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What Happen to Children's Education when Their Parents Emigrate? Evidence from Sri Lanka

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Abstract

We examine the effects of parental emigration from Sri Lanka on the education of the migrants' children left behind. Using access to foreign-employment agencies at community level as an instrument for migration in two-stage least squares estimations, we do not find parental migration matters on average. However, analyses by the gender of the migrants show the effects are heterogeneous: When the mothers migrate and the fathers stay behind, education of the children worsens; but, when the fathers migrate and the mothers take care of the children, it improves. There are also some evidence boys, younger children, and children of the less educated parents gain more from parental migration.

JEL Codes: F22, I22, O15

Keywords: parental migration, children's education, South Asia, Sri Lanka.

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1 INTRODUCTION

Many people in developing countries like Mexico, India, and Sri Lanka emigrate to work and remit their incomes back home. In 2013, 232 million people or 3.2% of the world's population are international migrants; about 40% of these are from less developed countries (United Nations, 2013). Developing countries in 2013 may receive US\$414 billion remittances—some of these countries get more remittances than foreign aids or foreign direct investment (World Bank, 2013). Sri Lanka, for example, a country of twenty million people, has 1.3 million emigrants, 6% of the population; they remit US\$6 billion in 2012, about 9% of the Sri Lankan GDP and more than one-third of its foreign exchange (Central Bank of Sri Lanka, 2012; Sri Lanka Bureau of Foreign Employment, 2011).

These large flows of migration and remittances raise the question of what happens to the migrants' children left behind—a legitimate concern given that many of the migrants are poor. Does migration, through remittances, relax the financial constraints of the migrants' families and, therefore, improve their children's welfare? Or, does migration worsen it, because the absence of parents at home harms the children psychologically or disrupts their lives (the children may have to spend more time to do household chores, take care of their younger siblings, or work for money)?¹ Or, do remittances perhaps just offset the adverse effects of the parental absence?

¹ Ginther and Polllak (2004) and Sandefur and Wells (1997), for example, find parental absence from homes adversely affects children in developed countries.

In this paper, we examine the effects of parental migration on one aspect of children's welfare in Sri Lanka, their education.² Looking at the case of Sri Lanka is interesting because most Sri Lankan emigrants are poor and low-skilled whose children are likely to be affected by parental migration. Moreover, more women emigrate to work from Sri Lanka than men do unlike, for example, its neighbouring countries (Nana, 2002), which allows us to identify the effects of migration by the gender of the migrants, in particular the effects of maternal migration on the education of the migrants' children. There have been also policy debates in Sri Lanka recently on whether the government of Sri Lanka should restrict female migration because of its possible adverse effects on the families left behind in addition to the cases of abuse that some Sri Lankan women face when they work in the Middle East (The Sunday Times, 2013; Daily Mirror, 2013).

The empirical literature is mixed on whether parental migration improves the education of the migrants' children: The findings vary by treatment variable, sample of children, and empirical strategy. Amuedo-Dorantes et al. (2010), using instrumental variable (IV) techniques, find remittances increase school attendance in Haiti, but they also highlight the adverse effects, migration may have on the children left behind. Cox-Edwards and Ureta (2003), using the Cox proportional hazard model—and Mansuri (2006), Yang (2008), and Hanson and Woodruff (2003), using IV techniques—find migration or remittances increase enrolment rates or years of schooling in El Salvador,

² We focus on the overall effects of parental migration on the education of the migrants' children, not only those of remittances. In the case of split migration, the type of migration we analyse in this paper, the receipt of remittances also means the absence of mothers or fathers, which may also affect the children's education.

Pakistan, Phillipines, and Mexico, respectively.³ In contrast, Antman (2011) and McKenzie and Rapoport (2011), also using IV techniques, find migration worsens children's education in Mexico: Antman (2011) shows Mexican children spend less time to study and more time to work when their fathers migrate to the US; McKenzie and Rapoport (2011) show parental migration lowers the enrolment rates of the migrants' children.⁴

Because parental migration (in a regression of children's education on whether their parents emigrate) is endogenous, the challenge of identification is to find exogenous variations in migration, which is why most papers in this line of literature use IV techniques to solve the endogeneity problems.⁵ In this paper, we use a new instrument—access to foreign-employment agencies at community level in Sri Lanka in the past. We show that the instrument strongly predicts current migration; moreover, there seems to be no differences between communities where the agencies operated and those where they did not. We, therefore, identify the effects of parental migration using a new source of exogenous variations, the effects of emigration of parents who are induced to migrate by having access to foreign-employment agencies. We also contribute to the literature by examining the effects of parental migration by the gender of the migrants, unlike many papers in the literature that examine the effects of parental

³Acosta (2011), however, does not find remittances help older Salvadoran boys.

⁴ See also Cattaneo (2012), Cuecuecha (2009), and Alcaraz et al. (2012).

⁵ Yang (2008), for example, uses exchange rates as an instrument for remittances. Hanson and Woodruff (2003), McKenzie and Rapoport (2011), Acosta (2011), and Mansuri (2006) use historical migration networks while Amuedo-Dorantes et al. (2010) and Antman (2011) use employment statistics in the host countries as an instrument for remittances or migration.

migration only. We provide some evidence that the effects of parental migration is heterogenous: Parental migration from Sri Lanka does not affect children's education on average, but paternal migration improves the migrants' children's educational outcomes while maternal migration worsens them. By focusing on Sri Lanka where most migrants are low skilled workers and most of the female migrants work as housemaids in the Middle-East with minimal protection from abuse, we also add to the literature by examining how children from very poor households do in schools when their mothers or fathers emigrate to work.

We proceed as follows. Section 2 describes the data and empirical strategy. Section 3 discusses the results and proposes mechanisms through which maternal migration and paternal migration affect children's education differently. Section 4 concludes.

2 DATA AND EMPIRICAL STRATEGY

2.1 Data

We use the Sri Lanka Integrated Survey 1999-2000, a representative survey of Sri Lanka except for the Northern- and Eastern regions where the then ongoing civil war disrupted data collections. The survey includes 7,500 households and 35,181 individuals. Because we want to study the effects of migration on children, we use the sample of schooling-age children between the ages of six and eighteen; we have 7,752 children in the sample—3,893 boys and 3,859 girls.

We focus on the effects of emigration for work. There was also political migration from the Northern- and Eastern regions of Sri Lanka when the survey was done, but we exclude this form of migration because its effects on children's education possibly differ. Besides, in the data, the sample of households that lived in the Northern- and Eastern regions of Sri Lanka is unrepresentative.

We define the treatment variable, *parental migration*, the migratory status of parents, as an indicator equals one if the father or mother of a child emigrates abroad to work and zero otherwise. In some specifications, we also use two other treatment variables, *maternal migration* and *paternal migration*; they are indicators equal one if the mother and the father emigrates, respectively.

We use four educational outcomes: *school enrolment* status of the children, their *class-age gap*, whether they *receive private tuition*, and the households' *spending on education*.⁶ All variables are child-level variables. We define them as follows: (1) The *school enrolment* status of a child is an indicator equals one if the child is currently in school and zero otherwise; (2) the *class-age gap* is the difference between the grade a child is attending and her age—a measure of how well she does in school (because most children in Sri Lanka enter primary schools the year they are six years old, the class-age gap for most children is from -4 to -5 (Arunatilake, 2006); if they repeat grades, the class-age gap would decrease); (3) whether a child *receives private tuition* is an indicator equals one if the child receives private tuition and zero otherwise—a

⁶ The survey has no information on other measures of outcomes such as students' marks or whether the students repeat grades.

measure of access to private tutors (De Prabal and Ratha (2012), for example, use this variable as a measure of access to superior education); (4) *spending on education* is how much a household spends on a child's education as a share of the household's total spending.

The summary statistics of the key variables in Table 1 shows no evidence that migrant- and non-migrant households differ statistically. Migrant households have more children, the mothers are more educated while the fathers are less educated, they are younger by about two years. Proportionately more Hindus, Muslims, and Christians migrate and less Buddhists do. The age, gender, and educational outcomes of the children are also similar across migrant- and non-migrant households. None of the differences across types of households statistically differ from zero.

<Insert Table 1 here>

2.2 Empirical Strategy

Because migration is endogenous, we estimate the effects of parental migration on the migrants' children's education using instrumental variable (IV) techniques.⁷ In the first stage, we regress

⁷ Migration is endogenous because: (1) There are unobserved factors that affect both migration and children's education such as whether the parents are poor and uneducated or whether they want to live with their children as they grow up (omitted-variable bias problems); (2) children's education and migration are likely to be jointly determined (for example, girls' education and whether the mothers migrate may depend on women's bargaining power within households); and (3) some parents may decide to migrate to finance their children's education (reverse causality).

$$D_{ijkl} = \alpha + \beta z_{kl} + X\gamma + \zeta_l + \varepsilon_{ijkl} \quad (1)$$

where D_{ijkl} is the migratory status of a parent, an indicator equals one if the father or the mother of child i in household j who lives in community k and district l is a migrant and zero otherwise; z_{kl} is an instrumental variable that varies by community; X is a vector of child- and household characteristics; ζ_l is district fixed-effects, which control for observed- and unobserved time-invariant district-specific factors that affect both migration and children's education such as how developed a district is in the past or how good schools in the district had been; and ε is the error terms. In the second stage, we estimate

$$y_{ijkl} = \delta + \theta \widehat{D}_{ijkl} + X\lambda + \zeta_l + \varepsilon_{ijkl} \quad (2)$$

where y_{ijkl} is an educational outcome of child i and \widehat{D} is the predicted migratory status of the child's father or mother from Equation (1).

We use the local presence of foreign-employment agencies in 1995 (five years before the survey was done in 2000) as an instrument for migratory status. The instrument, *agencies*, is a community-level indicator equals one if a household lives in a community where foreign-employment agencies operated in 1995 and zero otherwise. We get the list of addresses of all registered foreign-employment agencies that operated in 1995 from the Association of Licensed Foreign Employment Agents in Sri Lanka. We match these addresses with the communities in our sample and define *agencies* equals one if a community had foreign-employment agencies in 1995 and zero otherwise.

The instrument *agencies* predicts migratory status because foreign-employment agencies help prospective migrants in Sri Lanka to find job opportunities, prepare and submit their travel document and job applications on the migrants behalf, and mediate them with employers abroad. According to Sri Lanka Bureau of Foreign Employment (2011), about 60% of male migrants and 75% of female migrants in Sri Lanka in the past fifteen years have used the services of the foreign-employment agencies. This instrument is, therefore, similar to migration network and migration costs that past studies such as Munshi (2003), Hanson and Woodruff (2003), and McKenzie and Rapoport (2007) use to instrument for migration. *Agencies*, like migration network or migration costs, induces exogenous variations in the supply of migrants from source countries, which we can use to identify the effects of migration on migrants's children's education.

Table 2 presents the first-stage regression. Each cell provides an estimate of *agencies* in a regression of migratory status on *agencies* with (even-numbered columns) and without (odd-numbered columns) child- and household characteristics. In columns 1-2, the dependent variable is *parental migration*, an indicator equals one if a household head or his/her spouse migrates; in columns 3-4 *maternal migration*; in columns 5-6 *paternal migration*.

<Insert Table 2 here>

The estimates show *agencies* predicts migratory status—the instrument is relevant. Living in a community where foreign-employment agencies operated in 1995 increases the likelihood of parental, maternal, and paternal migration by 15, 17, and 14 percentage

points, respectively, which are large increases because only about 6% of households emigrate to work. The estimates are similar regardless of whether we control for child- and household characteristics. All estimates are statistically significant at 0.1% level; the adjusted R-squared are more than 20%; the F-statistics are larger than 18.

We cannot test whether *agencies* correlates with children's education only through migration (i.e., whether it satisfies the exclusionary restriction), but we do not find communities with- and those without foreign-employment agencies systematically differ in 1995, at least along the dimensions whose data are available. There is no evidence that foreign-employment agencies are more likely to operate in less developed communities (Panel A of Table 3 shows that both types of communities have had schools and health facilities since about 50 and 31 years ago, respectively) or that many household in Sri Lanka internally migrate and move to communities with foreign-employment agencies to get employment abroad (only one in fifty households have migrated within Sri Lanka since 1995; the figures are the same in both communities with and without foreign-employment agencies). Communities with and without foreign-employment agencies do not seem to systematically differ either as their characteristics in 2000 indicate (Panel B shows communities with foreign-employment agencies are more likely to have schools in 2000, but they are less likely to have health facilities, banks, or markets; more importantly, the differences do not differ statistically). Even the characteristics of the households (Panel C) and those of the children (Panel D) in 2000 do not differ systematically and their differences do not differ statistically.

<Insert Table 3 here>

To summarise, the instrument is relevant: It predicts *migratory status*. It is also likely to meet the exclusionary restriction: There is no evidence that foreign-employment agencies operated in less-developed communities or in communities whose residents have high propensity to migrate; there is no evidence that households move to communities with foreign-employment agencies just because they want to migrate abroad either. Therefore, to the extent that the instrument satisfies the exclusionary restriction, the estimate of θ in Equation (2) provides the causal effects of parental migration on the education of children whose parents are induced by foreign-employment agencies to migrate abroad to work.

3 RESULTS

3.1 Basic Results

Table 4 presents the ordinary least squares (OLS) (columns 1-2) and the two-stage least squares (2SLS) (columns 3-4) estimates of migration. Each cell provides an estimate of the effects of parental, maternal, and paternal migration on school enrolment status of the migrants' children, with (even-numbered columns) or without (odd-numbered columns) controlling for child- and household characteristics.

<Insert Table 4 here>

We do not find evidence that parental migration matters: All estimates in row (1) of Table 4 are negative, but they are insignificant statistically. On average, parental migration does not seem to affect whether the migrants' children attend schools.

Analyses by gender of the migrants in rows (2-3), however, show a different picture: Maternal migration lowers enrolment rates while paternal migration improves them. Both the OLS and 2SLS estimates of the effects of maternal migration are negative regardless of whether we control for child- and household characteristics; all estimates of the effects of paternal migration are positive. The magnitude of the 2SLS estimates are larger than that of the OLS, which suggests OLS estimators have downward biases of the effects of migration. All estimates are significant statistically; the 2SLS estimates in particular are significant statistically at 0.01% level. The OLS estimates in row 2 and columns 1-2 indicate maternal migration is associated with 7-8 percentage points lower enrolment rates. The corresponding 2SLS estimates in columns 3-4 show maternal migration lowers enrolment rates by 17-19 percentage points, which equal a 20-23% decrease. In contrast, paternal migration, as row 3 columns 3-4 shows, increases enrolment rates by 13-15 percentage points, which equal a 15-18% increase.

Table 5 presents the effects of migration on other educational outcomes. Each cell provides an OLS or 2SLS estimate of the effects of parental (Panel A), maternal (Panel B), and paternal (Panel C) migration on class-age gap, whether a child receive tuition, or budget share of education, with (even-numbered columns) or without (odd-numbered columns) controlling for child- and household characteristics.

<Insert Table 5 here>

Consistent with the results in Table 4, Panel A of Table 5 shows no evidence that parental migration affects the other educational outcomes. The relationship between

parental migration and education also vary by measure of outcome: While parental migration positively correlate with class-age gap and whether children receive tuition, it negatively correlates with enrolment status and household's spending on education. The effects on whether children receive tuition and household's spending on education are large economically, though, again, they are insignificant statistically.

Panel B shows maternal migration lowers the probability of whether children receive private tuition. The 2SLS estimates in row 5 show maternal migration lowers the probability that a child receives tuition by 17-18 percentage points or 48-51%, which are significant statistically at 1% level. Maternal migration also correlates negatively with class-age gap and education spending, but they are insignificant statistically (rows 4 and 6). The estimates of the latter are large economically, four percentage points or 67%.

Panel C, on the contrary, shows paternal migration improves class-age gap and whether children receive tuition. The 2SLS estimates in columns 3-4 suggest paternal migration increases class-age gaps and the probability of whether children receive tuition by 34-37 and 49-51 percentage points, respectively, which are large economically (about 8% and 140%, respectively) and significant statistically at 1% or 0.1% level. Paternal migration also seems to decrease education spending, though the estimates are insignificant statistically.

These results indicate that the effects of parental migration are heterogenous. There seems to be no evidence of the effects of parental migration on children's education, but

analyses by gender of the migrants show it does. If the mothers work abroad and the fathers stay behind with the children, the education of the children worsens; if the fathers work abroad and the mothers take care of the children, their education improves.

3.2 Cohort Analyses

Now we do cohort analyses whose results we present in Table 6. We examine the effects of maternal and paternal migration by gender of the children (Panel A), by age group of the children (Panel B), and by education of the parents (Panel C). We also add an interactive term between *migratory status* and the group dummy to allow the effects of migration to vary by group of children. (In Panel A, for example, we add an interaction term between *migratory status* and an indicator of whether a child is a girl, which would allow migration to affect boys and girls differently.) Each column in each panel shows the 2SLS estimates of a regression of a dependent variable listed in the top row on an independent variable listed in the left column and a set of control variables like those in the basic specifications. Columns 1-3 are for maternal migration; columns 4-6 paternal migration. We do not present the effects of migration on education spending for brevity because all of the estimates are insignificant statistically.

<Insert Table 6 here>

The main effects of maternal and paternal migration are similar to those in the basic results, both in terms of magnitude, sign, and statistical significance; they are also similar across the three specifications in Table 5. Maternal migration worsens children's education; paternal migration improves it. Maternal migration lowers enrolment rates and the probability of receiving tuition by 15-16 and 14-16 percentage points,

respectively; paternal migration increases enrolment rates, class-age gaps, and the probability of receiving tuition by 10-11, 26-30, and 43-48 percentage points respectively.

There is also some evidence that not only boys have better educational outcomes on average, they also gain more from migration (Panel A): Girls are a few percentage points less likely to enroll and receive tuition, though there seems to be no significant difference between boys and girls in terms of class-age gap (row 1). The effects of migration are also smaller for girls except the effects of paternal migration on enrolment status and the effects of maternal migration on class-age gap, though the latter is insignificant statistically (row 3).

There is also some evidence that younger children have better enrolment rates and gain more from migration (Panel B). The estimate of the former (row 4) are significant statistically while those of the latter (row 6) are significant except for the effects of maternal migration on class-age gap and the probability of receiving tuition.

Children of the more educated parents do better on average, but those of the less educated parents seem to gain more from migration (Panel C). The estimates in row 7 are all negative and significant statistically; the estimates in row 9 are significant statistically except the effects of paternal migration on enrolment rates and class-age gap.

3.3 Discussions

We discuss some mechanisms through which parental migration affects the migrants' children's education and why the effects of maternal and paternal migration differ.

One, when women emigrate to work, their older children, especially girls, have to do household chores and take care of the younger siblings, which reduce the amount of time these older children spend to study and make them more likely to drop out of schools. Jayaweera et al. (2002), for example, find that migrant women's children in Sri Lanka drop out of schools not only to do household work, but also to enter the labour market. McKenzie and Rapoport (2011) find similar results in Mexico: Parental migration lowers the enrolment rates of 16-18 years old girls and 12-18 years old boys. Our cohort analyses also support this mechanism. Estimates in Table 6 show the adverse effects of maternal migration on enrolment status are larger for girls and older children. Moreover, the age profile of female migrants from Sri Lanka fits this story: Our data show women on average emigrate when they are 37 years old and their eldest children are 12-13 years old.

Two, women are perhaps thriftier: They finance the education of their children and shun sin goods such as cigarettes and alcoholic beverages more than men do. In her study on migrant households in a rural village in Sri Lanka, Gamburd (2004) finds some evidence that support this mechanism. Athuada and Fernando (2002) also find fathers in migrant households in Sri Lanka are more likely to smoke, drink alcohol, and use drugs compared to those in households in which the mothers work in the local labour market or stay at home. We do not find paternal migration increases the budget share of

education spending (Table 5), though this is partly because we exclude children who drop out of schools in the education spending regressions. But, we do find the budget share of alcoholic drinks and cigarettes in food spending increases by four and two percentage points, respectively, when women emigrate and the husbands stay at home in Sri Lanka; when men emigrate and the wives take care of the children, the budget share of cigarettes in food spending decreases by four or five percentage points.⁸

Three, children perhaps miss their mothers more than they do their fathers so that maternal migration harm children psychologically more than paternal migration does. Save the Children (2006), for example, finds that, in two of the largest migrant source districts in Sri Lanka, about 20% of migrant women's children have temper tantrums after their mothers left; 10% of the children below the age of 15 show signs of disobedience; and 4% of the migrant women's school-age children (6-17 year olds) lack interests in school. While these are not necessarily the effects of maternal migration, they do suggest that maternal migration, because the absence of their mothers at home, worsens the educational outcomes of the migrant women's children.

Four, migrant women have lower paying jobs overseas and do not enjoy protection from abuse and exploitation. More than 90% of migrant women from Sri Lanka emigrate to the Middle Eastern and North African (MENA) countries where reports of abuse, non-payment of wages, and violations of labour and human rights are rampant (Gamburd,

⁸ The estimates of the effects of paternal migration on the budget share of alcoholic drinks in food spending are negative, but they are insignificant statistically. All other estimates are significant at least at 5% level. The results are available from the authors upon request.

2000).⁹ They work as housemaids whose monthly salaries are between US\$150-250 (Kapur, 2013; Rasooldeen, 2013).

Five, migrant women are from poorer households whose infants are more likely to have low birth weight and to grow malnourished. Athauda and Fernando (2002), for example, find children whose mothers emigrate are 1.8 times more likely to fall ill compared to children whose mother stay at home or work in the local labour market. (However, the authors note that, because they are poorer, the former may have been unhealthier before their mothers migrate.) Moreover, because their lack of savings, these poor households are more likely to borrow from moneylenders at higher interest rates to finance their migration, which depletes their remitted incomes and reduce the money they can allocate for food and shelter, not to mention on the education of their children.

4 CONCLUDING REMARKS

Parental emigration from Sri Lanka does not seem to affect the education of the migrants' children, but analyses by the migrants' gender show maternal and paternal migration do matter and they have opposite effects. When mothers migrate and the fathers stay in the home country, the children's education worsens; but when the fathers migrate and the mothers take care of the children, it improves. Maternal migration lowers the probability that children enroll in a school and they receive tuition by 22% and 50%, respectively; paternal migration raises them by 17% and 140%, respectively.

⁹ We get the share of female emigration and abuse from the Sri Lanka Bureau of Foreign Employment's Annual Statistics publications for the fifteen years from 1997-2011.

There is also some evidence that boys, younger children, and the children of the less educated parents gain more from their parents' emigration.

These results differ from Hanson and Woodruff (2003) and Mansuri (2006) who find migration improves children's education and Amuedo-Dorantes et al. (2010), Yang (2008), and others who show remittances improve children's education. Our results also differ from Antman's (2011) findings that Mexican children spend less time to study and more time to work when their fathers migrate to the US; in contrast, we find paternal migration improves children's education. Moreover, we show that maternal migration—mothers from poor households work at low paying jobs overseas with minimal protection from abuse—worsens children's education.

Our results imply the government of Sri Lanka should keep persuading MENA countries to cover informal jobs such as housemaids under their labour laws, not only to protect the migrants, but also to improve the welfare of the migrants' children. (The laws should protect housemaids from abuse and non-payment of wages; help should be also readily available when the housemaids need one.) Two, the government should also offer incentives for potential migrants to be trained as skilled workers such as cooks, babysitters, or caregiver, which offer better salaries and allow them to work in Asian countries where labour laws provide better protection. (A cooking or babysitting training is, of course, costly and poor households may not be able afford it, but moving to high-skilled jobs is perhaps the best long-term solution.) Three, the government should keep improving the domestic labour market. (If labour market in Sri Lanka grows fast, potential migrants do not have to take low-paying jobs overseas.)

One limitation of our paper is our instrumental variable does not differentiate maternal and paternal migration; we, therefore, cannot directly compare the effects of migration by gender. We also do not observe how well the children do in schools; such as, how high their marks are or whether they repeat grades (though we approximate the latter using the class-age gap). Moreover, we do not examine which of the mechanisms we suggest above are the most important mechanisms through which migration affects the migrants' children's education. . We can perhaps pursue these questions in future research.

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Table 1. Descriptive statistics by type of household

	Migrants	Female migrants	Male migrants	Non-migrants
	(1)	(2)	(3)	(4)
<i>A. Educational outcomes and child characteristics</i>				
School enrolment	0.84 (0.36)	0.78 (0.42)	0.92 (0.27)	0.84 (0.37)
Class-age gap	-4.38 (1.01)	-4.42 (1.07)	-4.32 (0.92)	-4.43 (1.01)
Receive tuition	0.39 (0.46)	0.26 (0.44)	0.58 (0.950)	0.35 (0.48)
Spending on education	0.06 (0.04)	0.06 (0.04)	0.06 (0.04)	0.06 (0.04)
Age	12.73 (3.85)	13.00 (3.87)	12.35 (3.82)	12.66 (4.01)
Girl	0.50 (0.50)	0.50 (0.50)	0.49 (0.50)	0.49 (0.50)
<i>B. Parental- and household characteristics</i>				
Mother's age	37.20 (7.15)	36.42 (7.32)	38.61 (6.61)	39.29 (7.35)
Mother's years of schooling	8.62 (2.88)	8.02 (2.76)	9.29 (2.81)	8.21 (3.22)
Father's age	42.04 (7.57)	41.60 (7.14)	42.65 (8.11)	44.27 (8.14)
Father's years of schooling	7.81 (3.44)	6.61 (3.29)	9.10 (2.96)	7.87 (3.29)
Number of children in household	1.89 (1.29)	2.00 (1.42)	1.74 (1.11)	1.52 (1.42)
Number of adults in household	2.27 (2.44)	2.32 (2.59)	2.20 (2.22)	2.11 (2.40)
Buddhist	0.52 (0.34)	0.65 (0.36)	0.32 (0.32)	0.60 (0.36)
Hindu	0.21 (0.39)	0.12 (0.33)	0.34 (0.48)	0.19 (0.40)
Muslim	0.17 (0.37)	0.13 (0.34)	0.22 (0.42)	0.12 (0.33)
Christian	0.10 (0.30)	0.10 (0.29)	0.11 (0.32)	0.08 (0.27)

Notes: Numbers in parentheses are standard deviations. The numbers of observations for columns 1-4 are 406, 240, 166, and 7346 respectively.

Table 2. First-stage regression

Dependent variable	Parental migration		Maternal migration		Paternal migration	
	(1)	(2)	(3)	(4)	(5)	(6)
Agencies	0.15*** (0.01)	0.15*** (0.01)	0.17*** (0.01)	0.17*** (0.01)	0.14*** (0.01)	0.14*** (0.01)
Other controls		✓		✓		✓
Observations	7,752	7,752	7,586	7,586	7,512	7,512
Adjusted R ²	0.24	0.28	0.22	0.28	0.25	0.29
F-statistic	22.84	19.31	22.24	18.58	24.63	19.79

Notes: The number in each cell is an estimate of the effect of *agencies* on a type of migration in the top rows: parental, maternal, or paternal migration. *Agencies* is an indicator equals one if a foreign-employment agency operated in the community and zero otherwise. Other control variables include sets of dummies for the age of the children, their gender; the age and educational attainment of their parents; their religion; the number of children in their households; and the number of adults in the household. Robust standard errors are in parentheses clustered at the community level. All regressions include district fixed effects. The asterisks *** indicate statistical significance at 0.1% level.

Table 3. Descriptive statistics by type of community

	Agencies=1 (1)	Agencies=0 (2)
<i>A. Access to facilities and migration in the past</i>		
Community are better off compared to ten years ago	0.82 (0.39)	0.86 (0.35)
Years of operation of oldest school in community	51.60 (40.57)	49.26 (35.14)
Years of operation of oldest health facility in community	30.85 (26.85)	30.74 (26.85)
Migrated internally since 1995	0.02 (0.15)	0.02 (0.13)
<i>B. Current access to facilities</i>		
Primary schools	0.58 (0.49)	0.54 (0.50)
Secondary schools	0.44 (0.50)	0.40 (0.49)
Health centres	0.42 (0.49)	0.43 (0.50)
Public health care facilities	0.15 (0.36)	0.20 (0.40)
Private health care facilities	0.32 (0.47)	0.33 (0.47)
Main roads	0.68 (0.47)	0.68 (0.47)
Post offices	0.38 (0.48)	0.42 (0.50)
Banks	0.25 (0.43)	0.28 (0.45)
Markets	0.20 (0.40)	0.23 (0.43)
Bus stops	0.29 (0.45)	0.31 (0.49)
Local administrative offices	0.93 (0.26)	0.94 (0.24)

Notes: Numbers in parentheses are standard deviations. The numbers of observations for columns 1-2 are 2,279 and 5,473, respectively.

Table 3. Descriptive statistics by type of community (continued)

	Agencies=1 (1)	Agencies=0 (2)
<i>C. Parent- and household characteristics</i>		
Father's age	43.50 (7.87)	44.20 (8.15)
Mother's age	39.02 (7.17)	39.18 (7.37)
Father's years of schooling	7.94 (3.30)	7.76 (3.27)
Mother's years of schooling	8.29 (3.21)	8.15 (3.19)
Total Number of Children in Household	1.83 (1.06)	1.78 (1.04)
Total Number of Adults in Household	2.17 (2.19)	2.28 (2.22)
Buddhist	0.61 (0.33)	0.64 (0.34)
Hindu	0.19 (0.38)	0.18 (0.42)
Muslim	0.14 (0.36)	0.10 (0.37)
Christian	0.10 (0.25)	0.11 (0.27)
<i>D. Child characteristics and educational outcomes</i>		
School enrolment	0.84 (0.37)	0.85 (0.36)
Class-age gap	4.39 (1.29)	4.30 (1.18)
Receive tuition	0.45 (0.50)	0.41 (0.56)
Spending on education	0.06 (0.11)	0.06 (0.09)
Age	12.34 (3.91)	12.15 (3.91)
Girl	0.49 (0.50)	0.49 (0.50)

Notes: Numbers in parentheses are standard deviations. The numbers of observations for columns 1-2 are 2,279 and 5,473, respectively.

Table 4. The effects of parental migration on school enrolment

		OLS		2SLS	
		(1)	(2)	(3)	(4)
Parental migration	(1)	-0.01 (0.03)	-0.004 (0.03)	-0.06 (0.05)	-0.05 (0.04)
Maternal migration	(2)	-0.08* (0.04)	-0.07* (0.04)	-0.19*** (0.05)	-0.17*** (0.05)
Paternal migration	(3)	0.10*** (0.03)	0.09*** (0.03)	0.15** (0.05)	0.13** (0.05)
Other controls			✓		✓

Notes: The number in each cell is an estimate of the effects of a type of migration listed on the left column on school enrolment. *Parental*, *maternal*, and *paternal migration* are indicators equal one if the parent, mother or father of a child is a migrant and zero otherwise. Other control variables include sets of dummies for the age of the children, their gender; the age and educational attainment of their parents; their religion; the number of children in their households; and number of adults in the household. The numbers of observations for rows 1-3 are 7,752, 7,586, and 7,512, respectively. Robust standard errors are in parentheses clustered at the community level. All regressions include district fixed effects. The asterisks ***, **, and * indicate statistical significance at 0.1%, 1%, and 5% levels, respectively.

Table 5. The effects of parental migration on other educational outcomes

		OLS		2SLS	
		(1)	(2)	(3)	(4)
A. Parental migration					
Class-age gap	(1)	0.09 (0.08)	0.10 (0.07)	0.01 (0.1)	0.01 (0.1)
Receive tuition	(2)	0.02 (0.04)	0.02 (0.04)	0.14 (0.07)	0.13 (0.07)
Spending on education	(3)	0.01 (0.01)	0.01 (0.01)	-0.03 (0.02)	-0.02 (0.03)
B. Maternal migration					
Class-age gap	(4)	-0.01 (0.08)	-0.02 (0.09)	-0.27 (0.15)	-0.26 (0.17)
Receive tuition	(5)	-0.09* (0.04)	-0.08* (0.04)	-0.18** (0.07)	-0.17** (0.07)
Spending on education	(6)	-0.01 (0.01)	-0.01 (0.02)	-0.04 (0.02)	-0.04 (0.03)
C. Paternal migration					
Class-age gap	(7)	0.15** (0.06)	0.12* (0.06)	0.37** (0.14)	0.34** (0.14)
Receive tuition	(8)	0.16*** (0.04)	0.15** (0.05)	0.51*** (0.07)	0.49*** (0.08)
Spending on education	(9)	0.02* (0.01)	0.02* (0.01)	-0.02 (0.02)	-0.02 (0.02)
Other controls			✓		✓

Notes: The number in each cell is an estimate of the effects of a type of migration listed as panel headings on an educational outcome: class-age gap, receive tuition and spending on education. *Parental*, *maternal*, and *paternal migration* are indicators equal one if the parent, mother or father of a child is a migrant and zero otherwise. Other control variables include sets of dummies for the age of the children, their gender; the age and educational attainment of their parents; their religion; the number of children in their households; and number of adults in the household. The numbers of observations for rows 1-3, 4-6, 7-9 are 6,512, 6,374, and 6,085, respectively. Robust standard errors are in parentheses clustered at the community level. All regressions include district fixed effects. The asterisks ***, **, and * indicate statistical significance at 0.1%, 1%, and 5% levels, respectively.

Table 6. Cohort analysis

Dependent variable	Maternal migration			Paternal migration			
	School enrolment	Class-age gap	Receive tuition	School enrolment	Class-age gap	Receive tuition	
	(1)	(2)	(3)	(4)	(5)	(6)	
A. Gender of child							
Girl	(1)	-0.03** (0.01)	0.02 (0.04)	-0.04* (0.02)	-0.04* (0.02)	0.02 (0.04)	-0.05** (0.02)
Migration	(2)	-0.15** (0.05)	-0.24 (0.16)	-0.16** (0.06)	0.11* (0.05)	0.30* (0.14)	0.48*** (0.09)
Girl*Migration	(3)	-0.02* (0.01)	0.06 (0.08)	-0.08* (0.04)	0.04** (0.01)	-0.02* (0.1)	-0.09** (0.03)
B. Age of child							
Older child	(4)	-0.08*** (0.02)	-0.23* (0.12)	0.02* (0.01)	-0.07*** (0.02)	-0.20* (0.10)	0.02* (0.01)
Migration	(5)	-0.16*** (0.05)	-0.22 (0.18)	-0.14* (0.06)	0.10* (0.05)	0.29* (0.14)	0.43*** (0.08)
Older child*Migration	(6)	-0.05** (0.02)	0.04 (0.04)	0.04 (0.03)	-0.03* (0.02)	-0.10* (0.05)	-0.09 (0.08)
C. Parent's education							
Less educated parent	(7)	-0.01*** (0.00)	-0.05*** (0.00)	-0.04*** (0.00)	-0.01*** (0.00)	-0.04*** (0.00)	-0.04*** (0.00)
Migration	(8)	-0.16*** (0.05)	-0.23 (0.18)	-0.15* (0.07)	0.11* (0.05)	0.26* (0.13)	0.44*** (0.08)
Less educated parent*Migration	(9)	-0.03* (0.02)	0.02* (0.01)	0.02* (0.01)	-0.01 (0.02)	0.02 (0.02)	0.03** (0.01)

Notes: The number in each cell is an estimate of the effects of a type of migration, maternal or paternal migration, on an educational outcome. *Maternal* and *paternal migration* are indicators equal one if the mother or father of a child is a migrant and zero otherwise. We define *older child* equals one if a child is 15-18 years old and *less educated parent* equals one if the parents have eight years of schooling or less. Other control variables include sets of dummies for the age of the children (except for panel B regressions), their gender (except for panel A regressions); the age and educational attainment of their parents (except for panel C regressions); their religion; the number of children in their households; and the number of adults in the household. The number of observations for column one is 7,586, columns two and three 6,374, column four 7,512, and columns five and six 6,085. Robust standard errors are in parentheses clustered at the community level. All regressions include district fixed effects. The asterisks ***, **, and * indicate statistical significance at 0.1%, 1%, and 5% levels, respectively.