Paper 1: Does Parental Migration During Childhood Affect Children's Lifetime Educational Attainment? Evidence From Mexico

- Data
  - Employed a retrospective life history data from the Mexican Migration Project to link adult children's educational attainment with their parents' first US migrations that occurred during childhood
  - Since 1987, the MMP has collected random household samples in 4-6 Mexican communities with 27,274 households in 170 communities as of 2018
    - It captures areas responsible for sending 90% of Mexican migrants to the US
    - This dataset includes detailed demographic information about household heads, spouses, and nonresident children of the household head
      - Can identify years of schooling and the highest level of education completed by resident and nonresident adult children of household heads
  - Sample was restricted to children of the household head that was at least 20 years old at the time of the survey and born after 1964 and before 2003 (due to decline in Mexican migration to the US)
    - Included children whose parents migrated up to most recently 2003
- Variables
  - Educational Attainment
    - Total years of schooling [Completion of lower-secondary (9 years), Entry into upper-secondary school (10 years), Completion of upper-secondary school (12 years)]
      - With the structural reforms to education in Mexico, completing upper-secondary school (grades 10-12) was nonmandatory and then required tuition payments
      - Advancement beyond lower-secondary school (9 years of schooling) is a valuable market of educational mobility among children with less-educated parents
  - Parental Migration
    - Childhood is defined as between ages 0-14
    - Parental migration is based on the year of initial departure of the household head
      - Only focus on household head since spouse was not necessarily linked to being parent of the children

        - So if the household head migrated while the child was between 0-14 years old, they are a migrant-child (treatment group), else they are considered nonmigrant children (household head never migrated, migrated before child was born, migrated after child was 15) (control group)
- Methodology
    - Connecting adult child to household heads' retrospective life history, creating a panels describing each respondents' yearly household context during childhood with a dataset of 587,330 child-years
    - Dropped migrant years other than before the year of departure of household head to connect childhood context before parental departure leaving a sample of 548,124 child-years
        - The corresponding control group was attained by propensity score matching (PSM) to compare each migrant child-year with the most similar nonmigrant child-year based on the migrant child's childhood context
    - PSM has a three-stage design to identify appropriate counterfactuals (control group)
        1. Estimated a logistic regression model to determine the probability of exposure to treatment (parental migration)
            - These results are used to generate predicted probabilities of exposure to treatment
        2. The PSM then matches each treated observation to the control observation with the closest propensity score
            - Ensures that each migrant child matches against a single nonmigrant child-year rather than all 15 child-years that were available for each nonmigrant child
        3. Defined the average treatment effect on the treated (ATT) as the difference in educational attainment between the treated and control observations averaged across the entire matched samples
            - The ATT captures the net impact of parental migration on children's lifetime educational attainment among migrant children, making it the target outcome of interest
                - This is the average difference between the educational attainment of migrant children and their "nearest neighbor" nonmigrant children
- Results
    - Multivariable Models
        - These models estimate the association between parental migration and children's educational attainment in adulthood
            - The first controlled for time-invariant demographic characteristics of children and their household heads
            - The second incorporated community fixed effects

        - Both models revealed a weak positive association between parental migration and the completion of lower-secondary school
            - They also showed a modest negative association between parental migration and continued education into and through upper-secondary school
        - These cross-sectional analyses highlight an ambiguous association between parental migration and children's educational attainment
    - PSM Results: Full Sample
        - Parental migration was associated with 0.45 additional years of schooling and a 7 percentage point higher probability of lower-secondary school completion
        - Parental migration also predicted an increased likelihood of entry into (2.97%) and completion of (2.88%) upper-secondary school
        - Thus, there is evidence of a substantial positive effect of parental migration during childhood on children's educational attainment in adulthood
    - PSM Results by Parental Education, Rural/Urban Residence, and Migration Prevalence
        - Parental Education
            - Parental migration during childhood was associated with substantial absolute and proportional increases in lifetime educational attainment among children whose parents did not complete primary school (<6 years of schooling)
                - Predicted 0.49 years more schooling and a 7.5 percentage point (18%) increase in the probability of completing lower-secondary school as well as higher rates of matriculation into and completion of upper-secondary school (20% increase)
            - There was little evidence of a relationship between parental migration and the educational attainment among children whose parents finished primary school
                - Only the ATT for lower-secondary school was statistically significant
        - Rural/Urban Residence
            - There were large positive ATTs among children in rural areas (significant for all educational outcomes)
                - Parental migration during childhood increased the probability of entry into upper-secondary school by 20% and its completion by 22%
            - Little evidence of relationship in the case of children from urban areas
            - These stratified results show that parental migration during childhood increases lifetime educational attainment among children in more socioeconomically disadvantaged households

and communities while it is unrelated to their more privileged counterparts

- Migration Prevalence
    - There is a strong effect of parental migration on educational attainment in low-prevalence communities and little to no effect in high prevalence communities
        - In low prevalence communities
            - Increased likelihood of entering upper-secondary school (23%) and completing it (25%)
    - These results suggest that the educational benefits associated with parental migration may be offset in communities with established cultures of migration where children often aspire to follow in their parents' footsteps rather than pursue higher education

Paper 2: International migration, remittances, and schooling: evidence from El Salvador

- Data
  - The 1997 National Household Survey covers 8,387 families
    - The study focuses on the schooling attendance and family characteristics of individuals aged 6-24 (40% of the population)
      - The sample is a cross-section of 14,286 individuals in this age range
  - The survey data provides information on housing conditions, age, schooling, income, and labor force status of family members, the number of household members who are living abroad, and the value of remittances sent by expatriates
- Methodology
  - This study uses the Cox proportional hazard model to estimate the impact of characteristics of the individual and the family on the hazard of dropping out of school
    - The hazard framework was used since it requires that the researchers choose one of two possible outcomes for each individual in the sample
      - The individual is either enrolled in school ("right-censored") or not ("failed")
      - Since their cross-section has no information on enrollment behavior, they have no choice but to treat every individual who is not enrolled on the day of the survey as if they have failed
    - The Cox proportional hazard model has useful features:
      - It exploits all the available information in observations that are right-censored
      - It yields an estimate of the underlying baseline hazard function (identifying the grade levels where dropout rates are concentrated)
      - It also models the determinants of never enrolling in school and appropriately distinguishes never enrolling in school at all from the hazard of failing
- Results
  - There is a significant and large effect of income from remittances
    - In urban areas, the median remittance (875 colones) reduces the hazard that a child will never enroll in school or will drop out between 1st-6th grade by 54%
      - For grades 7-12, the impact is 27% evaluated at the median remittance amount
    - The effect of remittances is, at its smallest, 10 times the size of the effect of other income
  - Urban/Rural effects

- In rural areas, the median remittance lowers the child's entire baseline hazard of leaving school by 14%
- The effect of remittances is, at its smallest, 2.6 times higher than the effect of other income
    - This is likely since, in rural households, income from remittances is a better proxy for permanent income than other income and may explain the difference in estimated effects or that remittances have a higher propensity to spend on their children's schooling out of remitted funds than other funds
- Remittances in urban areas have no effect on the hazard of leaving school after controlling for the amount of the remittance
    - In rural households, children have a 24% lower hazard probably because in rural areas, the source of income matters less than in urban areas but the mere existence of remittances as an income source tends to reduce the hazard of leaving school
    - But the effect on the hazard of the median remittance in urban areas is greater for children in urban than in rural households lowering it by 54% below the 7th grade and 27% beyond the 6th grade than the 25% at all grade levels in rural areas

Paper 3: The Impact of Parents' Overseas Employment on Educational Outcomes of Filipino Children

- Data
  - The data of the study is from the Survey of Households and Children of Overseas Contract Workers conducted in 1999 with respondents including children (10-21 years old) from 4 OFW-sending areas (Manila, Davao, Iloilo City, and Pangasinan)
    - The study was conducted only in urban settings so the results will only reflect the experiences of children in urban areas
    - The study also limited the children to those aged 19-21 since at the age of 19, all those who are going to complete high school would have done so, while most of those who are going to college would have begun
  - Parents as migrants were coded depending on if they had left prior to the schooling outcome that had occurred and who specifically had migrated:
    - 1– Mother had been oversees before the outcome
    - 2– Father had been overseas before the outcome
    - 3– Both parents had been overseas before the outcome
    - 4– Both biological parents were at home
  - The sample of 2,346 respondents is broken down as such:
    - 1– 1,218 (51.9%)
    - 2– 506 (21.6%)
    - 3– 549 (23.1%)
    - 4– 73 (3.1%)
  - The education indicators were:
    1. Number of years of completed schooling
    2. Completed high school (assumed to be 10 years of completed schooling)
    3. Obtained some form of college education
  - The study controlled for: parents' education, number of siblings, gender of the child, household wealth index
- Methodology
  - Logistic regressions for education outcomes 2 and 3 meanwhile OLS was used for outcome 1
- Results
  - Number of years of completed schooling
    - Based on parent migration status:
      - There is a slightly positive effect of mother's migration status
      - There is a negative and significant effect of both parents having migrated on male children

        - None of the variables tested were significant for daughters' years of schooling
- Obtaining some college education
    - Having one or both parents overseas has no effect on the odds of the child attending college
    - The original positive bivariate association disappears with other variables controlled for
- Finishing high school
    - Having one or both parents overseas has no effect on the odds of the child attending college with other variables controlled for

Paper 4: Parental Absence and Children's School Enrolment

- Data
  - The study uses the baseline dataset of the Kanchanaburi Demographic Surveillance System (KBDSS)
    - It is an ongoing database including demographic, health, social and economic data on the population in 100 villages and communities in rural, urban, and semi-urban areas
  - To measure parental living status in the household at different time points, three first rounds of the available dataset from Round 1 (2000) to Round 3 (2002) were used to predict the enrolment of children in Round 4 (2003)
  - 4 Category Dependent variable: Combination of school enrollment and migration status of children at the time of Round 4 census (2003)
    - 1– Enrolled in school and stayed in the place of origin
    - 2– Enrolled in school and moved out
    - 3– Not enrolled in school and stayed
    - 4– Not enrolled and moved out
  - Key Independent Variables: Parents' living statuses between Round 1 and 3
    - 1– Never been absent
    - 2– Absent one year or less
    - 3– Absent 1<x<2 years
    - 4– Absent >2 years
  - Controls
    - Child's age, gender, living in an extended household (living with members other than parents or siblings), living in a household that also uses non-Thai languages, household's economic status, whether the child received remittances from migrants, and whether the household head had finished more than primary school education
- Methodology
  - Employs a multinomial logistic regression model
    - Since the dependent variable has four outcomes, three equations for the log-odds of an outcome relative to the reference category are estimated in a multinomial logit model. When:

$P1$ = probability of enrolled and stayed
$P2$ = probability of enrolled and moved
$P3$ = probability of not enrolled and stayed
$P4$ = probability of not enrolled and moved

When not enrolled and moved is the reference category, the three logits are:

$$\text{logit 1: } \ln P1/P4 = \beta' X_{i,1/4} + \alpha_{1/4}$$
$$\text{logit 2: } \ln P2/P4 = \beta' X_{i,2/4} + \alpha_{2/4}$$
$$\text{logit 3: } \ln P3/P4 = \beta' X_{i,3/4} + \alpha_{3/4}$$

- Results
  - There are two models (one with all independent variables and controls while the other excludes the extended household variable since it would have a strong correlation to the presence of father/mother)
    - In model 1, it appears that the absence of the father for one year or less has a negative effect on a child's probability of being enrolled
      - Compared to a child whose father did not move, the log odds of a child whose father is absent for one year or less is reduced by about 56%
    - Similarly, having a mother absent for 2 or more years decreases a child's log odds of being enrolled by 49%
  - These results suggests that the length of absence of fathers and mothers matters differently
    - While a father's short-term absence reduced the child's enrolment odds, a long-term absence does not
    - Contrastingly, the mother's absence must be 2 or more years to have a negative impact on the child's enrolment odds

Paper 5: Remittances, Liquidity Constraints and Human Capital Investments in Ecuador

- Data
  - Study employs a nationally representative living standard household survey for Ecuador from 2005-2006– Encuesta Condiciones de Vida-Quinta Ronda (ECV)
    - Covers a wide range of socio-economic indicators for households and individuals, including school enrolment and work activities
  - The survey includes 55,666 individuals from 13,581 households and is representative at the province level
    - Analysis is restricted to children of school-going age and in the age group for whom information on labor market participation is collected in the survey
      - Thus the sample is composed of 8,600 children of age 10-17, of which 14% live in a household that receives remittances
- Methodology
  - The IV Probit approach that was used takes a linear specification for the first stage regression, and shows that the instruments are jointly significant at 1% level
  - Dependent Variable: Probability of being enrolled in school
  - Explanatory Variable: Absolute amount of monthly per capita remittances received by households
  - Controls: child's age and gender, household head's gender and marital status, education level of highest educated males and females, household size, living conditions
- Results
  - Remittances increase schooling, especially girls, rural children, and poor children
  - A $1 increase in remittances per month leads to a 0.09 percentage point increase in the enrollment rate
    - Extrapolating this would suggest that, on average, remittances increase enrollment by 2.59 percentage points while the effect on girls, rural children, and poor children is larger
    - But there is no significant effect for the non-poor
      - This suggests that investments in human resources among the poor are bound by resource constraints

Paper 6: Can migration reduce educational attainment? Evidence from Mexico

- Data
  - This paper uses data from the 1997 Encuesta Nacional de la Dinámica Demográfica conducted by Mexico's national statistical agency in the last quarter of 1997
    - This is a nationally representative demographic survey with 2,000 households surveyed in each state resulting in a total sample of 73,412 households
      - The study is restricted to rural communities and thus the sample is composed of 20,388 children aged 12-18 living in 12,980 households
  - Migrant Household
    - A child lives in a migrant household if the household has a member aged 19 or older who has ever been to the USA to work or who has moved to the USA in the last 5 years for any other reason
      - The migrant member/s could have returned or still be in the USA at the time of the survey
  - Education
    - Mainly measured by years of schooling attained by children and adults
      - Elementary education is compulsory in Mexico and is normally provided to children aged 6-14 years old
      - Despite education being compulsory, there is still far from complete compliance and a lack of infrastructure in some remote rural areas
- Methodology
  - Use IV-ordered probit and IV-censored ordered probit estimates on effect of migration on class attendance
    - In the first stage, a household migrant status is regressed on the instrument and exogenous regressors
    - The fitted values and residuals from the first stage are then both included in the censored ordered probit model estimated in the second stage
  - Use OLS and 2SLS on Years of schooling / educational attainment on top of the aforementioned IV-ordered probit, Censored ordered probit estimates, and the IV-censored ordered probit
- Results
  - Attendance
    - Shows a significant, small, and negative effect of being in a migrant household on school attendance of boys
      - Conversely, there is an insignificant effect for attendance of girls

        - With the inclusion of the migration instrument, these effects become larger with being in a migrant household to reduce your odds of attending school by 16 percentage points for 12-15 year old boys, 21 percentage points for 16-18 year old boys, and 20 percentage points for 16-18 year old girls
    - Years of Schooling Attained
        - OLS model finds a positive association with migration and attained years of schooling
            - 2SLS all show a negative impact for migration on schooling with the effect being significant for 16-18 year old male and female children
        - These two models highlight unobserved characteristics that make them more likely to receive schooling than observationally similar children in nonmigrant households
        - The IV-ordered probit and IV-censored order probit results show negative impact of migration on education of males aged 12-15 is significant compared to the 2SLS specification
            - The significance level increases for the negative impact on males and females aged 16-18 years old
            - Censoring shows stronger negative impact among the 12-15 year olds compared to 16-18 year olds

Table 3 The impact of migration on years of education attained

	(1) OLS	(2) 2SLS	(3) Ordered probit	(4) IV-ordered probit	(5) Censored ordered probit	(6) IV-censored ordered probit
Panel A: males	0.151	−0.438	0.013	−0.362	−0.037	−0.512
aged 12 to 15 child is in a migrant household	(2.13)**	(1.41)	(0.30)	(2.24)**	(0.55)	(2.20)***
Observations	6451	6451	6451	6451	3226	3226
Panel B: males	0.151	−1.366	0.041	−0.613	−0.012	−0.653
aged 16 to 18 child is in a migrant household	(1.34)	(1.99)**	(0.87)	(2.92)***	(0.16)	(2.81)***
Observations	4094	4094	4094	4094	2047	2047
Panel C: females	0.272	−0.225	0.125	−0.205	0.126	−0.307
aged 12 to 15 child is in a migrant household	(3.36)***	(0.77)	(2.78)***	(1.34)	(1.53)	(1.04)
Observations	6107	6107	6107	6107	3053	3053
Panel D: females	0.338	−1.443	0.098	−0.663	0.037	−0.824
aged 16 to 18 child is in a migrant household	(2.75)***	(2.21)**	(1.92)	(2.83)***	(0.48)	(3.26)***
Observations	3,431	3,431	3,431	3,431	1,716	1,716

Robust *t* statistics in parentheses clustered at the state level
Instrument is the 1924 state-level migration rate
All regressions also include the same control variables as Table 2 (child and state characteristics)
Censored ordered probit regressions are carried out on a 50% random sample and use school attendance as censoring variable
*Significant at 10%; **significant at 5%; ***significant at 1%

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Paper 7: International Migration and the Education of Children: Evidence from Lima, Peru

- Data
  - The study uses a household survey that was collected as part of the Latin American Migration Project
    - The sample is reduced by 1% after removal of ineligible sampling units, deceased individuals, and observations with incomplete data as well as considering children aged 15-20 yielding amounting to 414 children from 288 households and children aged 15-18 amounting to 268 children from 216 household
  - Two dependent variables are derived: Number of completed years of schooling and whether or not the number of completed years is indicative of some form of disruption of normal educational progress / grade delay (highest grade completed)
  - Migration is measured by the instrumental variable of past migration from the household rather than remittance receipts
- Methodology
  - Two stage estimation procedure
    - First stage predicts the risk of migration for each household based on migration event histories
      - To estimate the risk, the study uses event history data and conduct a survival analysis for the first migration observed from the surveyed household
    - The second stage uses this estimate of risk to predict educational attainment
  - Hierarchical regression models are estimated with random effects for both the household and area of residence
- Results
  - 15-18 year old children
    - Migration of a household member tends to inhibit children's education
      - A 1% increase in the household hazard ratio of migrating entails a reduction of almost 0.9 years of schooling
  - 15-20 year old children
    - Migration is not significant despite a negative parameter estimate that is non-trivial in magnitude

Paper 8: Emigration and Educational Attainment in Mexico

- Data
  - The data employed is a 10% subsample of the 2000 Mexico Census of Population and Housing
    - The census provides data on members of a household who reside abroad
    - The sample is limited to:
      - 10-15 year old age group
      - Rural areas
      - Children of the household head
      - Households with a male head and a female spouse or a female head only
      - The mother must have less than 12 years of education
- Methodology
  - $S_{ghi} = \beta X_{ghi} + \theta Z_{ghi} + \varepsilon_{ghi}$
    - For child g, in household h, and region i:
      - S_{ghi} – the number of school grades completed
      - X_{ghi} – a vector of characteristics describing family resource constraints and potential returns to education for the child (age of child, ability to speak indigenous language, child's disability status, age and education of mother, household wealth, local labor-market conditions)
      - Z_{ghi} – a vector of characteristics describing family structure (number of children, whether the mother is married, and whether the household head is married)
    - OLS and IV regressions were used
- Results
  - OLS
    - There is a positive correlation between educational attainment and whether a household has an external migrant
      - A household having an external migrant is associated with no more than 0.09 extra years of schooling for girls or 0.1 extra years of schooling for boys
    - The coefficient on receiving remittances from the US is positive and precisely estimated
    - Based on the education of their mothers, in households that has a US migrant, children whose mothers have ___ years of education
      - 0-2 years– is associated with an extra 0.23 years of schooling for girls and 0.18-0.26 years of schooling for boys

        - 3+ years– not associated with any increase in accumulated schooling
        - Thus, external migration only appears to matter for educational attainment in families with parents that have very low education levels
- IV
    - The instruments are rates of migration to the US for Mexican states over the period of 1955-1959 interacted with age, education, and other characteristics of the mother
    - The coefficient estimate on having a US migrant is positive, very precisely estimated and much larger than the corresponding coefficient in OLS
    - Migration to the US is associated with an extra 0.9 years of education for 10-12 year old girls and an extra 0.7 years for 13-15 year old girls, but only for girls whose mothers have less than 3 years of education
        - For 10-12 year old boys, the coefficient on having a US migrant is positive and statistically significant but they reject the overidentifying restrictions for this regression

Paper 9: School enrollment effects in a South-South migration context

- Data
  - Two waves (1998 and 2001) of a nationally representative panel dataset from Nicaragua's Encuesta Nacional de Hogares Sobre Medición de Nivel de Vida (EMNV) are analyzed in this investigation
  - 3 Outcome variables
    - School enrollment
      - Short- to medium-term decision to keep a child in school
      - Binomial variable
    - School attendance
      - Immediate need to keep children out of school
      - Number of days a student was absent in the last month
    - Grade for age progression
      - Longer-term indicator of education disruption
      - $\frac{Current\ grade\ level}{Current\ age - Age\ of\ school\ enrolment} \times 100$
  - Primary predictor variable: Parental migration from Nicaragua to Costa Rica either 12 months prior to 1998 or 2001
  - Controls: years of schooling (none, primary, secondary), number of household children, relative household wealth, household asset index, hurricane Mitch
- Methodology
  - A fixed effects modeling strategy is used to handle potential endogeneity
    - School enrollment used a logistic fixed effect statistical model
    - School attendance used a Poisson fixed effects statistical model
    - Grade for age outcome used a linear fixed effects statistical model
- Results
  - Parental migration has a negative effect on school enrollment but does not influence school attendance or grade for age progression
    - Parental migration equates to a 154 percentage point decrease in the probability of school enrollment

Paper 10: The effect of parental labor migration on children's educational progress in rural china

- Data
  - The study makes use of the 1995 China Living Standards Survey which collects the information on basic demographics, schooling, housing, income and remittances from the household head of rural farm households
- Results
  - OLS
    - Having one or both parents migrate to work outside the township for 6 months per year or more is associated with a lag in grade-level attainment of 0.3 years for boys and 0.5 for girls
  - Step-wise regression models using an ordinary and instrumental variables probit specification
    - Migration's impact on the probability of boys being at least one grade-level behind is 3.4 percentage points (4.7%) but not statistically significant
    - For girls, the effect is much larger at 9.3 percentage points (12.6%)
      - After instrumenting the effect does not meet the conventional criteria for statistical significance, it increases to 27.5 percentage points or 37.4%
  - Linear probability models on a discrete measure of whether the child attended school in the prior year
    - Parental labor migration had no impact on girls and reduced the likelihood of attendance for boys (insignificant findings)