

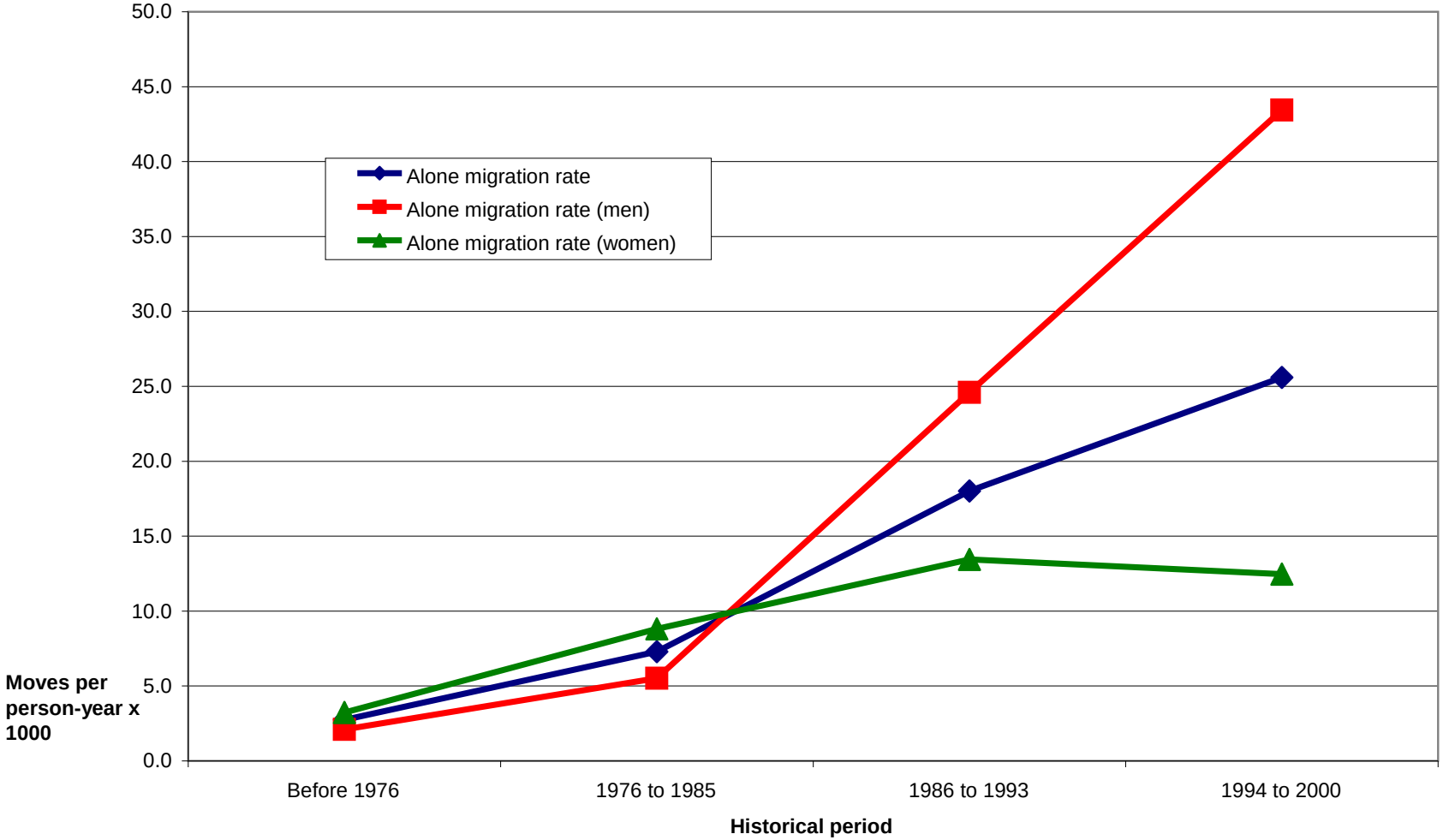

Figure 3 Female Rural-Urban Migration Over Time (Simulation)

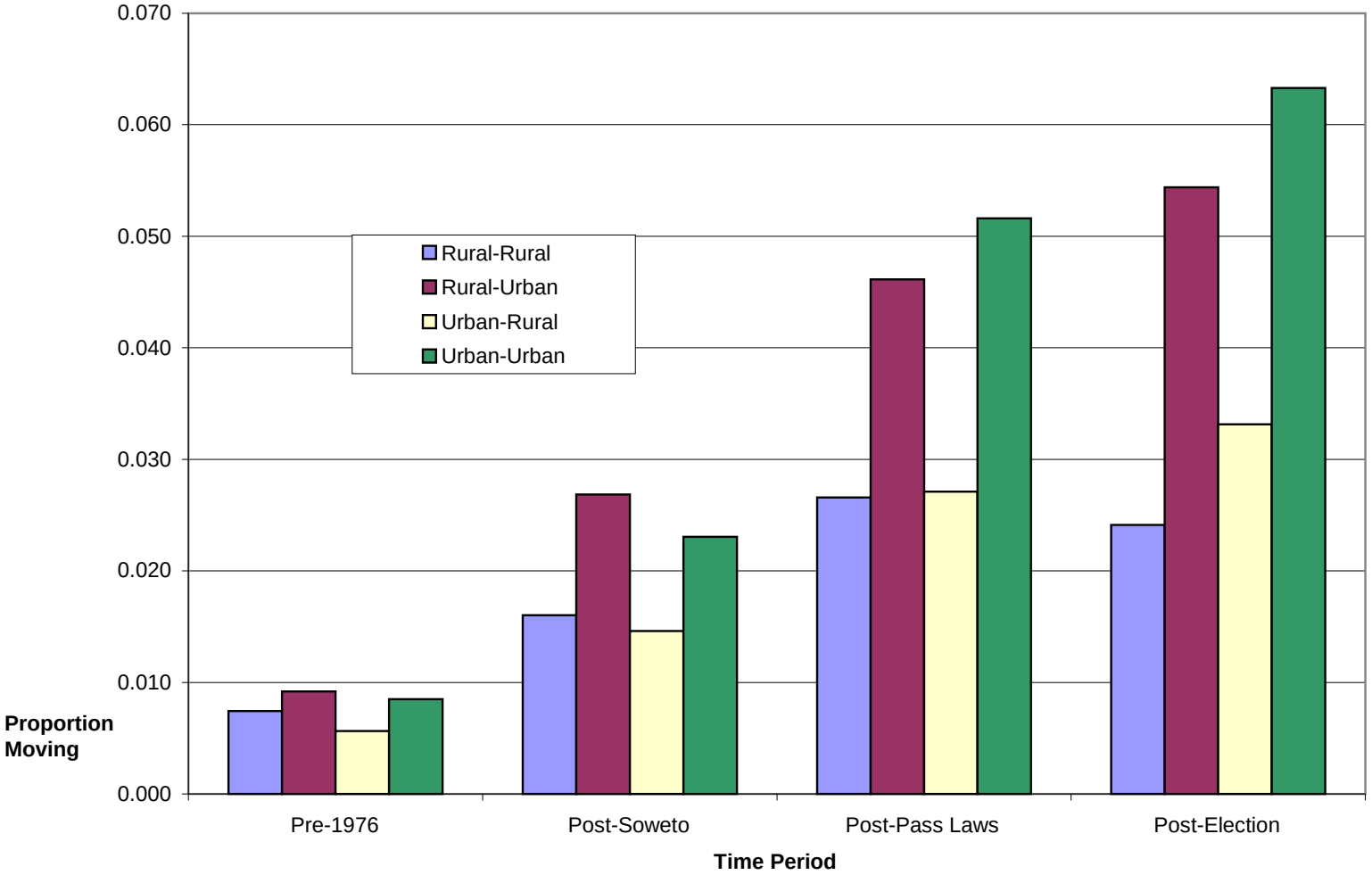

Figure 4 Male Rural-Urban Migration Over Time (Simulation)