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Migration, Remittances, and Educational Stratification among Blacks in Apartheid and Post-Apartheid South Africa

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Abstract

This paper extends previous work on family structure and children's education by conceptualizing migration as a distinct form of family disruption that reduces parental input but brings substantial economic benefits through remittances. It examines the multiple and countervailing effects of migration on schooling in the context of substantial migration and limited educational opportunities for Blacks in South Africa. The receipt of remittances substantially increases Black children's school attendance, but has no such effect for Whites. The effect for Blacks is in part attributable to improved household economic conditions that increase household educational spending and reduce the demand for child labor. We also find a negative effect of parental absence due to migration, but it is largely cushioned by inflows of remittances. Sensitivity analyses using propensity score methods and contextual fixed-effect modeling suggest that the beneficial effect of remittances is relatively robust. We find further that remittances help ameliorate inter-familial socioeconomic inequality in schooling. Finally, we evaluate possible temporal changes and show that the positive and equalizing effects of remittances persisted during and after the apartheid regime. We conclude that labor migration and remittances, as institutionalized family strategies adopted by many Blacks, help reconfigure structural opportunities in the educational stratification process in South Africa.

INTRODUCTION

Migration has become an integral feature of national economies and family life in many parts of the world. Over 170 million people in developing nations live outside their home country, sending back over 80 billion dollars in the early 2000's (United Nations 2002). Global remittances reached as much as 330 billion dollars in 2008 (Ratha 2009). Internal migration and remittances occur at even higher rates (International Organization for Migration 2005). As a consequence, an increasing number of children are affected by the migration process. While some move with their families, most are left behind because of the financial costs and uncertainty associated with migration. Having one or both parents away for work has thus become a common experience of childhood in many parts of the world. Conservative estimates suggest that 15% to 30% of children in Africa, Asia, and Latin America live in households with at least one migrant parent (Bryant 2005).

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An extensive literature regarding family structure and child well-being, especially in Western societies, provides conclusive evidence that children in single-parent households fare less well than their peers who live with both parents on almost all welfare measures (McLanahan and Sandefur 1994). In developed societies, marital dissolution is the primary source of parental absence; however, in the developing world, migration is often the primary source of parental absence. Like single-parenthood, migration contributes to the disruption of family life and undermines various forms of parental input. Nevertheless, migration often brings considerable economic improvement to the sending household through remittances, which can benefit children's development.

The most influential migration theory that links migration and people left behind is the New Economics of Labor Migration (Stark and Bloom 1985). This theory focuses on migration as a household strategy aimed at diversifying income sources and sees remittances as one of the most visible outcomes of labor migration. This has motivated research into the consequences of migration for people left behind. While some suggest that remittances are largely allocated for daily consumption, a crucial question is whether the impact of remittances extends to longer-term individual socioeconomic benefits, such as human capital enhancement.

As migration potentially confers both benefits and costs that can shape children's education, it is critical to assess the multifaceted impact of out-migration. As suggested by Stark (1991), migration research can be a productive way of studying the family that helps elucidate the mechanisms through which family dynamics influence children's development. A deeper question is whether remittances can have longer-term intergenerational effects by redistributing economic resources and thus opportunity structures for the next generation.

Several prior studies have provided valuable insights regarding the impact of out-migration on children's education (Curran et al. 2004; Kandel and Kao 2001; Taylor 1987). However, there has been very little work on the multiple countervailing effects of emigration and remittances. In addition, most work has focused on international migration although internal migration affects a larger fraction of children (IOM 2005).

This paper addresses these lacunae by investigating the linkage between migration and children's schooling in South Africa, a country with a clear socioeconomic hierarchy by race and long-standing internal migration as a survival strategy among the most underprivileged racial group, Blacks. Using a nationally representative sample from 1993, we first examine the multiple effects of labor migration and then conduct additional analyses to assess the potential bias generated by observed and unobserved heterogeneity. We also create a typology to separate the effect of remittances from that due to parental absence and evaluate possible explanations of the migration effect. We further assess the implications of remittances for educational inequalities based on socioeconomic status. While we find detrimental consequences of parental absence, more importantly we document the positive impact of remittances, which help buffer the disruptive effect of parental migration and ameliorate Black children's structural educational disadvantages. Given possible changes in migration patterns associated with the breakdown of the apartheid regime, we further evaluate whether the positive effect of remittances persists using a separate dataset from 2002 and find support for cross-temporal consistency.

BACKGROUND

Family Structure and Children's Education

A large body of literature on Western societies provides conclusive evidence that family disruption, mostly in the form of parental absence due to divorce, results in decreased access

to physical and social capital, leading in turn to lower educational attainment, reduced cognitive development, and lower physical and psychological well-being (Duncan and Brooks-Gunn 1997; McLanahan and Sandefur 1994). With respect to education, children whose families experience divorce are more likely to drop out of high school, complete fewer years of education, and have lower grades in school. There is also evidence that the outcomes of children are worse in single-mother than in single-father households.

These deleterious effects are largely due to the loss of various resources, both material inputs and parental involvement. There is usually a drop in income associated with divorce (McLanahan and Sandefur 1994). Parents have less money to invest in their children. This also may be accompanied by a need for children to enter the labor force to sustain the family. Reduced parenting and social control is another crucial contributing factor. Single parents are less able to provide adequate academic support and involvement, such as helping children with schoolwork and maintaining effective supervision over children's activities, than are married couples. There is also evidence that parental authority structure is weaker in single-parent families.

The negative consequences of marital dissolution for children also have been studied in the developing world, though in a less consistent fashion because divorce is relatively uncommon and family structure is rather complex (Buchmann and Hannum 2001). Instead, research has largely examined how complex family systems influence educational outcomes. In some African countries, female headship has been found to bring better educational opportunities because such households are more likely to invest resources in children (Lloyd and Blanc 1996). Another line of research has examined how family structure as measured by sibship size and composition influences intrahousehold allocation of educational resources (Gomes 1984). Previous studies also document the importance of the extended kinship systems, in particular the role of grandparents, in facilitating child well-being and buffering the impact of family structure on children (Buchmann and Hannum 2001).

The literature on children's educational attainment in resource-poor settings has focused on the role of economic resources. These studies demonstrate that children in higher-income households are more likely to enroll in school and to obtain higher-quality education (Behrman and Knowles 1997). Due to the prevalent male preference in many settings, this relationship is particularly strong for girls because their schooling is more often perceived as a luxury than is the case for boys.

Consequences of Migration

The New Economics of Labor Migration is especially relevant to this research as it links migration and families left behind (Stark and Bloom 1985). The theory contends that migration decisions are made collectively by families to diversify risks and maximize household economic welfare, particularly in less developed societies with inadequate credit systems and little institutionalized provision for insurance against crop failure, illness, or loss of productivity in old age. Thus, families send some of their members out to work for wages while others tend the fields, generating surplus capital from the savings of the migrant workers.

Remittances increasingly are regarded as the most important outcome of out-migration. They serve as a family welfare system that smoothes consumption, alleviates liquidity constraints, and provides a form of mutual insurance. This has generated heated debate regarding the extent to which households spend remitted earnings on productive investments that contribute to poverty reduction and economic development, such as investment in human capital and entrepreneurship. Several studies document the role of remittances in facilitating small business and agricultural investment and in reducing poverty (Adams

2006; Woodruff and Zenteno 2003). Others have argued that remittances generally are spent on consumption, limiting their long-term developmental consequences (Reichert 1981).

A deeper question is the extent to which remittances reshape the system of stratification by providing some families with economic resources that are substantial in the local economy. Previous research has examined the distributional effects of migrant remittances on household income inequality and offer conflicting conclusions, suggesting that the equalizing role is largely contingent on the characteristics of migrant households and local circumstances (Barham and Boucher 1998).

MIGRATION AS A DISTINCT FORM OF FAMILY DISRUPTION

Migration exemplifies a distinct form of family disruption, leading to decreased parenting but bringing considerable socioeconomic benefits. When one or both parents migrate, children inevitably receive less parental guidance and social support. The well-being of children and their relationships with parents are closely associated with the migrant parents' ability to demonstrate emotional intimacy and support (Dreby 2006). Moreover, the remaining care provider may face additional household responsibilities, further undermining his/her ability to parent. Children themselves may face not only the emotional costs of separation from parents, but also an increased need to contribute to household income or to take care of family chores, both of which may impede their educational progress. When parents are absent, migrant households often turn to resources from kin networks; these resources, while helping alleviate some family constraints, may not fully substitute for parental involvement (Parrenas 2001). Given the prevalence of extended family arrangements and large family sizes, out-migration of siblings and extended family members is fairly common in developing settings (Bryant 2005). The same mechanisms may apply in such situations, albeit probably to a lesser degree.

Unlike non-intact families created by marital dissolution, households with migrants typically do not experience a loss in income. Rather, migrants often make substantial economic contributions to their families, especially when their children are left behind, and these contributions provide the sending households with considerable financial advantages (Stark 1991). These remittances can cover the financial needs of children such as educational expenditures, mitigate the time and energy constraints on the remaining caregiver, and reduce the household's demand for child labor (Brown and Poirine 2005). Remittances may be particularly crucial during times of crisis by earmarking funds for education. The receipt of remittances also may bring non-pecuniary psychological benefits as a result of improved economic status. Beyond financial remittances, out-migration often brings about "social remittances" of knowledge, perceptions, and practices (Levitt 1998), which can promote child development and reinforce the positive effect of economic transfers. Overall, migrants' transfers may have a beneficial effect on children and may offset the negative consequences of family disruption due to migration.

A number of studies have examined the link between household migration and various aspects of children's schooling. Some suggest that remitted earnings from labor migrants lead to human capital investment and thus positively affect children's schooling (Adams et al. 2008 in Ghana; Curran et al. 2004 in Thailand; Hanson and Woodruff 2003 in Mexico) and help children obtain higher grades (Kandel and Kao 2001 in Mexico). In contrast, other studies have documented a deleterious impact (Lopez-Cordoba 2005 in Mexico; McKenzie and Rapoport 2006 in Mexico) and suggest that migration leads to lower educational aspirations (Kandel and Kao 2001 in Mexico), while still others have found no clear impact on school attendance (Acosta 2006 in El Salvador; Borraz 2005 in Mexico). A differential

effect by gender also has been documented: migration seems to narrow the gender disparity in education (Curran et al. 2004).

Several studies have addressed a common methodological difficulty, endogenous selection of migrant households. Borraz (2005) and Hanson and Woodruff (2003) employ instrumental variable analysis with interactions between historical migration rates and household characteristics as the instruments and Adams et al. (2008) employ variations in migration networks and remittances at the ethno-religious level as the instruments. Their work improves the reliability of their estimates but yields no conclusive findings.

This growing field has produced valuable insights. But, thus far, most of the attention has focused on international migration. To advance our understanding, it is helpful to study similar questions with respect to internal migration. In addition, the inconclusive findings may be partially because earlier studies often adopted a composite measure indicating either migration or remittance status, thus confounding the impact of parental absence with that of remittances, as well as the impact of parental migration with migration of nonparents. Our study seeks to disentangle the multiple effects of out-migration in the context of internal migration in South Africa.

THE SETTING

Migration, Remittances, and Family Organization

South Africa offers a useful case due to its clear socioeconomic hierarchy by race and long-standing internal migration as a survival strategy among the most underprivileged group, Blacks. Until 1994, South African social and political institutions were organized primarily on the basis of race. The four official racial groups constitute a clear socioeconomic hierarchy, with Whites on top, Blacks at the bottom, and Asians and Coloreds in between (Treiman et al. 1996).

Temporary labor migration, closely following the political geography of apartheid, has been an integral feature of the South African economy for more than a century (Tomlinson 1990). During *apartheid*, a substantial fraction of the Black population was relegated to scattered rural reserves that contained extremely limited employment opportunities outside of agriculture. Survival for rural Blacks was thus heavily dependent on households successfully devising some means of employment in urban and White areas. Black laborers, mostly men, would find employment on a contract basis in mines, in urban industry, or on white-owned rural farms, with contracts lasting from six months to two years (Posel 2001). Constrained by pass laws designed to deter the settlement of Blacks in White areas, Blacks were considered “guest workers” and generally were allowed residence in these areas only with proper documentation. Unemployed family members were forced to remain in rural areas. As a result, most Black labor migration was circular and migrants returned home at least once every year (Collinson et al. 2006).

Most Black labor migrants (80%) remitted substantial portions of their incomes, representing over 30% of total household income (Cross 2003). In 1993, one in four Black households was dependent on remittance income (Carter and May 1999). The provision of remittances also served as a way for migrants to protect themselves against unemployment and to ensure assistance when they returned permanently. However, remittances were mostly used for consumption purposes (Cross 2003). The use of remittances for human capital enhancement has not been examined.

Migration and remittance patterns for racial groups other than Blacks have not been well studied, presumably because migration represents a survival strategy mainly for Blacks.

Among Blacks, the migration rate was higher for rural Blacks and low-income households, but migration among poor urban and peri-urban Black families was not uncommon (Posel and Casale 2003). Although Blacks could migrate for work as early as age 15, the rate of teenage labor migration was low (less than 2% [Posel and Casale 2003]).

With the lifting of migration control, which began in the late 1980s and continued into the 1990s, there has been some speculation that permanent migration may largely replace circular migration. Nevertheless, recent evidence suggests that the legacy of apartheid remained after 1994: while there has been an increase in permanent migration, circular labor migration and remittances have continued to be substantial (Posel and Casale 2006). Several explanations have been offered, including increasing labor market insecurity, the high cost of urban living, and the limited supply of housing.

The extended family system, in which family obligations are spread beyond the nuclear unit to include relatives, is common among Blacks (Amoateng 2004). The predominant form of extended arrangements is co-residence, especially of multiple generations. This system operates as a way of coping with vulnerability by pooling resources and providing assistance when needed. During *apartheid*, just over half of African households were nuclear and most of the rest were extended in structure. Previous studies have illustrated a positive role of extended kinship for child development, in particular female headship and the presence of grandparents (Case and Deaton 1999). Despite processes of industrialization and urbanization that may weaken family unity, the weight of the evidence makes it clear that Blacks' cultural preference for extended living arrangements has persisted (Amoateng 2004).

Education

A central feature of *apartheid* in South Africa was separate and unequal access to education by race, favoring the White population over other racial groups (Constas 1997). Until the 1994 transformation, Black children had limited educational opportunities and were confined to a separate education system of lower quality. The government spent at least seven times as much on schooling for each White child as for each Black child. Despite some regional variation, almost all Black schools required substantial fees, even at the primary level, which was not true for Whites (Constas 1997). For this reason, the economic resources available to Black families were a crucial determinant of their children's schooling. Because the relative cost of schooling was much higher for Blacks, Black children had higher drop-out rates and lower educational attainment than other groups, and rural Blacks fared worse than their urban counterparts. At the end of apartheid, 50% of Blacks had no education or incomplete primary education, and only 7% had completed secondary or higher education. Although in the mid 1990's the primary enrollment rate for Black children was close to 95%, it dropped below 90% for older children, compared to almost universal enrollment among Whites (Case and Deaton 1999). The cost of education often was given as the primary reason for not enrolling in school.

While racial inequalities in school funding and fees were reduced after the end of *apartheid*, they were not completely eliminated (Ladd and Fiske 2004). Racial differences have been replaced by those based on class, which essentially reinforces the historical disadvantages of Blacks. Only as recently as 1995 was education made compulsory for Blacks between the ages of seven and sixteen, but this goal has yet to be achieved. Another dimension of Blacks' disadvantage is the quality of education, reflected in an uneven distribution of educational resources favoring Whites (Townsend et al. 2002).

RESEARCH QUESTIONS

How Are Migration and Remittances Associated with Schooling?

We study the multiple effects of migration by comparing the enrollment status of children from families in different migration and remittance circumstances. We create a three-category typology: households with no labor migrants (NM hereafter), those with labor migrants but receiving no remittances (MNR), and those receiving migrants' remittances (MR). This measure has rarely been used in earlier studies, but helps disentangle the specific effect of remittances, as about 20% of migrant households fail to receive remittances. The impact of remittances can be obtained by comparing children in MR and NM households. As we show later, an over-simplistic dichotomous migration or remittance measure may mask substantial differences between households. We expect children in MR households to be better off than other children due to increased household resources. Additionally, children in MNR households tend to suffer from parental absence without offsetting economic compensation.

How Robust is the Effect?

The effect of migration may be biased by various aspects of the household or community that affect migration decisions and the availability of remittances as well as children's schooling. For example, living in poor households or communities with poor welfare infrastructures may motivate people to migrate while also having a deleterious impact on schooling. In addition, household human capital may be associated with both migration decisions and children's education. If we do not adjust for these associations, we are likely to observe a spurious effect of migration. We use propensity score methods and contextual fixed-effect models to evaluate the robustness of the results. We also study the cross-temporal consistency of results.

Why Do Migration and Remittances Affect Schooling?

We also explore possible explanations of the effect and further separate the effects of remittances and parental absence. We first posit that increased educational spending is associated with remittances because increased household income enables parents to invest more in children's human capital acquisition.

Given the negative association between child labor and schooling, we also explore how migration and remittances shape the household's demand for child labor. While children in migrant households may be pressed to help meet short-term labor shortages, receipt of remittances may offset the loss of labor by providing additional income to purchase goods and services that otherwise would have to be provided by family members. This in turn should reduce the likelihood of child labor participation.

We further evaluate the countervailing effects of migration—the social costs of parental absence and the economic benefits of remittances—using a typology of parental migration and remittance status. While a reduction in parental inputs likely has a detrimental effect on children's education, this negative impact may be buffered by the receipt of remittances.

What Are the Implications of Remittances for Educational Inequalities?

An investigation of the potential equalizing role of remittances is compelling given that South Africa has one of the highest levels of inequality in the world. We conjecture that remittances reduce inter-household socioeconomic inequalities in children's schooling since remittances are concentrated among Blacks in the middle and bottom of the income distribution. For economically marginal families, remittances can tip the balance as to whether the family can afford to keep a child in school. The result is that pre-migration

family socioeconomic conditions should have a smaller effect on schooling in families with remittances than in those lacking remittances.

DATA AND VARIABLES

Data

Our main data are from the 1993 Project for Statistics on Living Standards and Development (PSLSD). The PSLSD is a nationally representative sample that covered approximately 9,000 households. The survey includes detailed information on individuals' demographic and socioeconomic characteristics, migration status, household socioeconomic conditions, and community infrastructure. It contains information on the highest level of education for all household members and the current school enrollment of each member age 6–24. With respect to migration, the survey asks whether each household member has been absent any time during the previous 12 months, where household members include all those living in the household for at least 15 days during the past year. This information allows us to locate most migrants in the household, since, in the early 1990s, the majority of labor migrants returned home at least once a year (Posel 2001). For those who were or had been away, the reason for the absence was recorded, which enables us to distinguish labor migrants from other kinds of absence. The data also include a module on remittances: whether the household had received remittances in money or in kind from other household members and the amount received during the previous 12 months.

Sample and Variables

We restrict the sample to children aged 7–18. Although the typical school starting age is six, it is not uncommon for Black children to start school at age seven. We limit our analysis to primary and secondary school enrollment, because tertiary education tends to depend less on family resources than on external support. We also evaluate potential differential effects by level of schooling.

The main outcome variable is children's current enrollment status, coded 1 if the child is currently enrolled or, if not currently enrolled, has completed secondary education or more, and coded 0 otherwise. We include as covariates socio-demographic variables such as age and gender. Given the relatively wide age range, we incorporate a quadratic age term to capture the possibility that school attendance increases at young ages but decreases at older ages. We include a measure of family structure with respect to parental presence.

The key predictor is the three-category household migration/remittance status discussed above, combining information on whether, during the past year, any member of the household had been absent for economic-related reasons (which in theory could be both internal and international migrants, but in the case of Blacks are almost entirely internal migrants) and whether the household received any remittances during the past year. A rural-urban distinction is made because living in a rural area almost guarantees limited educational opportunities and resources. We also include the highest level of education attained by any household member age 25 and older to proxy the household educational environment. In addition, we include the total annual household income (excluding remittances) as an indicator of family economic resources (logged). To take into account the complex living arrangements among Blacks, we include whether the household is female-headed and whether a grandparent is present. Finally, we include the number of school-age children (age 6–22) in the household, as an indicator of the level of resource competition.

Descriptive Statistics

Table 1 presents descriptive statistics on migration and remittances by race and location in South Africa. Consistent with previous studies, Black households have by far the highest propensity to send out labor migrants. Black migrant households are also much more likely to receive remittances, which on average account for 40% of the household income for Blacks. Among Blacks, rural households are far more likely than urban households to have migrants and to receive remittances.

Appendix A shows a multinomial logistic regression predicting migration/remittance status. Migrant households are disproportionately likely to be rural, to be engaged in subsistence agriculture, to have low income, but they are also likely to have at least some educated members and to have many children and/or old people. This pattern is consistent with the claim that economically deprived households tend to use migration as a survival strategy.

RESULTS

Migration, Remittances, and School Enrollment

We first estimate the effect of migration and remittances on children's school enrollment. Because there could be multiple children per household, we adopt a multilevel framework, specifically, a random-effect (RE) logit model, to adjust for the overrepresentation of children from large families. The analysis is based on complete cases, after deleting about 3% of the cases with any missing data.

As shown in Table 2, we find strong support for a positive effect of remittances and a negative effect of parental absence. Net of other factors, recipient (MR) households are substantially more likely to keep their children in school, as compared to NM and MNR households. These differences would be hidden if we failed to distinguish between MNR and MR households—the odds ratio for a dichotomous (migrant vs. non-migrant) indicator is 1.2 and the estimate lacks statistical significance. In addition, parental presence clearly matters. Children are most likely to attend school when both parents are present and are least likely to do so when neither parent is present. This measure does not distinguish between parental absence due to migration and other reasons, which we will address later. Turning to the other factors affecting enrollment, there is a curvilinear effect of age. There is a small and marginally significant effect of gender, consistent with previous studies showing little effect of gender on schooling among South African Blacks. In addition, the educational level of adults, urban residence, and female headship are positively associated with school enrollment, whereas household income and the presence of a grandparent do not have a significant impact after adjusting for remittance conditions.

Model 2, substituting a continuous variable indicating the annual remittance amount, gives similar results—the remittance amount is positively associated with children's school attendance. We also carried out parallel analyses for Whites, who are much less likely to send out labor migrants and receive remittances. Migration and remittance are not associated with school enrollment for Whites (for MNR households: OR=0.335, p-value= 0.147; for MR households: OR=0.936, p-value=0.597). Whereas the migration decision for Blacks represents a survival strategy, this does not hold for Whites, who are better able to afford children's education. The lack of a migration effect for Whites holds true for the following analyses and is thus not reported. (We did not analyze the other two racial groups, Asians and Coloureds, because of their small sample sizes.)

We also explore the interactive effects of migration and remittances by grade level, place of residence, and gender. Because school costs are higher in secondary than in primary school, remittances may have a greater impact in later educational stages. This speculation is not

supported by the data (for children in higher grades in MNR households, the difference is OR=0.850, p-value=0.363; in MR households, the difference is OR=1.112, p-value=0.567). This suggests that remittances are important throughout children's educational careers, as they help determine whether children attend school at all and at proper ages in early stages, and whether children can stay in school at later stages. The effect of remittances could be stronger among rural families given their scarcer economic and educational resources. However, we find no support for this conjecture, suggesting the importance of remittances for both rural and urban Blacks: for MNR households, the difference between urban and rural households is OR=1.22, p-value=0.782; for MR households, the difference is OR=0.908, p-value=0.797. Finally, the interaction between gender and migration status is not significant: for MNR households, OR=1.068, p-value= 0.861; for MR households, OR=0.928, p-value=0.721. This is partly because South Africa has little gender difference in schooling; if anything, females are slightly favored (Case and Deaton 1999).

The Robustness of the Effect Propensity Score Matching

To adjust for potential confounding, we complement the regression results with propensity score matching (PSM) estimators (Morgan and Winship 2007). We employ PSM by finding treated and control cases that are similar across a wide range of characteristics, except for migration status, by matching on a summary measure of these characteristics that predicts the probability of migration and remittances. The rationale is that if the treated and control groups are otherwise identical, any differences between the two groups must be an effect of migration. Recent experimental studies demonstrate that PSM can reduce bias by 58% to 96% (Shadish et al. 2008).

Because the major predictor has three categories, the convention is to make three pairwise contrasts. We use nearest neighbor matching with replacement to obtain PSM estimators for each paired comparison. To obtain the propensity score, we condition on a rich set of variables that affect migration and remittance decisions as well as children's schooling, measured at the individual, household, and community levels, including measures of familial and local human capital as well as socioeconomic background. A detailed discussion of propensity score methods and their application in our analysis is posted at http://cupop.columbia.edu/.

The PSM results are reported in Table 3. They prove to be similar to the regression results in Table 2. The positive effect of remittances remains strong. The ATT (the average treatment effect on the treated) is 0.024, which suggests that the odds of attending school are about 1.3 times higher for children in MR households than for those in NM households: $\frac{0.910/(1-0.910)}{0.886/(1-0.886)}=1.3$. The value of ATU (the average treatment effect on the untreated) is 0.017, smaller than ATT, but still strong and significant. This finding suggests that the potential effect of remittances on children's education would be positive, though slightly less pronounced, if non-migrant households sent out migrants and received income transfers. In other words, as current non-migrant households enter labor migration flows, the beneficial impact of remittances would largely persist.

Unobserved Heterogeneity

To provide tests for unobserved heterogeneity, we proceed with two additional analyses. First, the PSM procedure facilitates a method of assessing the sensitivity of results to the presence of an unobserved covariate, the Rosenbaum bounds approach (Diprete and Gangl 2004; Rosenbaum 2002). The basic process is to specify the effect of a dichotomous unobserved component on the treatment decision. By varying the value of the hidden bias,

we can assess the sensitivity of the results. Applying this procedure, we find that even when imposing a large effect of the unobserved bias, a consistent effect of remittances remains.

Another test can be done by using contextual fixed-effect (FE) models to take into account unobserved common community environments that affect migration decisions and children's schooling. Essentially, this method makes comparisons of children within the community. The effect of remittances (OR= 1.323, p-value= 0.001) is similar to the RE estimate shown in Table 2.

The finding that our results are robust under a variety of different procedures increases confidence that the receipt of remittances has a genuine positive impact on children's school enrollment for Blacks in South Africa. However, we cannot rule out all possible sources of bias. An instrumental variable approach or a natural experiment would be ideal for handling this problem, but suitable instruments and natural experiments proved impossible in our data and in the context of voluntary labor migration.

Investigation of the Mechanisms Producing the Observed Effects

We now turn to analysis of the mechanisms, beginning with the effect of remittances on household educational expenditures. This analysis is carried out at the household level and is adjusted for clustering at the community level. The outcome variable is the natural log of the total amount spent by the household on education during the previous year, which we measure by summing 14 education spending items, including school fees, books, etc. The results are shown in the first column of Table 4. Remittances clearly matter: remittance households spend significantly more on their children's education than do other households.

With respect to child labor, the outcome variable is a binary indicator of whether the child currently participates in any paid or unpaid labor. It is coded 1 if the child has a regular job, or has done any casual, temporary, or other kind of work during the past month, and 0 otherwise. Again, remittances play an important part in child labor participation. The odds of child labor are far lower in MR households than in other households.

Finally, to separate the positive and negative aspects of migration due to remittances and family separation, we examine the effect of parental migration and remittance status (column 3). A new migration predictor is constructed by combining information on the migration status of each individual with the individual's relationship to the focal child. We form a 7-category typology by crossing migration/remittance status by the presence or absence of parents due to migration. We distinguish 1) NM households with both parents; 2) MNR households in which one or both parents migrated; 3) MNR households in which both parents were present; 4) MR households in which one parent migrated; 5) MR households in which both parents migrated; 6) MR households in which both parents were present; and 7) NM households where parents were absent due to non-migration related reasons (mainly death or marital dissolution). We do not differentiate migrant parents by gender, because in the majority of single-parent households children were left behind by fathers.

We conclude that migration has both a beneficial effect due to remittances and a deleterious effect due to parental absence, and that remittances can largely offset the negative consequences. In recipient households in which both parents were present (which means siblings or other extended family members had migrated), children were about twice as likely to be enrolled in school than they were in non-migrant households. This can be regarded as the pure effect of remittances. In MNR households in which parents migrated, children clearly suffered from their absence, with the odds of enrollment reduced by more than half. This can be regarded as the pure effect of parental absence due to migration. In remittance households in which one parent migrated, the positive effect on school

attendance decreases but continues to be strong. However, in remittance households with both parents absent, the positive effect disappears. These results demonstrate that, although children in recipient households tended to fare better than those in non-recipient households, those with two migrant parents did significantly worse than those living with one or both parents. Lastly, we confirm the results of earlier studies that show a detrimental impact of parental absence due to reasons other than migration (i.e. death of parents, divorce).

Implications of Remittances for Educational Inequalities

To assess the effect of remittances in reducing educational inequalities, we re-estimate the model in Table 2 separately for households with and without remittances—the similarity of NM and MNR households justifying pooling the two groups. The results clearly suggest that remittances play a crucial role in reducing socioeconomic inequalities in school enrollment (Table 5). Specifically, urban residence, higher income, presence of parents, and female headship are all significant predictors of school enrollment in non-recipient households but become insignificant in recipient households. Formal statistical tests of the difference between recipient and non-recipient households confirm most of our observations, with the exception of location of residence. This is presumably because the reduced resource constraints in recipient households enable a larger number of children who otherwise would be precluded from attending school due to their families' difficult circumstances to do so. However, the effect of the household educational environment continues to be strong. This reinforces the nearly universal finding that family human capital plays a central role in shaping children's schooling independent of economic resources.

PATTERNS AND EFFECT OF MIGRATION AND REMITTANCES OVER TIME

The PSLSD data were collected at the end of the *apartheid* era. Given changes in the legal rights and mobility restrictions of Blacks resulting from the 1994 transformation, it is possible that there have been substantial changes in migration patterns and their consequences. To assess the possible temporal change, we analyze data from the 2002 wave of the South African Labour Force Survey (LFS), a semi-annual national probability survey. The survey encompasses about 100,000 individuals residing in 30,000 households. The LFS is not as comprehensive as the PSLSD. Thus, we are restricted to analyzing the overall effects of migration and remittances.

The data set contains information on education as well as migration and remittances. Migrants are defined as persons who are regarded as members of the household but are usually away for a month or more to work. Remittances sent back to the household over the previous 12 months are recorded.

The outcome variable is school enrollment and the major predictor is migration/remittances status, both defined the same way as in PSLSD. Other predictors are very similar to those included in the 1993 analysis. Because the amount of missing data on household income is relatively high (30%), we use multiple imputation methods (Little and Rubin 2002). Specifically, we first estimated regression equations predicting income, and then drew repeatedly from the predicted distribution of the missing values to obtain five complete imputed data sets. Next, we estimated logit models using each imputed data set. The coefficients were averaged, and the standard errors were estimated as the average of the standard errors based on each imputation, plus a component for the variation in the estimated coefficients across imputations. Again, the analysis is restricted to Black children aged 7–18.

Trends in Migration and Remittance Patterns

The race and location differences in 2002 are quite similar to those in 1993, suggesting that the patterns of migration and remittances have not fundamentally changed (Table 6). However, the proportion of households with migrants, and especially of households receiving remittances, is smaller in 2002. At least for Blacks, these differences may partly reflect changes in migration patterns as a result of the abolition of residential restrictions, which enabled Blacks to move as families and to live permanently in their places of employment.

The Effect of Migration and Remittances

Table 7 shows a model for 2002 similar to that shown in Table 2 for 1993. The positive effect of remittances clearly persists over time and has remained strong even in the post-apartheid era—children in recipient households are more likely to attend school. We also carried out parallel analyses for Whites and additional analysis treating remittances as a continuous measure. The positive role of remittances remains when the annual remittance amount is used, and remittances have no effect for Whites. By contrast, the negative effect of being in MNR households disappears in the LFS sample. Although we cannot rule out the possibility that this variation is due to differences between two data sets, there are reasons for suspecting that it at least partially reflects changing migration circumstances in post-*apartheid* South Africa. As we saw in our PSLSD analysis, the disadvantage for children in MNR households mainly results from parental migration without economic compensation. Over time, Blacks are more likely to take family members to the place of employment. The fraction of MNR households with migrant parents may have diminished substantially, but the data do not permit us to estimate this. It also is probable that labor migrants are able to return home more frequently than during the *apartheid* era (Collinson et al. [2006] showed that 40% circular migrants return home frequently and over 50% communicated with families within two weeks of the interview). Thus, migrants may be better able to maintain close contact with their children, thereby reducing the negative impact of parental absence.

We also assessed the differential effects of remittances by gender, grade level, and place of residence. The gender and grade interactions are not significant. But we find some evidence for a rural-urban difference, with remittances playing a greater role in rural Black families (for MR households, the rural-urban difference is OR=0.677, p-value= 0.01). This is presumably a result of the more rapid post-*apartheid* improvement in socioeconomic conditions and educational infrastructures in urban areas. Finally, we assess the equalizing role of remittances for educational inequalities and reach the same conclusion as before—remittances help reduce socioeconomic disparities in education with the exception of household human capital.

CONCLUSION AND DISCUSSION

Labor migration, as an institutionalized household strategy in resource-constrained areas, proves to be a useful way to understand the role of family dynamics in children's human capital development and the educational stratification process. The absence of parents and the availability of remittances lead to both costs and benefits for children's education. The findings add to the literature on family structure and child development by documenting migration as a distinct form of parental absence in distinction to other well-studied scenarios such as marital dissolution. Importantly, this study shows the profound influence of remittances, which extends beyond consumption improvements to include human capital investment. These results also are consistent with the New Economics of Labor Migration, in which rational actors send remittances with the intent of improving household livelihood and their children's educational opportunities.

We studied the role of remittances in South Africa, which is a particularly apt case because of its long-standing system of racial socioeconomic stratification and its tradition of Black internal migration. We showed that children in recipient households are more likely to attend school than their counterparts in other types of households. We also studied various ways through which remittances enhance educational opportunities and showed that increased household income through remittances allows parents both to afford more schooling and to reduce their need for child labor. These transfers also help to mitigate the disruptive impact of parental absence and reduce interfamilial educational inequalities.

This study has important methodological implications for studies of migration. The incorporation of a measure that distinguishes the effect of family disruption and remittances reveals complex and countervailing effects of migration that would not be visible if such a distinction were not made. This may partly explains the inconsistencies among earlier studies. Furthermore, the paper uses a variety of methods to assess the robustness of the results with respect to observed and unobserved confounding. The findings suggest that the results are unlikely to be substantially driven by selection bias. The propensity score matching approach turns out to be particularly helpful, as it permits assessing the potential effect of remittances if labor migration were to expand over time and leads us to conclude that the effect would persist. This finding is supported by additional analysis using a second data set collected 10 years later. In spite of changing residential regulations since the collapse of *apartheid*, labor migration and remittances have continued, and the positive and equalizing effect of remittances has indeed persisted over time.

The results document the crucial role of remittances in reducing educational inequalities, which they do by improving the economic circumstances of children in deprived households. Additional analysis suggests that the effect of remittances does not exist for Whites. Such results point to the potential role of remittances in reconfiguring educational disparities among Blacks and between racial groups. Given that human capital is key to socioeconomic development, these results underscore the developmental consequences of migration and remittances by transforming the hierarchical educational stratification process. A policy implication is that, so long as migration remains a reality in South Africa, mechanisms that boost remittances and reduce the difficulty of transferring remittances would have considerable positive implications for improving the well-being of Black children and for reducing educational disparities.

Nevertheless, the beneficial role of remittances should be understood in the context of persisting strong racially-based social institutions. Migration and remittances in South Africa effectively mirror the legacy of the *apartheid* system that created geographical and socioeconomic segregation across racial groups. As a consequence, Blacks have had to resort to migration to better their livelihoods and those of the next generation far more heavily than have other racial groups. Migration often entails leaving families behind, a pattern enforced by residential restrictions during *apartheid* and by disadvantaged living and employment conditions for Blacks in the present era. As we have documented, while migrants' remittances are beneficial, the countervailing social costs of family separation are also real.

There is still more to be done on this topic. Because we lack suitable panel data and certain information, such as the sender of remittances and the duration and distance of migration, we have had to rely on indirect inferences to reach some of our conclusions. To definitively pin down the manner in which remittances function, longitudinal studies are needed that provide information about the characteristics of migrants and household migration and remittance histories. We also lack some crucial measures of education that would help better

understand the process, such as school quality and children's school performance and aspirations.

The South African setting is both unique and universal. It is unique due to its long history of racial stratification that has instilled a strong sense of hierarchy and created dramatically unequal access to education. At the same time, South Africa exemplifies the high rate of internal migration seen in many nations as a means of improving the socioeconomic position of the underprivileged. Our study adds geographical diversity and expands the previous focus on international migration. Since labor migration continues to be important in many other parts of the world, it is well worth investing in this topic. We may expect the economic situations of migrant-sending areas to condition the effect of remittances— remittances may play a greater role in less developed areas. Comparing children left behind by internal and international migrants also would be a fruitful direction because the two streams of migration involve varying levels of disruption and remittances (i.e., international migration entails longer periods of separation and less frequent contact than internal migration). A comparative perspective would greatly advance our understanding of migration in shaping family dynamics and opportunity structures.

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Table 1

Percentage Distribution of Household Migration and Remittances Status by Race and Place, PSLSD 1993. (N=8,809)[a]

	No migrants	Migrants, no remittances	Remittances	*N*
Overall	70.2%	6.0%	23.8%	8,809
Blacks				
Overall	65.0	5.6	29.4	6,494
Rural	55.9	7.5	36.7	4,173
Urban	81.4	2.2	16.3	2,312
Coloreds				
Overall	82.2	4.2	13.7	690
Rural	88.9	6.7	4.4	45
Urban	81.7	4.0	14.3	645
Indians				
Overall	83.7	6.6	9.7	258
Rural	100.0	.0	.0	2
Urban	83.6	6.6	9.8	256
Whites				
Overall	86.5	8.9	4.6	1,367
Rural	93.8	1.8	4.5	112
Urban	85.9	9.5	4.6	1,255

[a]All three chi-square tests of migration status by race (overall, and separately for rural and urban households) are significant at the .001 level.

Table 2

Random-effect Logit Model of School Enrollment on Migration and Remittances Status, Black Children, PSLSD 1993. (Logits presented; standard errors in parentheses)

Independent variables	Model 1	Model 2
Child-level		
Age	2.548*** (.133)	2.550*** (.133)
Age squared	−.103*** (.005)	−.103*** (.005)
Male (ref. female)	−.224* (.100)	−.222* (.100)
Parental presence (ref. both parents present)		
Only mother present	−.584*** (.173)	−.592*** (.173)
Only father present	−.619* (.310)	−.635* (.310)
Neither parent present	−.814*** (.169)	−.809*** (.169)
Household-level		
Household migration and remittances status (ref. no migrants, NM)		
With migrants, no remittances (MNR)	−.603* (.258)	
With remittances (MR)	.519*** (.153)	
Log (amount of remittances)		.083*** (.020)
Urban residence (ref. rural)	.531** (.164)	.585*** (.164)
Highest adult education in HH (ref. no school)		
Primary school	.601*** (.178)	.572** (.178)
Some secondary school	1.562*** (.198)	1.528*** (.198)
Completed secondary or more	2.429*** (.259)	2.376*** (.258)
HH annual income (log)(excluding remittances)	.067† (.040)	.079* (.040)
Total number of school-aged children (6–22)	−.017 (.034)	−.007 (.034)
Female-headed HH (ref. male-headed HH)	.505** (.169)	.523** (.170)
Grandparent present in the HH	.233 (.144)	.266 (.173)
Constant	−12.151*** (.810)	−12.289*** (.811)
% of variance explained between clusters	58.2*** (.028)	58.3*** (.028)

Independent variables	Model 1	Model 2
Log-likelihood	−2572.9	−2574.8
N	9,866	9,866

† p<0.1

* p<.05

** p<.01

*** p<.001

Table 3

Propensity Score Matching Estimators of the Effect of Household Migration and Remittances Status on School Enrollment, Black Children, PSLSD 1993.

	Treated E(Y) [c]	Controls E(Y) [c]	Difference (treatment effect) [c]	Standard error
MNR vs. NM [a]				
ATT	.854	.894	−.041†	.023
ATU	.902	.872	−.030	.021
ATE	--	--	−.031	.020
N [b]	492	3,429		
MR vs. NM [a]				
ATT	.910	.886	.024*	.011
ATU	.900	.916	.017†	.009
ATE	--	--	.020*	.008
N [b]	2,901	4,131		
MR vs. MNR [a]				
ATT	.912	.846	.066*	.027
ATU	.862	.912	.050*	.021
ATE	--	--	.063**	.021
N [b]	2,003	441		

[a] NM, MNR and MR respectively refer to households with no migrants, households with migrants but not remittances, and household with remittances. MNR, MR, and MR households are considered the treated group in the three matching models, respectively. ATT refers to the average treatment effect for the treated. ATU refers to the average treatment effect for the untreated. ATE refers to the average treatment effect.

[b] Matching leads to a smaller sample size, as only comparable cases are used in the analysis. Specifically, about 73% of the cases are kept in the analysis contrasting MNR with NM, and 82% and 58% are retained for analyses comparing MR with NM, and comparing MR with MNR, respectively. This can be considered evidence of good matches.

[c] The first two columns show adjusted enrollment rates. The third column shows differences in adjusted enrollment rates between treated and control groups.

† p<0.1

* p<.05

** p<.01

*** p<.001

Table 4

Random-effect Linear and Logit Models of Educational Spending and Child Labor Participation on Migration and Remittances Status, and of School Enrollment on Parental Migration and Remittances Status, for Blacks, PSLSD 1993 (standard errors in parentheses).

	Educational Spending (log)	Child Labor	Enrollment on Parental Migration Status
	Linear	Logit	Logit
Household migration and remittances status (ref. no migrants, NM)			
With migrants, no remittances (MNR)	−.091 (.122)	−.073 (.345)	
With remittances (MR)	.225*** (.066)	−.385* (.189)	
Parental migration and remittances status (ref. no migrants, both parents present)			
One or both parents migrated, no remittances			−.870** (.313)
Both parents present, no remittances			−.512 (.360)
One parent migrated, with remittances			.329† (.198)
Both parents migrated, with remittances			.150 (.238)
Both parents present, with remittances			.616*** (.186)
No migrants, parent absent due to other reasons			−.734† (.430)
% of variance explained between clusters	18.0*** (.019)	44.0*** (.072)	58.1*** (.028)
Log-likelihood	−8157.1	−1134.7	−2542.3
N	4,103	4,906	9,866

Notes: Coefficients of other covariates are omitted, which are similar to those presented in Table 2.

† p<0.1

* p<.05

** p<.01

*** p<.001

Table 5

Random-effect Logit Model of School Enrollment by Household Remittances Status, Black Children, PSLSD 1993

	Children in HH's without remittances		Children in HH's with Remittances	
Independent variables	**Logit**	**Std. error**	**Logit**	**Std. error**
Child-level				
Age	2.471***	.171	2.692***	.214
Age squared	−.099***	.007	−.109***	.009
Male (ref. female)	−.187	.128	−.183	.160
Parental presence (ref. both parents present)				
Only mother present	−.847***	.238	−.277	.251
Only father present	−1.009**	.381	.040	.552
Neither parent present	−1.096***	.221	−.386	.264
Household-level				
Highest adult education in HH (ref. no school)				
Primary school	.423†	.233	.582**	.277
Some secondary school	1.443***	.261	1.651***	.303
Completed secondary and more	2.301***	.341	2.459***	.398
Urban residence (ref. rural)	.593**	.195	.457	.315
Total HH annual income (log) (excluding remittances)	.160*	.065	.031	.051
Total number of school-aged children (6–22)	.033	.045	.030	.053
Female-head HH (ref. male-head HH)	.741**	.230	.245	.252
Grandparent present in the HH	.077	.185	.052	.230
Constant	−12.359***	1.106	−12.399***	1.210
Log-likelihood	−1595.9		−972.4	
N	5,865		4,001	

† p<.1

* p<.05

** p<.01

*** p<.001

Table 6

Household Migration and Remittances Status by Race and Place, LFS 2002. (N=26,474)[a]

Percentage	No migrants	Migrants, no remittances	Remittances	*N*
Overall	81.8%	5.3%	12.8%	26,474
Blacks				
Overall	77.3	6.6	16.1	20,135
Rural	64.2	10.5	25.3	9,999
Urban	90.3	2.8	7.0	10,136
Coloreds				
Overall	93.5	1.8	4.6	2,739
Rural	92.3	1.8	5.9	779
Urban	94.0	1.8	4.1	1,960
Indians				
Overall	96.7	1.3	2.0	604
Rural	92.9	7.1	.0	14
Urban	96.8	1.2	2.0	590
Whites				
Overall	98.5	.8	.7	2,968
Rural	96.6	2.6	.8	379
Urban	98.7	.5	.7	2,589

[a]All three chi-square tests of migration status by race (overall, and separately for rural and urban households) are significant at the .001 level.

Table 7

Random-effect Logit Models of School Enrollment on Migration and Remittances Status, Black Children, LFS 2002 (logits shown; standard errors in parentheses)

Independent variables	School Enrollment (Children age 7–18)
Child-level	
Age	2.667*** (.110)
Age squared	−.110*** (.004)
Male (ref. female)	.089 (.095)
Household-level	
Household migration and remittances status (ref. no migrants, NM)	
With migrants, no remittances (MNR)	.272 (.194)
With remittances (MR)	.547*** (.142)
Urban residence (ref. rural)	.356** (.129)
Highest adult education in HH (ref. no school)	
Primary school	3.520*** (.589)
Some secondary school	5.256*** (.587)
Completed secondary and more	5.789*** (.594)
Total HH annual income (log) (excluding remittances)	.031** (.012)
Total number of school-aged children (6–22)	−.146*** (.031)
Female-head household	.134 (.116)
Constant	−14.817*** (.844)
% of variance explained between individuals	63.9 (.010)
Log-likelihood	−3503.5
N	21,603

† p<.1

* p<.05

** p<.01

*** p<.001