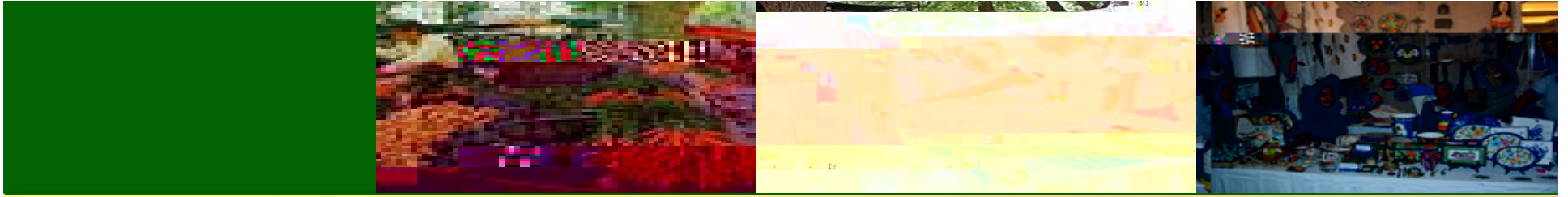




José Jorge Mora-Rivera



MOTIVATION

- Trends in International Migration
- Remittances as a significant source of income in México
- Theories of International Migration



“Classical” Models: Labor Demand Drives Migration

Model	What Determines Migration?	Impacts on Rural Economy	Policies to Reduce Migration
<i>Classical:</i> Lewis (1954)	Urban Labor Demand (given perfectly elastic supply of rural		

“Neoclassical” Models: Wages Drive Migration

Model	What Determines Migration?	Impacts on Rural Economy	Policies to Reduce Migration
<p><i>Neoclassical:</i></p> <p>Jorgensen (1967)</p>	<p>Migrate if:</p> $w_u > w_r + c$	<p>None at household level (wage is fixed), but may lead to increase in rural wages by reducing supply of rural labor; wage changes may induce labor-saving technology change.</p>	<p>NA (Labor markets will equilibrate through migration.)</p>

w_u =urban wage; w_r =rural wage; c =migration costs

Todaro Model: Expected Incomes

Model	What Determines Migration?	Impacts on Rural Economy	Policies to Reduce Migration
<p><i>Neo-Neoclassical:</i></p> <p>Todaro (1969)</p>	<p>Migrate if:</p> $p_u \bar{w}_u > p_r w_r$	<p>Same as Neoclassical; if $p_r < 1$, out-migration may reduce rural unemployment.</p>	<p>Rural (not urban) employment generation projects.</p>

$p_u(p_r)$: Probability of finding an urban (rural) job

Human capital characteristics
shape expected gains from
migration

...so wages and employment
probabilities are different for different
people

Variables Affecting Gains from Migration

- Education
- Work experience
- Migration experience
- Networks of contacts at migrant destinations
- Farm assets and other variables affecting the “opportunity cost” of migrating

New Economics of Labor Migration

(Stark (1982); Taylor and Martin (2000))

What Determines Migration?

**Lack of access to capital
and income insurance**

**Migrants act as “financial
intermediaries”**

**Missing labor markets may
discourage migration.**

New Economics of Labor Migration

Impacts on Rural Economy

Migrant remittances stimulate production by loosening capital and risk constraints on investments.

Labor lost to migration may reduce production if good substitutes for migrants' labor are not available.

New Economics of Labor Migration

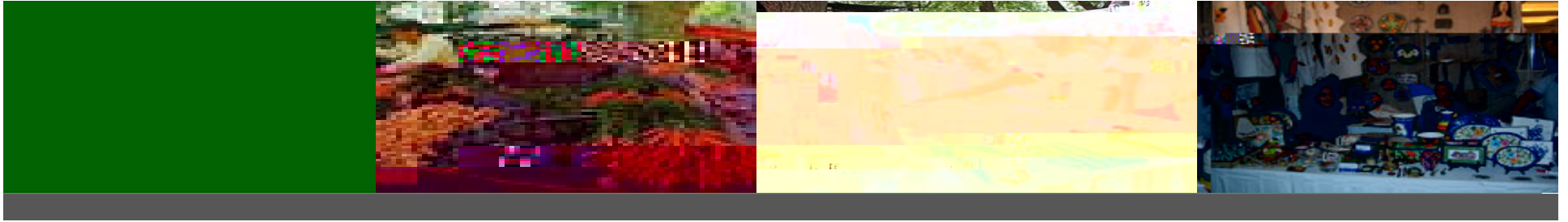
Policies to Reduce Migration

**Creation of credit and
insurance markets**

**Social security for rural
households**

**Reduction of transaction
costs in rural markets**

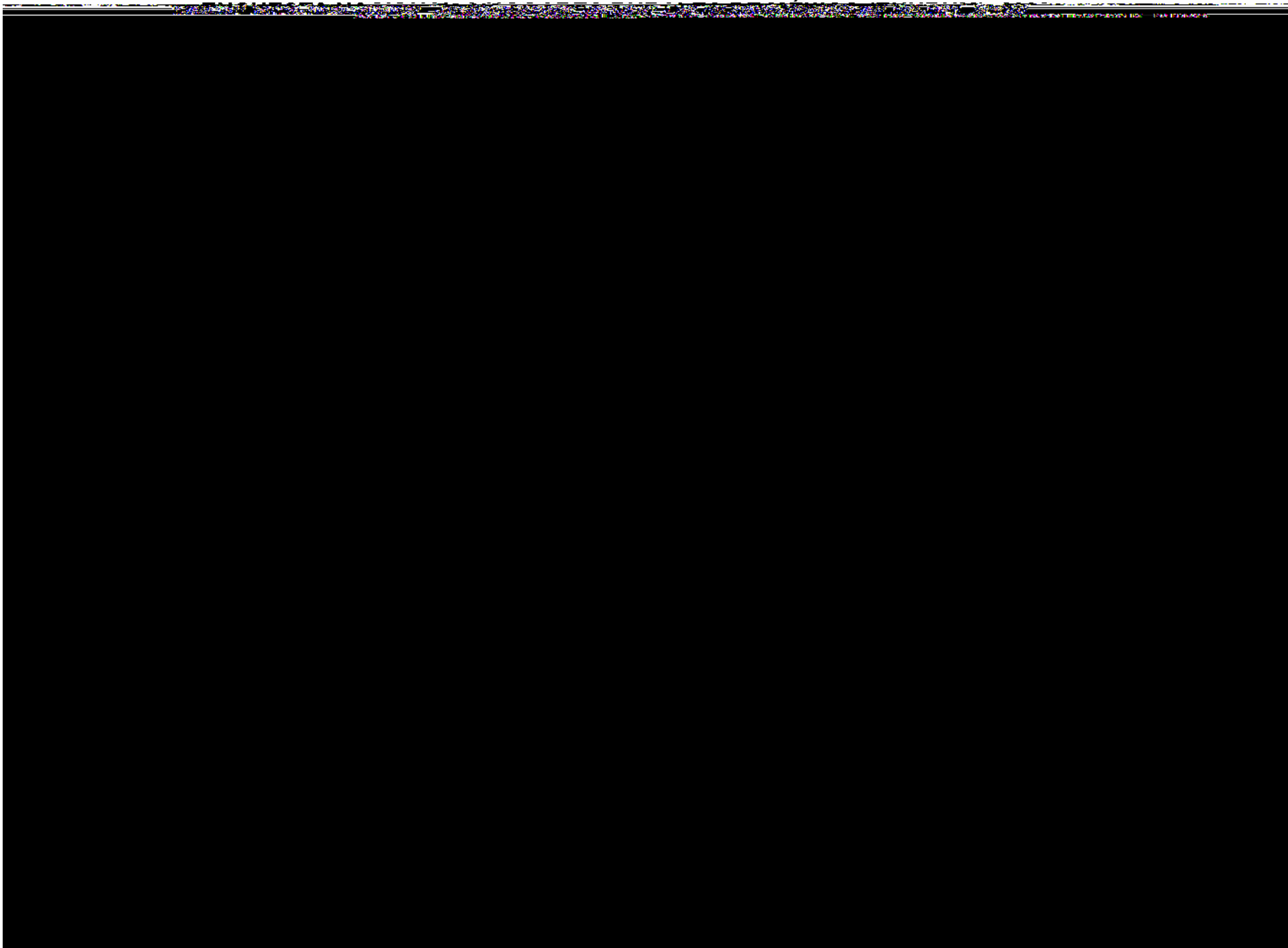


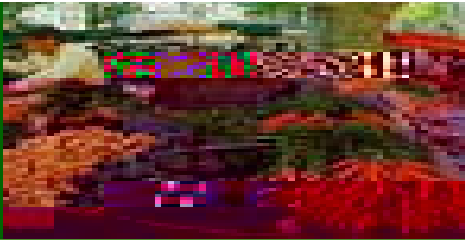
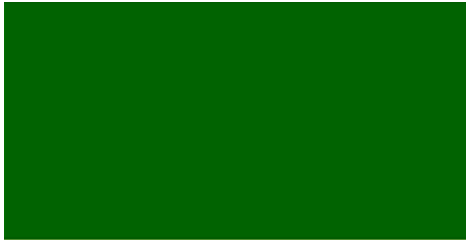


The 2003 México National Rural Household Survey

ENHRUM

ENHRUM represents the first effort to obtain detailed production, income, migration, remittances, time use and expenditure data, generalizable across the entire rural Mexican economy





Hoseholds also have low per-capita Income

Region	Household Average Income (USD)	Per-Capita Average Income (USD)	Gini Coefficient
South-South East	2740	605	0.55
Center	4828	905	0.52
Center-West	5235	978	0.49
Northeast	5435	1298	0.66
Northwest	8784	1932	0.54
<i>Total</i>	5347	1363	0.57

With high levels of inequality in assets and low levels of income, households have to diversify

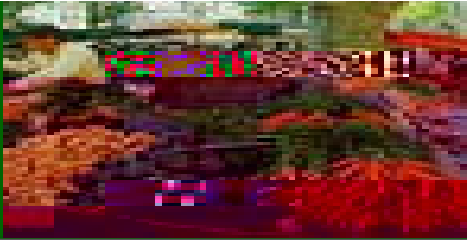
<i>Composition of Household Income</i>	Percentage of Households that practice this Activity-Income	TOTAL 5346.5 USD
Salaries and Wages	69.6%	54.1%
Agricultural	36.8%	13.0%
Non-agricultural	46.8%	41.2%
Farm Production Activities	65.7%	18.2%
Livestock (Small and Large)	54.0%	3.7%
Staples	34.4%	2.4%
Commercial Crops & Plantations	16.7%	10.0%
Other agricultural activities	20.5%	2.1%
Renewable Resource Extraction	47.5%	2.3%
Public Transfers	50.3%	4.4%
Migrant Remittances	27.4%	12.7%
Internal	13.2%	1.7%
International	16.6%	11.0%
Local non-farm activities	17.4%	8.3%
Commerce	11.5%	6.0%
Services	5.1%	2.2%
Handicrafts	1.9%	0.1%
Total		100.0%

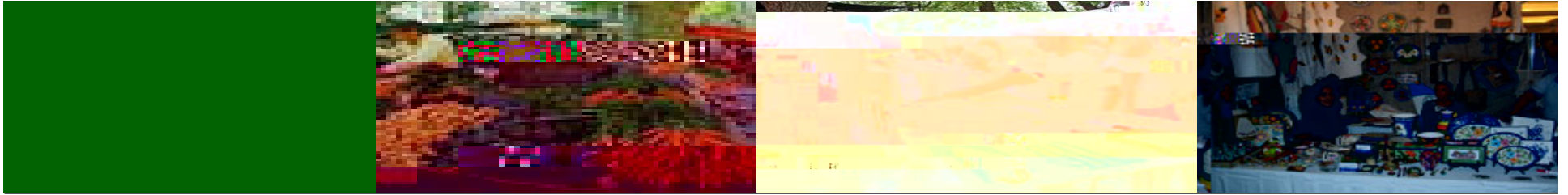




What impact did increasing migration have on Mexico's rural economies?

- Two modeling methods were used
 - Analysis of income inequality with Gini coefficient decompositions
 - Econometric estimates of effects of migration and remittances on rural household incomes





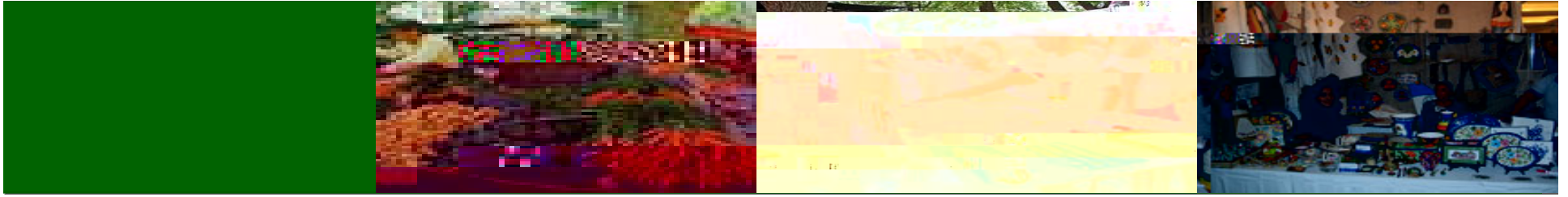
- a) **how important the income source is with respect to total income**
(Sk)
- b) **how equally or unequally distributed the income source is**
(Gk)

Example #1: Profits from commercial production

- Important (S_k is large)
 - Unequal (High G_k)
 - Accrue disproportionately to high income households (R_k is positive and large)
- => increases in commercial profits likely to sharpen rural inequalities

Gini Decomposition Results

Income Source	Sk	Gk	Rk	Share	Effect
Livestock	0.04	1.70	0.55	0.06	0.22%
Agricultural	0.12	1.13	0.77	0.18	0.57%
Government Transfers	0.04	0.76	0.23	0.01	-0.31%
Internal Remittances	0.02	0.95	0.25	0.01	-0.10%
US Remittances	0.11	0.94	0.69	0.12	0.10%
Wages	0.54	0.69	0.81	0.51	-0.36%
Others	0.13	0.86	0.63	0.12	-0.12%
Total Income	1.00	0.60	1.00	1.00	



2. Econometric Model

Testing the NELM in rural México

Key Hypotheses

If:

Income is constrained and

migration, M , and remittances, R , shape income constraints

...then constrained income response, Y , depends on M and R

Model: Some Income Sources Response to Migration and Remittances

$$\bar{Y}_k = \alpha_{0k} + \alpha_{1k} M_n + \alpha_{2k} M_u + \alpha_{3k} R_n + \alpha_{4k} R_u + \alpha_{5k} Z_k + \epsilon_k$$

Z_k = other (exogenous) variables affecting income sources

ϵ_k = Stochastic error

Remittances

...And Migration

$$M_j = g_j(\beta_j; Z_M) + \epsilon_{Mj}$$

$$\text{with } g(\beta; Z_M) = \exp(\beta_0 + \beta_1 Z_M)$$

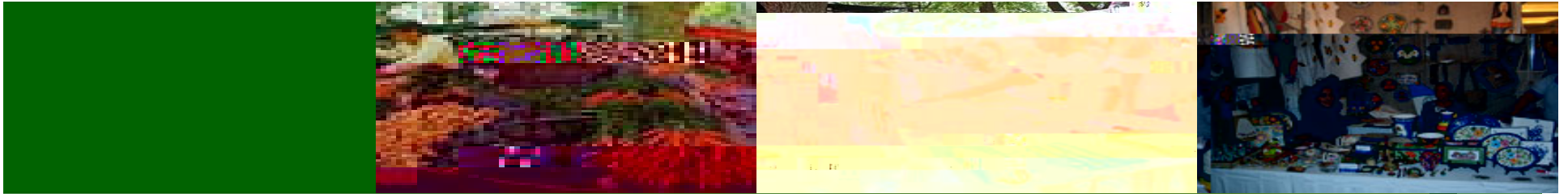
Z_M = other (exogenous) variables
affecting migration

ϵ_M = Stochastic error

Estimation of Model

This is a triangular (but not necessarily statistically recursive) equation system. Ordinary least squares may not be efficient.

The model was estimated using iterative three-stage least squares to exploit information contained in cross-equation error correlations



Econometric Model Results

Results from Migration Equation*

Independent variable	<i>Specification</i>			
	US	MEX	Dummy US	Dummy MEX
	(1990)	(1990)	HH Father	HH Father
Hh Size	0.185	0.207	0.186	0.207
Schooling HhH	-0.017	0.021	-0.019	0.021
HhH EXP	0.143	0.117	0.149	0.118
EXPSQ	-0.001	-0.001	-0.001	-0.001
Wealth Index	0.283	-0.058	0.317	-0.067
Index Squared	-0.033	-0.024	-0.027	-0.024
Livestock	0.007	-0.007	0.008	-0.007
Tractors	0.276	0.182	0.290	0.154
Frequency of Transport	-0.010	0.019	-0.005	0.022
Acc. During Weather Shocks	0.294	-0.019	0.200	0.009
Nonagric. Enterprise in Village	-0.106	0.105	-0.153	0.077
Number of Household Migrants in 1990	0.537	0.161	---	---
Household head's father migrant (Dummy)	---	---	0.407	0.020

CONCLUSIONS

- 1) *Individuals who migrate to the U.S. do not come from the poorest households*
 - U.S. remittances increase rural income inequality

- 2) *In contrast, internal remittances decrease rural income inequality*
 - Internal destinations are more accessible to the poor and entail lower risk

...but migrants are like financial intermediaries

- International and internal migrants provide remittances
- They also positively affect rural production
 - Providing capital to invest
 - Providing income insurance
- More research is needed to disentangle these effects

