"International Migration and Gender Discrimination among Children Left Behind"

Francisca M. Antman*

University of Colorado at Boulder

ABSTRACT:

This paper considers how international migration of the head of household affects the allocation

of resources toward boys relative to girls within households remaining in the home country. I

address the endogeneity of migration with a differences-in-differences style regression model

that compares those households in which migrants have already returned home with those in

which migrants are still away.   The evidence suggests that while the head of household is away

a greater fraction of resources are spent on girls relative to boys, but upon his return, this pattern

is reversed.

In many developing countries, parental migration and the family separation it entails are often viewed as necessary evils in order to improve outcomes for the next generation. But the effect of parental migration on children left behind is not so clear-cut, in part because the positive effect of remittances may be overwhelmed by the negative effects of parental absence from the home. To address this ambiguity, there is now a burgeoning literature evaluating the overall impact of parental migration on children's outcomes (Gordon Hanson and Christopher Woodruff, 2003; David McKenzie and Hillel Rapoport, 2006), with some studies pointing to more harmful effects for boys (Francisca M. Antman, 2010a) and in some cases positive effects for girls (Antman, 2010b). The mechanisms underlying these effects, however, remain largely open for debate. This paper attempts to close that gap by providing evidence suggestive of a potentially important channel through which parental migration may affect children: spousal control over the intrahousehold allocation of resources. In countries like Mexico where men are far more likely to migrate, migration of the head of household typically implies a father's absence from the home and thereby allows for an increase in women's decision-making power. How does this affect the allocation of resources spent on boys versus girls?

Several studies have found that increasing woman's bargaining power results in an improvement for girls' health outcomes and not boys (Esther Duflo 2003, Duncan Thomas 1994). Antman (2010b) presents evidence consistent with this story in which a father's migration to the U.S. increases educational attainment for his daughters, but not his sons. This paper builds on evidence from the latter paper by examining expenditures explicitly, thereby establishing a mechanism whereby parental migration may affect gender discrimination directly. At the same time, it provides an important link between the literature on intrahousehold allocations and the effects of migration and parental absence on children.

Estimation is not entirely straightforward, however, because identifying the effects of migration on intrahousehold allocations is plagued by endogeneity. Quite simply, parental migration is very likely to be correlated with the same things that determine intrahousehold allocations, for instance if a family that sends migrants abroad is also likely to spend less on girls. To address this, I adopt an identification strategy inspired by differences-in-differences, where I focus on the set of families in which household heads have all had recent U.S. migration experience and compare those in which the heads have already returned to Mexico with those in which the heads are still in the U.S. Consistent with the spousal control hypothesis, I find that households which still have a head in the U.S. devote a lower fraction of resources to boys. To address concerns that return migration to Mexico may be endogenous as well, Antman (2010c) looks at changes in household expenditures over the panel survey to examine whether changes in intrahousehold expenditures can be attributed to international migration and a shifting of decision-making power from men toward women. The results are robust to this critique and similar to those presented here. To further investigate the mechanism behind these results, Antman (2010c) examines household decision-making data and finds that a household head that has recently returned from the U.S. is more likely to report that he alone make decisions regarding children's expenses, marking an evident increase in his decision-making power. Taken together with the results presented here, this evidence is consistent with a story in which the head's decision-making power wanes while he is away resulting in a shift in resources toward girls. Upon the head's return, however, his bargaining power rises, inducing a relative increase in resources for boys over girls.

I. Empirical strategy

As discussed above, the main empirical problem faced here is one of endogeneity. Mexican migrants self-select and migration can be expected to be correlated with unobserved factors affecting household expenditures. However, if we can look within the sample of families where household heads have all had recent migration experience, we can in some sense control for the unobserved factors which may have induced migration and may well be correlated with household expenditures. The idea then, is to compare families where the head is still absent in the U.S. with those families in which the migrant head has already returned home. This type of differences-in-differences strategy can be implemented by means of a simple cross-sectional regression model where the fraction of expenditures spent on boys is a function of the migration experience and current migrant status of the head of household:

(1) $BoysExpRatio_{it} = \beta_1 USMigExper_{it} + \beta_2 USMigExper_{it} * CurrUSMig_{it} + \mathbf{X}_{it}\gamma + \varepsilon_{it}.$

The dependent variable, $BoysExpRatio_{it}$, denotes the fraction of children's expenditures spent on boys, either in education or clothing. $USMigExper_{it}$ is an indicator variable for whether the household head has had any U.S. migration experience in the two years prior to the survey, regardless of whether he is currently in the U.S. or Mexico. $CurrUSMig_{it}$ is an indicator variable equal to one if the household head is currently in the U.S. and zero otherwise. As noted in the data section below, all household heads that are currently in the U.S. by definition have recent migration experience and are coded accordingly. The vector of covariates, $\mathbf{X}_{it}$, includes the number of children in the household falling into the following gender and age-specific categories: girls 0-5 years-old, girls 6-12 years-old, girls 13-17 years-old, and the analogous categories for boys. In addition, household size also enters linearly in the regression. This cross-

sectional regression is implemented on a panel data set, and as such, I have included the time subscript over the two waves of the survey (t = 1, 2). Since most households are observed in both waves, I also include an indicator for whether the observation is in the second wave of the survey and cluster standard errors at the household level.

The idea behind the identification strategy in the above regression model is that households may differ due to the endogeneity of out-migration, but comparing households who have had recent migration experience reduces this problem. However, it may be that return migration to Mexico is endogenous as well and that those households in which migrants have returned to Mexico by the time of the survey are different in unobservable ways that may also explain their differences in expenditures by gender. To address this concern, Antman (2010c) exploits the panel nature of the MXFLS and runs the above regression in first-differences. The idea there is that by looking at changes in the same household over time, we can control for time-invariant factors at the household level which affect both out- and return migration and which may be correlated with household expenditures by gender.   Further work will address robustness to sources of endogeneity that vary over time.

II. Data Description & Summary Statistics

The data used here come from the 2002 and 2005 waves of the Mexican Family Life Survey (MXFLS), a collaborative project managed by researchers in Mexico and the United States.[1] The MXFLS was designed to be a nationally representative panel data set of Mexicans that would follow households regardless of their decisions to reside in Mexico or the U.S. As noted

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[1] The MXFLS is publicly available at http://www.ennvih-mxfls.org/.

above, Antman (2010c) extends the analysis to take advantage of the longitudinal design of the survey and finds results similar to those presented here.

For purposes of the current study, the MXFLS asks respondents detailed questions about income, expenditures, labor supply, schooling choices, and both short- and long-term migration histories. Unfortunately, temporary migration spells lasting less than one year are only documented for the two years immediately prior to the survey. For this reason, the measure of recent migration experience used in this paper is limited to migration experience in the U.S. taking place within the last two years, regardless of duration. In addition to migration histories, for all household members in Mexico at the time of the baseline survey, the follow-up survey indicates whether they are in the U.S. in the second wave. These migrants make up those observations defined as currently in the U.S. Since these migrants would have had to undertake migration in the interim period between waves, they are also defined as having had recent migration experience, but are distinguished by the fact that they have not returned to Mexico.

The main outcome variables of interest relate to the fraction of children's educational and clothing expenditures spent on boys. With regard to educational expenses, the survey reports the amount of money spent during the current school period on (1) enrollment, fees, and exams, (2) school utensils and uniforms, and (3) transportation, separately for boys and girls in the household. I add (1) through (3) for boys and girls separately, and then add these sums together to construct total children's educational expenditures. I then take the ratio of boys' educational expenditures over total children's educational expenditures to construct the boys' educational

expenditure ratio.[2] I follow a similar procedure to construct the boys' clothing expenditure ratio

based on survey data regarding the amount of money spent on clothes and shoes, as well as the

value of home production for these goods, for boys and girls separately over the past three

months. Expenditures on school uniforms are explicitly excluded from the clothing measure and

included as educational expenses.

Table 1: Cross-sectional Means by Head's US Migration Experience and Head's Current Location

	(1) No Recent Exper. Not in US Mean	(2) Recent Exper. Not in US Mean	(3) Recent Exper. In US Mean
Boys' Clothing Exp./Kids' Clothing Exp.	0.51	0.65	0.36
	0.40	0.35[A]	0.34[B]
Kids' Total Clothing Expenditures	519.76	568.38	568.35
	508.08	522.70	604.77
Boys' Education Exp./Kids' Edu. Exp.	0.52	0.59	0.43
	0.40	0.41	0.37[C]
Kids' Total Educational Expenditures	2240	2024	940
	3651	3725	784.13[D]
Number of Observations	4342	59	28

Standard deviation below mean.
[A] Difference between columns (1) & (2) is statistically significant at 1% level
[B] Difference between columns (2) & (3) is statistically significant at 1% level
[C] Difference between columns (2) & (3) is statistically significant at 10% level
[D] Difference between columns (2) & (3) is statistically significant at 5% level

An increase in the expenditure ratios implies an increase in the fraction of expenditures spent

on boys and conversely, a decrease in the ratio implies an increase in the fraction spent on girls.

The ratios will equal zero if nothing is spent on boys, which would be the case if there were no

boys in the household on which to spend. To address the concern that this might affect the

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[2] All expenditure and income data are deflated using the average annual Mexican CPI and are
reported in 2002 Mexican pesos. The CPI data are available from the *Banco de Mexico* at
http://dgcnesyp.inegi.org.mx/cgi-win/bdieintsi.exe/CPreIQY#.

results, in the regressions below I control for the age composition of children in the household as well as household size. Notably, these outcome variables will be undefined whenever the household reports no expenditures on either girls or boys. I leave these as missing values, and many families do in fact have missing values for either clothing or educational expenses, resulting in a considerable drop in the usable sample when households with missing values for both variables are dropped.

Table 2: Head's Migration and Gender Discrimination Cross-Sectional Regressions

Dependent Variable: Expenditures on Boys as Fraction of Total Kids Expenditures[a]

	(1) Clothing	(2) Education
Head: Any Recent Migration Experience	0.12	0.058
	[0.033]***	[0.041]
Head: Currently in US[b]	-0.205	-0.079
	[0.065]***	[0.069]
Observations	4429	4429

Robust standard errors, clustered at household level in brackets
Additional control variables: indicators for boy-girl composition by age group, household size, survey wave indicator
* significant at 10%; ** significant at 5%; *** significant at 1%
Sample excludes missing values on both clothing and educational expenditures
[a]Includes value of home production, if any, in numerator and denominator, where relevant
[b]By definition, any migrant that is currently in the U.S. also has recent migration experience

Table 1 presents descriptive statistics that highlight the identification strategy used below. While some may be concerned about the relatively small number of observations on which identification rests in this relatively small sample, Antman (2010c) shows that results are similar when using the considerably larger samples with non-missing observations in either clothing or educational expenditures. The latter paper also shows that households in which heads have all had recent migration experience, but that differ in whether the head is still away, are generally similar in other demographic characteristics. As shown above, however, expenditure patterns

differ significantly across the two groups. Namely, it appears that households in which the head is still away spend a much smaller fraction of clothing expenditures on sons relative to daughters. This is most striking because the total clothing expenditures on children do not differ across the groups based on migration status. A similar pattern is true for educational expenditures, although total educational expenditures in households where heads are away are significantly smaller. Overall, the summary statistics follow the same pattern across the three groups. Namely, the fraction of resources spent on boys appears to fall while the head is in the U.S. (column 3 versus column 1), but rises once he returns to Mexico (column 2 versus column 1).

III. Results

Table 2 presents the cross-sectional regression results from estimating equation (1) with the educational and clothing expenditure ratios as dependent variables. The first column presents the results with boys' clothing expenditure ratio as the dependent variable and column (2) lists the results when boys' educational expenditure ratio is used as the dependent variable. While the coefficient estimates are only statistically significant for the clothing results, the same pattern emerges for both expenditure measures. First, households in which the head has had recent U.S. migration experience but where the head has returned home exhibit an increase in the fraction of expenditures going to boys relative to households with no such experience. In the clothing regression this amounts to an increase of about 12 percentage points. Second, households in which the head is currently in the U.S. (and by definition has had recent migration experience) direct a smaller fraction of resources toward boys. In the clothing regression, this amounts to a drop of about 8 percentage points (-.205 + .12) if the head is still in the U.S. Given that the average clothing expenditure ratio is about 0.51 for the reference households with no recent U.S.

migration experience, these represent sizable changes in the fraction of resources going toward boys relative to girls as a consequence of migration.

IV. Conclusion

This paper has presented evidence on the relationship between international migration and gender discrimination in the allocation of household resources. The cross-sectional regressions presented here point to a pattern of shifting resources toward girls while the household head migrates to the U.S., but shifting resources back to boys once he has returned. These trends are consistent with a story in which international migration increases the decision-making power of women while the household head is away, and women subsequently shift resources to girls. Once the head returns, however, he appears to compensate for his absence by increasing resources even more for his sons. The analysis of the data on decision-making power in Antman (2010c) corroborate this hypothesis, showing the head is more likely to report that he alone makes decisions regarding his children's expenses when he has recently returned from a migration trip.

These results suggest a critical link between international migration and gender discrimination within the household through the medium of spousal control over resources. Consequently, it presents an important connection between research into the effects of parental migration and parental absence on children and the literature on intrahousehold allocations. Given the extraordinary levels of migration between Mexico and the U.S., further research should investigate this relationship and evaluate the relative importance of spousal control as a mechanism in determining human capital and gender inequality for the next generation.

REFERENCES

Antman, Francisca M. 2010a. "The Intergenerational Effects of Paternal Migration on Schooling and Work: What Can We Learn from Children's Time Allocations?" *Journal of Development Economics*. http://dx.doi.org/10.1016/j.jdeveco.2010.11.002

Antman, Francisca M. 2010b. "Gender, Educational Attainment, and the Impact of Parental Migration on Children Left Behind." Department of Economics, University of Colorado at Boulder Department of Economics Working Paper No. 08-02.

Antman, Francisca M. 2010c. "International Migration, Spousal Control, and Gender Discrimination in the Allocation of Household Resources." University of Colorado at Boulder Department of Economics Working Paper No. 10-15.

Duflo, Esther. 2003. "Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa." *The World Bank Economic Review,* 17(1): 1-25.

Hanson, Gordon H. and Christopher Woodruff. 2003. "Emigration and Educational Attainment in Mexico." Mimeo. University of California, San Diego.

McKenzie, David and Hillel Rapoport. 2006. "Can Migration Reduce Educational Attainments? Evidence from Mexico." World Bank Policy Research Working Paper No. 3952.

Thomas, Duncan. 1994. "Like Father, Like Son; Like Mother, Like Daughter: Parental Resources and Child Height." *The Journal of Human Resources*, 29(4): 950-988.