

Labor Migration in Indonesia and the Health of Children Left Behind

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Introduction

- Does temporary migration of parents for work affect the health of left-behind children?
- In Indonesia, mothers' migration negatively affected child health
- No such effect for fathers

Country background

- Republic of Indonesia
- Equatorial archipelago, 2 million km²
- Population 260 million, 4th most populous
- World's 16th largest economy
- GDP: 1 trillion USD (2016)
- GDP per capita: 4000 USD
- Ranked 14th among remittance recipients (World Bank 2015)
- Remittances amounted to 1% of GDP

Migration measure

- “Migrated”: moved away for the sole purpose of work
- Moves are implicitly temporary in nature
- Not considered in this study:
 - Duration of migration
 - Number of times moved and returned
 - Where moved to

Profile of internal migrants

Damayanti, A. and Susanti, H. /Internal Migration in Indonesia: ...

10

Table 1: Total Profile of Respondents and Situation on 1993, 1997, 2000 and 2007⁹

Variable	Total		1993		1997		2000		2007	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Duration	3,36	2,42	3,81	2,72	3,12	2,28	3,24	2,24	3,88	2,69
Age (migrate)	24,52	10,17	30,91	13,24	27,11	11,64	24,74	10,31	23,37	9,02
Age (return)	27,91	10,50	34,72	13,52	30,25	12,05	28,02	10,75	27,28	9,56
Distance	249,03	350,23	201,06	312,01	235,97	358,19	243,82	348,56	244,84	330,82
Education (year)										
- migrate	9,88	3,52	8,63	4,13	9,42	3,71	9,89	3,47	10,10	3,43
- return	10,22	3,60	9,05	4,19	9,75	3,78	10,25	3,57	10,49	3,54
Number of Observations	5179		1103		2530		4130		3290	

Source: IFLS 1993, 1997/98, 2000 and 2007.

Source: Susanti and Damayanti, "Internal Migration in Indonesia: Duration and Factors", 2015.

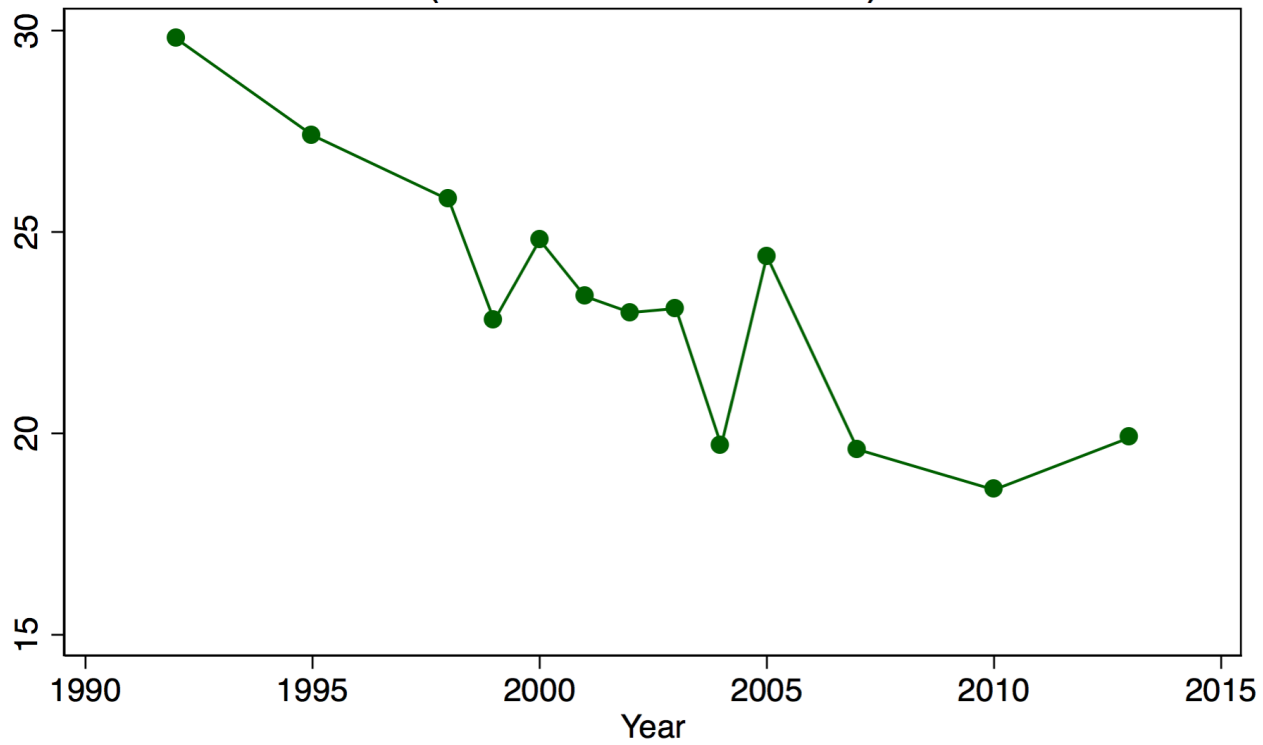
Health measure

- Anthropomorphic, not self-reported
- Height-for-age, weight-for-age
- Standardized by age/sex group
- Height-for-age Z-score (HAZ) interpretation:
 - HAZ = -1: child's height is one SD below median child height in that age/sex group
 - likewise for WAZ

HAZ and WAZ

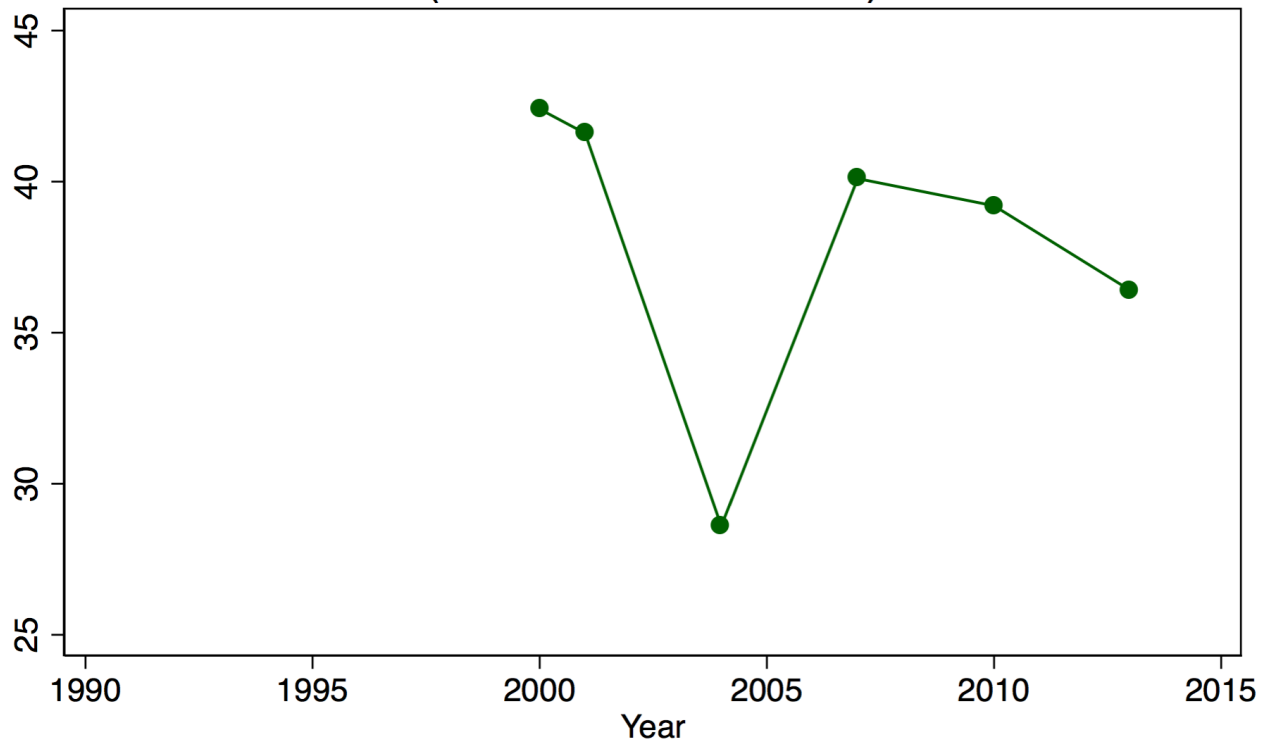
- Z-score = (observed value – median value of the reference population) / S.D. value of reference population
- Calculated using Stata module `zscore06`
- Advantages of using Z-scores:
 - linear, distance from HAZ=-2 to HAZ=-1 is the same as from HAZ=0 to HAZ=+1.
 - sex-independent

Prevalence of underweight, weight for age
(% of children under 5)



Source: World Bank Development Indicators

Prevalence of stunting, height for age (% of children under 5)



Source: World Bank Development Indicators

Sample

- Children drawn from 2000 and 2007 waves of Indonesian Family Life Survey (IFLS)
- In 2000: 0-7 years old
- In 2007: 7-14 years old
- Excluded those with HAZ or WAZ < -6 or > 6
- Final sample: 2841 children, interviewed in 2000 and re-contacted in 2007

Table 1a. Characteristics of children by migration status of parents (year 2000)

	(1) Full sample	(2) Neither parent migrated	(3) One parent migrated
HAZ	-0.65 (1.65)	-0.67 (1.63)	-0.41 (1.81)
WAZ	-1.05 (1.63)	-1.07 (1.62)	-0.92 (1.69)
Male	0.52 (0.50)	0.53 (0.50)	0.48 (0.50)
Age (years)	3.90 (2.14)	3.98 (2.13)	3.21 (2.15)
Father's years of schooling	7.78 (3.81)	7.71 (3.81)	8.41 (3.75)
Mother's years of schooling	7.28 (3.57)	7.21 (3.53)	7.93 (3.86)
Monthly household expenditure per capita	155760.60 (198183.86)	154960.55 (202018.83)	163487.31 (156480.69)
Urban	0.42 (0.49)	0.42 (0.49)	0.39 (0.49)
Observations	2841	2573	268

Sample consists of children from the 2000 wave of the Indonesian Family Life Survey.

Table 1b. Characteristics of children by migration status of parents (year 2007)

	(1) Full sample	(2) Neither parent migrated	(3) One parent migrated
HAZ	-1.21 (1.18)	-1.20 (1.18)	-1.43 (1.17)
WAZ	-1.11 (1.36)	-1.09 (1.36)	-1.36 (1.28)
Male	0.52 (0.50)	0.52 (0.50)	0.53 (0.50)
Age (years)	11.27 (2.24)	11.25 (2.24)	11.56 (2.19)
Father's years of schooling	7.52 (3.86)	7.61 (3.86)	6.43 (3.66)
Mother's years of schooling	6.98 (3.66)	7.12 (3.67)	5.01 (2.98)
Per capita monthly household expenditure (rupiah)	352422.43 (350356.01)	358573.25 (358271.27)	261259.84 (175927.17)
Urban	0.45 (0.50)	0.46 (0.50)	0.36 (0.48)
Observations	2841	2662	179

Sample consists of children from the 2007 wave of the Indonesian Family Life Survey.

IFLS

- Ongoing longitudinal household survey
- Collaboration between RAND, Universitas Gadjah Mada, and Survey METRE
- Representative of about 83% of the Indonesian population
- Five waves: 1993, 1997, 2000, 2007, 2014
- 2000 and 2007 re-contact rate: 95%

IFLS (2)

- Over 30,000 individuals living in 13 of the 27 provinces



Related research

- Deb and Seck (2009) examined effects of migration on socioeconomic outcomes including health of children in Indonesia
 - does not isolate effect of parental migration
- Parental absence found to negatively affect child cognition and school attendance in rural China (Zhang et al., 2014) and the Philippines (Poertner, 2016)
- Studies on left-behind children have tended to focus on schooling

Regression model

$$Health_{ibt} = \alpha MigrantFather_{ibt} + \beta MigrantMother_{ibt} + X_{ibt} \delta + \mu_i + \pi_h + error_{ibt}$$

- for child i in household h at time t
- two regressions, one where $Health = WAZ$ and another where $Health = HAZ$
- X : age, parents' education, HH expenditures, urban/rural
- panel data allows elimination of all time-invariant observables and unobservables

Negative impact of maternal migration

Table 3. Regression results

	(1) HAZ	(2) HAZ	(3) WAZ	(4) WAZ
Mother migrated for work	-0.49** (0.20)	-0.37* (0.20)	-0.25 (0.24)	-0.03 (0.19)
Father migrated for work	0.04 (0.15)	0.19 (0.14)	-0.05 (0.16)	0.05 (0.12)

Regressors not shown: Age, mother's and father's years of schooling, monthly HH expenditure, urban/rural residence, year dummy

Selective attrition isn't a problem

Following Fitzgerald, Gottschalk & Moffit (JHR 1998)

Table 4. Selective attrition

	Attrited in 2007
HAZ	-0.002 (0.004)
WAZ	-0.002 (0.004)

Regressors not shown: 2000 HAZ, WAZ, age, mother's and father's years of schooling, monthly HH expenditure, urban/rural residence

Conclusion

- Net effect of parental labor migration on wellbeing of left behind children is an empirical question
- IFLS evidence suggests mother's migration was bad for child health
 - lowered HAZ by 0.5 SD
- Is the effect of migration gendered?