Egyptian Men Working Abroad

Labor Supply Response of Women Left Behind

Christine Binzel & Ragui Assaad

Introduction

- Does male migration reduce female labor supply?
  - Income effect of remittances raises reservation wage
  - Reinforcement of patriarchal model
  - Possible positive substitution effect
  - Potential effect through loosening capital constraint
- Evidence of mostly negative effect on female LS
  - (Rodriguez & Tiongson 2001, Acosta 2006, Amuedo-Dorantes & Pozo 2006, Lokshin and Glinskaya 2009, Mendola & Carletto 2009)
- Anthropological data from Egypt points to rural women stepping in to replace absent male workers
- Need to distinguish between different types of women's work
- Need to distinguish between urban and rural areas

Research Objectives

- Attempt to distinguish between competing hypotheses
  - Income effect may affect participation in wage work
  - Substitution effect may affect participation in non-wage work, esp. unpaid family work
  - Compare effect in migrant households that receive or don't receive remittances
  - Impact for wives may be different than for other women in the household
- Tackling the endogeneity of migration

The Data

- Egypt Labor Market Panel Survey of 2006 (ELMPS 06)
- Nationally-representative sample of 8,349 households
- Restrict attention to LM behavior of prime-age females 20-49

	In Migrant HH	In Non-Migrant HH	Total
Rural	204	3,223	3,427
Urban	157	4,732	4,889
Total	361	7,955	8,316

- Exclusively male migration, mostly young men migrating temporarily

The Data

- Migrant Household: Household with current migrant in 2006. 6.25% in rural areas and 3.05% in urban areas.
- 33% of migrant households do not receive remittances
- Vey few non-migrant households received remittances (dropped)
- 88% percent of remittances directed to one hh member. 65% of those to wife
- Average Remittance LE 510/month in 2006 prices (~$100)
- Average monthly non-remittance related non-labor income is LE 102/month

Empirical Strategy

- Selectivity of migration
- Potential endogeneity if male migration behavior responds to women's participation decisions
- Examine both extensive margin of labor supply (participation) and intensive margin (hours)

	Non-IV	IV
Parametric	Probit Tobit	IVProbit IVTobit
Non-Parametric	PSM	Non-parametric IV

Empirical Specification

- Dependent Variable
  - Binary participation or unconditional hours of work
  - Separate models for:
    - All market work
      - Wage work
      - Non-Wage work
    - Subsistence work
- Endogenous binary regressor
  - Main Model:
    - Presence of male migrant abroad (irrespective of remittances) vs. no migrant
  - Alternative Models:
    - Presence of migrant who remits vs no migrant
    - Presence of migrant who does not remit vs. no migrant

Empirical Specification

- Controls
  - Age and age squared of the woman
  - Her education
  - Marital status
  - Number of children under 5 and 6-14 in HH
  - Presence of elderly individuals
  - Avg. monthly non-labor income of HH
  - Community level variables from 2006 Pop. Census
    - Share of men aged 18-64 working in private sector and in agriculture
    - Proportion of males 18-64 who are unemployed

Identification Strategy

- Instrumental variables excluded from labor supply equation
  - Proportion of adult males in community (village or neighborhood) who are international migrants as measured by 2006 Population Census.
    - Meant to proxy for migration networks in community
    - We argue that it is excludable from labor supply equations conditional on inclusion of other community-level characteristics
    - Will clearly work better in rural areas where social networks are more likely to be limited to confines of village

      F-Stat of IV in first stage 59.1 in rural areas and 10.4 in urban areas

Non-Parametric Models

- Non-IV model:
  - Propensity Score Matching with migration as treatment
  - All controls and IV used to estimate propensity score
  - Sensitivity analysis on matching methodology
- IV Model
  - Due to Frolich (2007)
  - Makes same exclusion restriction as parametric IV
  - Turns continuous IV into binary variable by using observation below a lower cutoff (z_{min}) and above an upper cutoff (z_{max}). Discards all observations in between
  - Ratio of two matching estimators:
    - Numerator: effect of binary instrument on outcome (labor supply)
    - Denominator: effect of binary instrument on endogenous binary regressor (migration status)

Effect of Migration (irrespective of remittances) on Participation

	Non-IV		IV	
	Probit	PSM	IV Probit	Non-Param. IV
Rural Women 20-49				
Any market work		++	+++ *	++
Wage work	--	---		
Non-wage work	++	+++	+++ *	++
Subsistence work	++	++		
Urban Women 20-49				
Any market work	-	-		
Wage work	---	---		
Non-wage work	--	-		
Subsistence work	-		+++ ***	++

---, +++ p<0.01, --, ++ p<0.05, -,+ p<0.1

* p<0.1, ** p<0.05, *** p<0.01 refers to a Wald test of exogeneity.

Effect of Migration with and without remittances on participation – Rural Women

	Non-IV		IV	
	Probit	PSM	IV Probit	Non-Param. IV
Migration with remittances				
Any market work			+++ *	++
Wage work		--		
Non-wage work			+++	
Subsistence work				
Migration without remittances				
Any market work	++	+++	+++ *	+++
Wage work	---	--		
Non-wage work	++	+++	+++ **	+++
Subsistence work	+++	+++		

---, +++ p<0.01, --, ++ p<0.05, -,+ p<0.1

* p<0.1, ** p<0.05, *** p<0.01 refers to a Wald test of exogeneity.

Conclusions

- Migration of male HH members has a positive effect on female labor supply, primarily through increases in participation in non-wage and subsistence work
- Some evidence of reduced participation in wage work, but not robust to changes in methodology
- Net effect of migration on market work is positive in rural areas and slightly negative in urban areas, where wage work plays a more important role
- Positive effect on female labor supply is much stronger for households that don't receive remittances
- When women sample is restricted to wives of migrants who remit, we continue to find positive effects on labor supply in rural areas, mostly through increases in non-wage work

Conclusions

- Bigger effect when there are no remittances implies that increase in participation is due to substitution of female labor for absent male labor rather than to increased household labor demand from a loosening of financing constraints on household enterprises
- Most migrants who don't remit are young and unmarried men, who are probably migrating to save for marriage
- All household members contribute to their ability to save, sometimes through increasing their labor inputs