

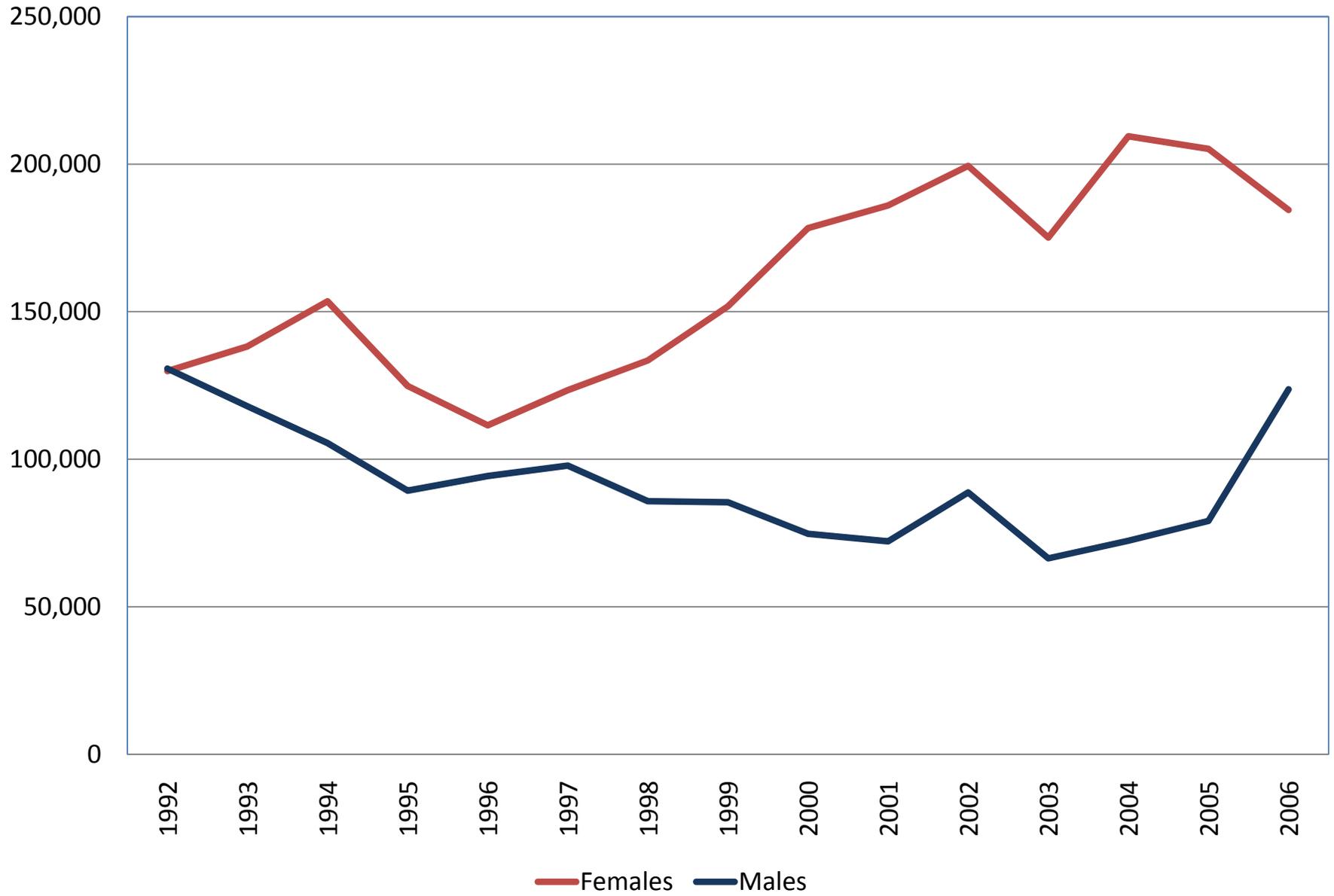
The Feminization of International Migration and its effects on the Families Left behind: Evidence from the Philippines

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New Hires of OFWs by Gender



Motivation

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- Millions of children in the developing world are growing up with at least one parent living abroad:
 - A UNDP study in Ecuador found that 218 000 girls and boys -about 3 percent - had at least one parent abroad.
 - Bryant (2005) estimates that 2-3 % of Indonesian and Thai children have been left behind by a parent.
 - 1 million Sri Lankan children are left behind by their mothers
 - An estimated 170 000 children in Romania have one or both parents working abroad (NYT).
- The numbers in the Philippines are even more striking:
 - Close to 10 % of the country's labor force is working abroad as temporary migrants.
 - An estimated 3-5 million Filipino children with a parent living abroad

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- Most parents migrate to provide for their children economically
 - In the Philippines, left behind children are not the poorest of the poor prior to migration; most are fed on a daily basis and attend public schools.
 - Parents seek: quality health care, good schooling, home ownership, start a business.
- However, the mental, emotional, and physical wellbeing of children depends not only on resources, but also on parental care.
 - Anecdotal evidence suggests that many children left behind are growing up under serious emotional strain.
 - A survey by SMC (2000) to 700 children shows that compared to their classmates, the children of migrant workers performed particularly poorly in school, and were more likely to express confusion, anger and apathy.

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- Gender composition of temporary migrants patterns in the Philippines and other countries has shifted from majority males to majority females:
 - Whereas in the 1970s women formed about 15 % of the Filipino migrant labor force, in 2005, 70 % of new hires of migrant workers were female
- Increased concern for negative effects of migration on the children left behind:
 - Gender roles are still very strong in the Philippines → migration of mothers is a much larger disruption in a child's life
 - Families of migrant fathers: children are cared by their mothers, whose husbands earn a salary sufficient to support a stay-at-home mother,
 - Fathers of children with migrant mothers rarely become primary care givers. Instead, children are mostly under the care of extended kin, usually aunts and grandmothers.

Research Question

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- If and how does female migration have a differential effect on the wellbeing of the Filipino children left behind
- Main outcome is school performance, as measured by the probability of lagging behind
- Important question:
 - Expands understanding of the role of parental time investments in the human capital accumulation of children
 - Provides policy makers with valuable information about the consequences of their migration policies and might also help provide better support services for the left behind

Empirical Strategy

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- Use two control groups: (1) children with migrant fathers and (2) children in non-migrant hhlds. Explore age patterns.
- For (1) we exploit demand shocks as a exogenous source of variation that affects the probability that the mother decides to work abroad:
 - Philippines' migration flows are gender specific and highly channelized between local areas and foreign destinations (networks)
 - Economic shocks, changes in immigration laws, and even epidemics such as SARS in HK should affect the propensity to female migration differently by local area.
- For (2) we use OLS, but consider selection. Also use FE models.

Preview of the Results

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- Children of migrant mothers are between 12-35 pp (1/3-1 std dev) more likely to be at least a grade behind the standard given their age, when compared to children with migrant fathers.
- Differential effect is not fully explained by differences in remittance behavior
- OLS results suggest that compared with children with non-migrant parents, children 8-11 with migrant mothers are more likely to be lagging behind
- Result likely causal, given that selection should go in the opposite direction.
- Effect becomes positive and the migrant father effect becomes much larger when we study older children, suggesting that at older ages remittances play a larger role in education and migration has a positive net effect.

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Education Production Function

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- Assume that education (S) is produced using two inputs: economic resources (R) and parental time (T):

$$S(R, T) \quad (1)$$

- Given this production function parental migration (M) affects the level of education as follows:

$$\frac{\partial S}{\partial M} = \frac{\partial S}{\partial R} * \frac{\partial R}{\partial M} + \frac{\partial S}{\partial T} * \frac{\partial T}{\partial M} \quad (2)$$

- Assume $\frac{\partial R}{\partial M} > 0$ and $\frac{\partial T}{\partial M} < 0$

Comparisons

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- Migrant Mothers vs. Migrant Fathers (gender orthogonal)
 - $\frac{\partial R}{\partial M_{mm}} < \frac{\partial R}{\partial M_{fm}}$
 - $\left| \frac{\partial T}{\partial M_{mm}} \right| > \left| \frac{\partial T}{\partial M_{fm}} \right|$
 - We should expect children of migrant mothers to be unambiguously worse than children of migrant fathers
 - The comparison with children living with both parents is ambiguous
- Age Patterns
 - $\frac{\partial S}{\partial R_{younger}} < \frac{\partial S}{\partial R_{older}}$
 - Arguably, $\frac{\partial S}{\partial T_{younger}} > \frac{\partial S}{\partial T_{older}}$
 - Then $\frac{\partial S}{\partial M_{younger}} < \frac{\partial S}{\partial M_{older}}$

Selection

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Assuming parents want to maximize (1) and no heterogeneity in (1)

- Compared to non-migrant families:
 - Migrants have larger $\frac{\partial R}{\partial M}$ and smaller $|\frac{\partial T}{\partial M}|$
 - Positive Selection
- Less clear pattern for Migrant Mothers vs. Migrant Fathers

Economic and demographic household characteristics (including migration status of members):

- 100 % 1990, 1995 and 2000 Census, main advantage: size, 80 million obs. per year (waiting for the 2007 to be available)
- Survey of Overseas Filipinos 1993-2002: supplement of labor force survey, much smaller but more detailed information of migration experience
- Family Income and Expenditure Survey 1991, 1994, 2000: Used to construct region level controls

Migration Flows by place of origin and gender

- Confidential data on all legal migrants 2004-2007 provided by the Philippines Overseas Employment Administration (POEA). We use it to construct the instruments.

Table 1. Characteristics of Migrants vs. Non-migrants: Census Data

	Women				Men			
	1990		2000		1990		2000	
	OFW	Not OFW						
Share of Sample	1.1		2.1		1.7		2.3	
Age	30.9	31.8	31.8	32.5	35.0	31.8	35.2	32.6
Single	49.9	28.7	40.4	27.7	21.9	35.7	24.3	34.9
Married	44.3	66.7	48.5	61.0	76.9	62.5	70.2	56.5
Widowed	2.8	3.2	2.9	2.9	0.4	1.0	0.7	1.0
Divorced/Separated	2.7	1.1	3.6	1.6	0.5	0.5	0.9	0.9
Other (Live-in partner)	0.2	0.3	2.7	5.9	0.1	0.2	2.9	5.9
Head or Spouse	34.5	63.9	39.1	63.2	64.3	58.5	60.4	58.2
Dummy for Child 0-18	37.4	57.0	36.8	54.8	67.2	54.7	58.7	52.5
Dummy for Child 0-2	6.6	26.2	8.2	21.8	21.9	26.7	18.6	22.1
Dummy for Child 3-5	12.0	24.9	10.7	22.4	25.9	25.2	20.4	22.5
Dummy for Child 6-12	25.2	35.1	21.6	33.1	43.1	34.4	35.0	32.3
Dummy for Child 13-18	17.4	23.6	17.6	23.2	26.9	21.8	24.7	21.6
Primary school	12.5	43.2	14.3	31.0	9.9	43.8	10.3	34.8
Some high school	7.6	12.5	11.4	15.0	6.1	13.2	7.7	15.5
High school grad	24.7	16.8	23.4	20.0	23.1	18.7	17.1	19.6
Some college	17.9	12.7	27.3	18.0	21.5	13.5	36.1	17.9
College degree +	36.7	14.3	20.9	13.6	38.7	10.4	26.1	10.0
No. Observations	13,868,637		18,233,839		13,848,183		18,490,077	

Women and men ages 18-54

Children's variables only available for women that can be potentially matched with children based on the relationship to head classification.

Table 2. Children's Characteristics by Parents' Migration Status

	1990			2000		
	Neither	Mother	Father	Neither	Mother	Father
Share	97.78	0.6	1.54	97.05	0.97	1.7
Child: Relationship to Head (Child)	94.61	85.58	95.15	94.12	86.92	94.75
Age	12.99	12.88	12.82	13.02	13.29	13.03
Male	0.52	0.52	0.51	0.52	0.52	0.51
Lagging in School	0.42	0.19	0.14	0.31	0.18	0.13
Household: Size	7.15	6.55	6.75	6.85	6.20	6.28
Number of females 25-60	1.31	1.44	1.39	1.28	1.39	1.33
Number of Siblings	4.27	3.47	3.67	3.97	3.23	3.32
Age of youngest sibling	6.93	8.70	7.65	7.30	9.38	8.19
Age of oldest sibling	15.43	15.02	14.99	15.32	15.24	15.03
Mother's Age	40.67	38.01	39.19	40.81	39.17	40.28
Mother Some College +	0.14	0.37	0.39	0.19	0.38	0.50
Father's Age	40.67	38.01	39.19	40.81	39.17	40.28
Father Some College +	0.14	0.37	0.39	0.19	0.38	0.50

Source: Census Data

Table 3. Descriptive Statistics from SOF - Migrant Mothers vs. Migrant Fathers

	Migrant Mother		Migrant Father		Year dummies		Full controls	
	Mean	Std. Dev	Mean	Std. Dev	Diff	p-value	Diff	p-value
Share 93/94	0.306		0.721					
Share 02/03	0.404		0.629					
Age	39.39	6.06	42.93	6.28	-3.545	0.178		
Less than HS	0.13	0.34	0.08	0.27	0.059	0.007		
HS Grad	0.33	0.47	0.29	0.45	0.042	0.017		
Some College	0.22	0.42	0.30	0.46	-0.075	0.008		
College Plus	0.20	0.40	0.26	0.44	-0.065	0.020		
Has Returned	0.19	0.39	0.25	0.43	-0.051	0.012		
Times left	1.93	1.93	2.87	2.44	-0.960	0.083		
Intended months to stay	29.19	21.22	22.49	20.22	6.695	0.616		
Number of Months abroad	28.99	18.08	31.55	18.35	-3.194	0.991		
Sends Remmitances	0.74	0.44	0.80	0.40	-0.057	0.014	-0.009	0.009
Value Rem Sending (Pesos)	34,165	31,724	64,000	58,564	-30,441	2,123		
Log (Value Remmit)					-0.653	0.031	-0.466	0.053
Top Occupations	Domestic Helper	0.764	Shipmen	0.130				
	Nurses	0.043	Mechanics/Elec	0.120				
			Drivers	0.053				

Main Specification - Census Data

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$$\text{Lagging}_{ijt} = \alpha + \beta \text{MigrantMom}_{ijt} + \gamma X_{ijt} + \lambda W_{jt} + \eta_t + \pi_r + \theta R_t + \varepsilon_{ijt} \quad (3)$$

- i is for indiv, j for hhld, t for year, and r for geographic unit - province. X_{ijt} are child specific characteristics; W_{jt} are hhld level variables; η_t and π_r represent decade and province FE respectively, and R_t time-varying province characteristics.
- Sample restricted to children aged 8 to 18, who are either the offspring of the head, or her grandchildren.

Demand Shocks as Instruments

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Motivation:

- Philippines' migration flows are highly channelized between local areas and foreign destinations, a phenomenon mostly explained by the importance of social networks (SMC, 2006).
- In a 2004 survey, 67 % of people that were preparing to migrate for the first time reported knowing a friend or relative at their country of destination.
- Economic shocks, changes in immigration laws, etc. should affect the propensity to female migration differently by local area.

Demand Shocks as Instruments

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Implementation:

- Using the POEA data, we obtain the destination country distribution of migrants for each of the 78 provinces, separately by gender.
- We use two sets of instruments:
 - Top destination country dummies interacted with year fixed effects
 - Time-varying Log GDP of destination country and share of contracts to destination country longer than 2 years

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Additional controls to address OVB:

- Shocks that vary by year and by Main Island level (Luzon, Visayas or Mindanao)
- Time-varying variables defined at the level of the instrument:
 - Log of the average household monthly expenditures
 - Urbanization
 - Share of women with at least some college education.

Table 4. Migrants' Top Destinations, by Region and Gender- 2004-2007

Region	Female Migrants						Male Migrants					
	Top 1	Share	Top 2	Share	Top 3	Share	Top 1	Share	Top 2	Share	Top 3	Share
1	HK	0.25	SGP	0.17	UAE	0.08	SA	0.27	UAE	0.12	ITALY	0.11
2	HK	0.25	SGP	0.16	UAE	0.10	SA	0.28	UAE	0.13	S KOREA	0.11
3	UAE	0.17	HK	0.12	SA	0.11	SA	0.34	UAE	0.17	QATAR	0.07
4	ITALY	0.16	UAE	0.16	HK	0.11	SA	0.21	UAE	0.17	ITALY	0.13
5	UAE	0.18	HK	0.14	SA	0.13	SA	0.33	UAE	0.21	QATAR	0.09
6	HK	0.24	SGP	0.16	UAE	0.13	SA	0.35	UAE	0.18	QATAR	0.06
7	UAE	0.18	SGP	0.10	HK	0.10	SA	0.27	UAE	0.19	QATAR	0.10
8	HK	0.17	UAE	0.16	SGP	0.12	SA	0.28	UAE	0.22	QATAR	0.09
9	SA	0.37	KUWAIT	0.18	UAE	0.14	SA	0.38	MLYSIA	0.19	UAE	0.11
10	UAE	0.19	SA	0.13	KUWAIT	0.12	SA	0.38	UAE	0.15	QATAR	0.08
11	UAE	0.18	SA	0.16	JAPAN	0.13	SA	0.33	UAE	0.19	QATAR	0.06
12	SA	0.23	KUWAIT	0.18	UAE	0.15	SA	0.45	UAE	0.15	QATAR	0.08
13	SA	0.19	UAE	0.16	JAPAN	0.15	SA	0.25	UAE	0.19	QATAR	0.09
14	HK	0.32	SGP	0.10	SA	0.07	SA	0.23	S KOREA	0.12	UAE	0.10
15	SA	0.44	KUWAIT	0.19	UAE	0.18	SA	0.59	UAE	0.12	QATAR	0.09
16	UAE	0.17	KUWAIT	0.13	SA	0.13	SA	0.34	UAE	0.16	QATAR	0.08

Philippines Provinces by Female Migrants' Top Country of Destination

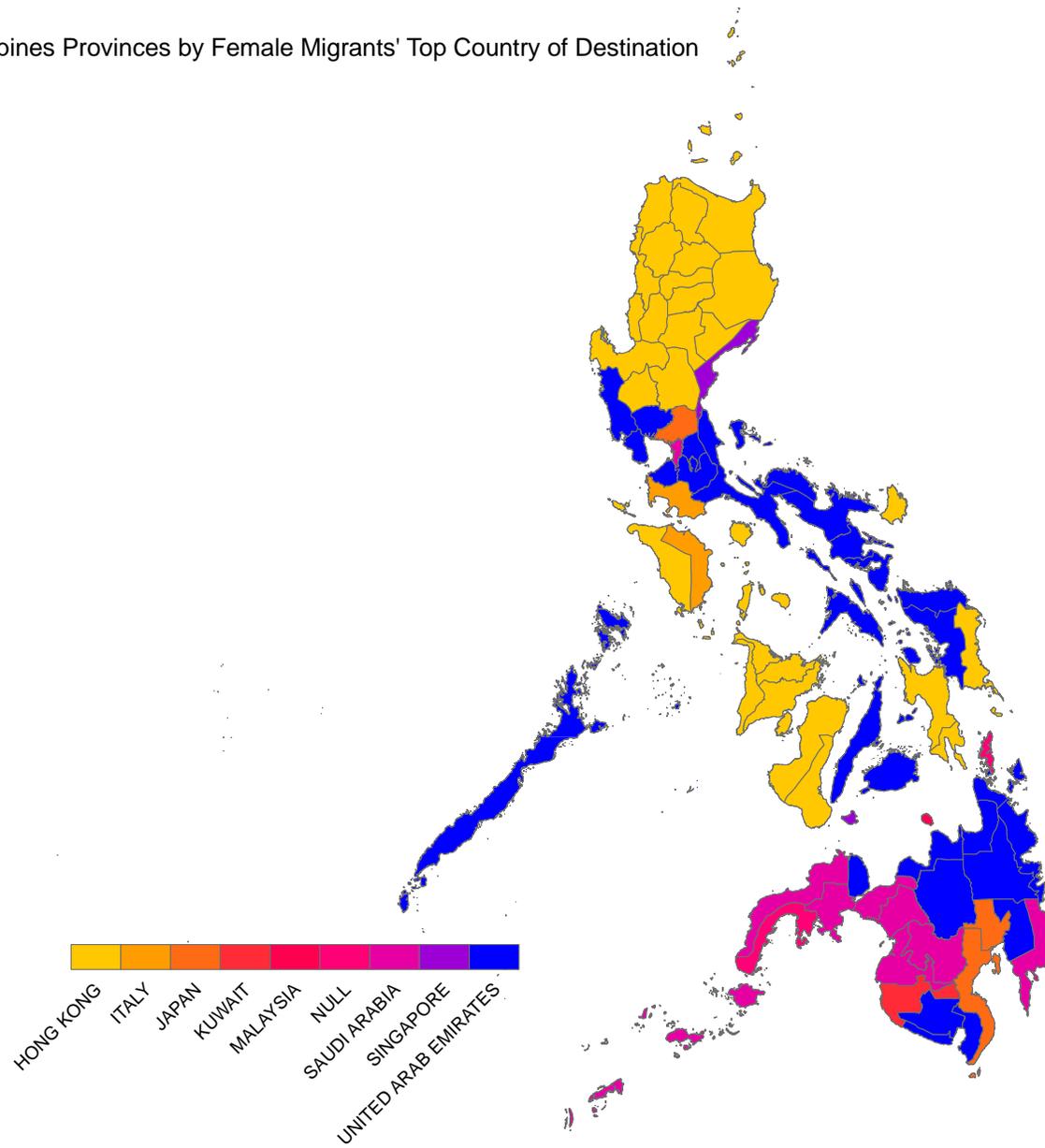


Table 5. First Stage - Sample: Children 8-18 with one migrant parent, Census Data

	Dependent Variable : Dummy for Mother OFW					
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	OLS	OLS	OLS	OLS
Log(GDP) main country of destination (Coefficient - Std. dev)	0.037 (0.007) [0.011]	0.043 (0.010) [0.010]	0.040 (0.010) [0.011]			
Share of contracts length >= 2 years (Coefficient - Std. dev)	0.019 (0.006) [0.013]	0.021 (0.007) [0.006]	0.024 (0.008) [0.008]			
Main country of destination FE * Year FE (F-statistic)				(13777) [198.6]	(8805.2) [25.5]	(838.2) [12.9]
Province FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X
Island*year FE		X	X		X	X
Province time-varying controls			X			X
Child and HHld Controls (including Cohort dummies)	X	X	X	X	X	X

Differences in Remittance Behavior or Parental Time?

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We use SOF data to estimate a specification very similar to (1) but that includes the following controls:

- A dummy for parent having sent remittances
- The log of the value of the remittances

Restrictions:

- Can only use FE instruments (No FS for Lgdp and contract length)
- Because of the SOF education level classification we can only construct a dummy variable for attending school
- Slightly different province level controls

Age Patterns using as Control Group All Children

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- Instruments does not help predict parental migration
- OLS and FE models
- Caveats: no info on length of absence, do not address potential endogeneity of timing of migration

Table 8. OLS regressions of Educational Performance on Parents' Migration Status: 25% Sample

	Ages 8-11		Age 12-14		Age 15-18	
	(1)	(2)	(3)	(4)	(5)	(6)
	All Kids	Migrant parent	All Kids	Migrant parent	All Kids	Migrant parent
Mother OFW	0.0054 (0.0025)	0.0178 (0.0022)	-0.0031 (0.0035)	0.0273 (0.0032)	-0.0145 (0.0037)	0.0444 (0.0039)
Father OFW	-0.0052 (0.0026)		-0.0215 (0.0036)		-0.0469 (0.0049)	
Child controls (including Cohort dummies)	X	X	X	X	X	X
Hhld Controls	X	X	X	X	X	X
Province FE	X	X	X	X	X	X
Region*year FE	X	X	X	X	X	X
Number of Obs.	3,785,502	112,861	2,733,612	83,309	3,034,415	91,881

Table 9. Household FE Models of Educational Performance on Parents' Migration Status by Age

	Dep. Variable: Lagging Behind in School		
	(1)	(2)	(3)
Mother OFW * Age 12-14	-0.0465 (0.004)		-0.0482 (0.004)
Mother OFW * Age 15-18	-0.0975 (0.007)		-0.1006 (0.007)
Father OFW * Age 12-14		-0.0802 (0.004)	-0.0806 (0.004)
Father OFW * Age 15-18		-0.1489 (0.005)	-0.1499 (0.005)
Household Fixed Effects	X	X	X
Child controls (including Cohort dummies)	X	X	X
Number of Obs.		6,834,298	

Conclusions and Next Steps

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- Parental migration, in general, increases educational outcomes of children
- Mother's absence more detrimental to children than father's absence
- Waiting for 2007 Census data to give more power to estimates