Remittances and Financial Inclusion in Mexico and some evidence from an RCT in Tlaxcala

Dr. Alfredo Cuecuecha Mendoza

Centro de Investigación e Inteligencia Económicas

Universidad Popular Autónoma del Estado de Puebla (UPAEP)

Why do people send remittances?

- ◻ Altruism

- ◻ New economics of labor migration, lack of credit and insurance markets make households to choose long term informal contracts
    - ◻ Migrants may repay credits or debts to migrate
    - ◻ Migrants may supplement credit or insurance for household in Mexico

- ◻ Transnational households: remittance may be seen as temporary or long term, changing consumption patterns accordingly

Importance of remittances: Who sends remittances?

- 18.6 years in the US among remittance's senders
    - 18.6 for men
    - 18.4 for women

- 21.2 years in the US among non senders
    - 21.7 for men
    - 18.9 for women

- Years of education:
    - Senders 9.2 years
    - Non senders 10 years

Years in the US and education reduce remittances sent. Education in the US also reduces remittances

- Average remittances sent if 5 or less years of education in the US: 65 %

- Average remittances sent if 5 or less years of education in the US: 20 %

How much is sent:

- Monthly average 380 dollars
  - Men: 405 dollars
  - Women: 199 dollars

- Time in the US
  - 4 or less: 602 dollars
  - 5 to 8: 519 dollars
  - 9 or more: 250 dollars

- Monthly average per education level
  - Primary: 403
  - Junior high: 420
  - High school: 342
  - Technical education: 234
  - University or more: 351

Remittances reduced with time in the US and education

Importance of remittances: Who does receive remittances?

- 8.5 % of adult population receives remittances in Mexico (Source: Encuesta de Inclusión Financiera, 2015)
  - 6.7% Men
  - 10.2% Women

- Urban 7.1%
  - 5.2% Men
  - 8.9% Women

- Rural 11.1%
  - 9.4% Men
  - 12.7% Women

Remittances are more important for Women than for Men, and they are also more important in rural areas

Importance of remittances: Who does receive remittances?

◻ Mother is identified in 24% of senders as the unique recipient. It is identified in 25% of other responses as recipient together with other family members. In total 49% of senders mentioned their mother as the recipient of remittances. (Source: Encuesta de Inclusión Financiera, 2015)

◻ Father is mentioned in 8% as unique recipient. Together with other family members is mentioned in 19% of senders. In total is mentioned in 27% of all answers.

◻ Partner is identified in 14% of answers as unique recipient. Together with other family members is mentioned in 8% of other senders. In total, is mentioned in 23% of answers.

Evidence that remittances are sent primarily to family members and particularly mothers.

Importance of remittances: Who does receive remittances?

- 8.5 % of adult population receives remittances in Mexico (Source: Encuesta de Inclusión Financiera, 2015)
  - 6.7% Men
  - 10.2% Women

- Urban 7.1%
  - 5.2% Men
  - 8.9% Women

- Rural 11.1%
  - 9.4% Men
  - 12.7% Women

Remittances are more important for Women than for Men, and they are also more important in rural areas

Use of remittances: what senders believe

◻ **Food expenses, 13.5% as unique answer, 85% in combination with other uses**

◻ **Health 2% as unique answer, 26% in combination with other uses**

◻ **Education 19% in combination with other uses**

◻ **Housing investment 13% in combination with other uses**

◻ **Savings 3% in combination with other uses**

◻ **Family business .5% in combination with other uses**

Remittances are used to cover household expenditures and household human capital investments in education, health and housing
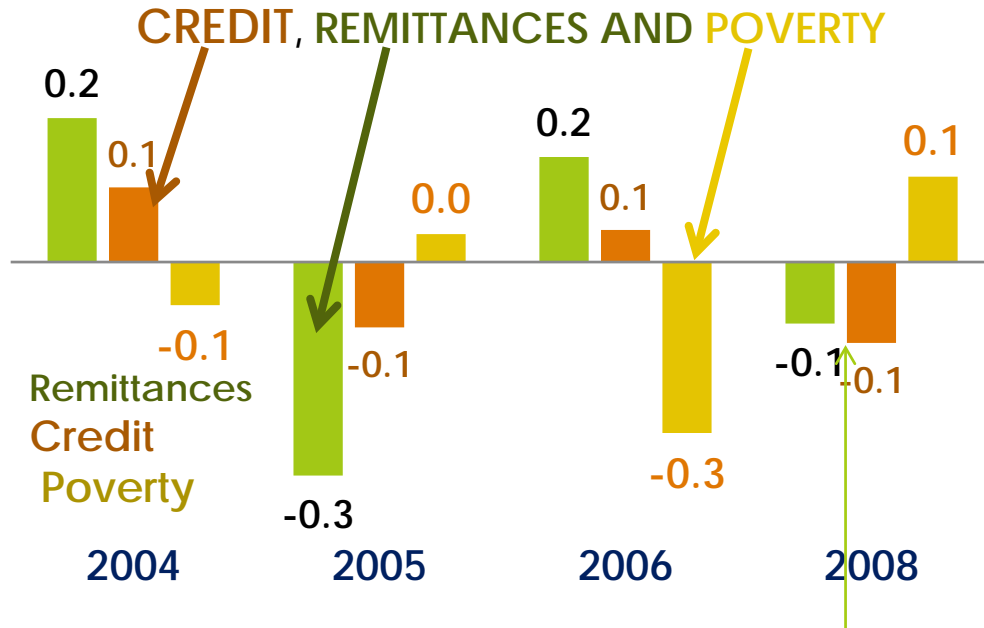
Remmittances to Mexico ($1000)

33,471

26,059

21,306

6,573

0

2000 2002 2004 2006 2008 2010 2012 2014 2016 2018
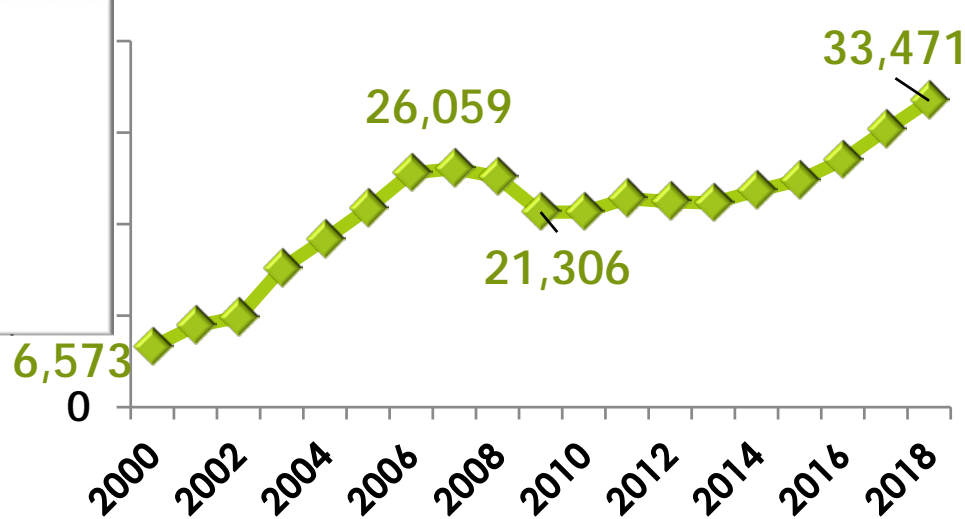
Importance of remittance reception

Stable source of dollars fx averaging 22 billion $US during last 10 years

The impact of remittances on Welfare (household level effects)

CREDIT, REMITTANCES AND POVERTY

0.2

0.1

0.2

0.1

0.0

0.1

-0.1

-0.1

-0.1 -0.1

-0.3

-0.3

Remittances
Credit
Poverty

2004   2005   2006   2008

- Less poverty
- More education of children
- More investment in houses
- More investment in microbusiness
- More Jobs but, Remittances do not help smooth he business cycle, aggregate investment or growth (aggregate effects)

Remitt
ances

Insura
nce

Financial
system

Savings

Credit

There are
obstacles to this:
the double
unbanked

IDEALLY: The
financial system
SHOULD help

- Mexico has a low level
  of bancarization by
  Latin American
  Standards (27.4 of HH%
  in 2011, 36.9% in 2017)
  (Source: World Bank,
  2019)
- Mexicans in US have
  also a lower access to
  the financial system
  than other non-native
  groups (Chinese or
  Puerto Ricans)

What explains the double unbanked?

Demand Side	Supply side
Mistrust of banks	Lack of Competition
Financial knowledge	Contract enforceability
	Technology

In Mexico

Demand Side	Supply side
Mistrust of banks	Institutional failure (lack of immigration reform)
Financial knowledge	Discrimination against minorities ?
Intrahousehold bargaining	Technology

In USA

Demand and supply factors

- **Mistrust of banks / financial knowledge (Roa, 2015)**

- **Lack of competition / contract enforceability (Hernández, 2007)**

Fordham University — Interactions. Desafolios
ECON 3238 August 2019

August 2019

But, recent studies show more saving balances, bank and credit use among remittance receivers…

Migrant households do know banks and use informal credit, banks simply do not seem to be interested in them (supply side matters)

Ambrosius and Cuecuecha (2016) show that remittances cause

More opening of bank accounts

Higher probability of having debt

Higher probability of receiving informal loans

No effect on loans from formal sector

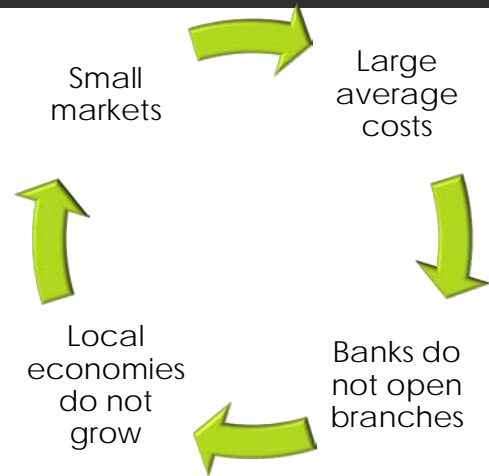Ashraf, Aycinema, Martinez & Yang (2015) show that remittances increase if

Migrant has control account in the home country

Intrahousehold allocation is important (so the demand side matters)

Is old bank technology the culprit?

Small markets → Large average costs → Banks do not open branches → Local economies do not grow → (cycle)

Using old bank technology can generate vicious cycles

Can new technologies reduce the double unbanked gap?

- Study in the state of Tlaxcala about 594 families, 171 families are receiving "treatment"
  - Education about finances, entrepreneurial skills and mobile banking
  - Free smartphones and bank accounts

Why Tlaxcala?
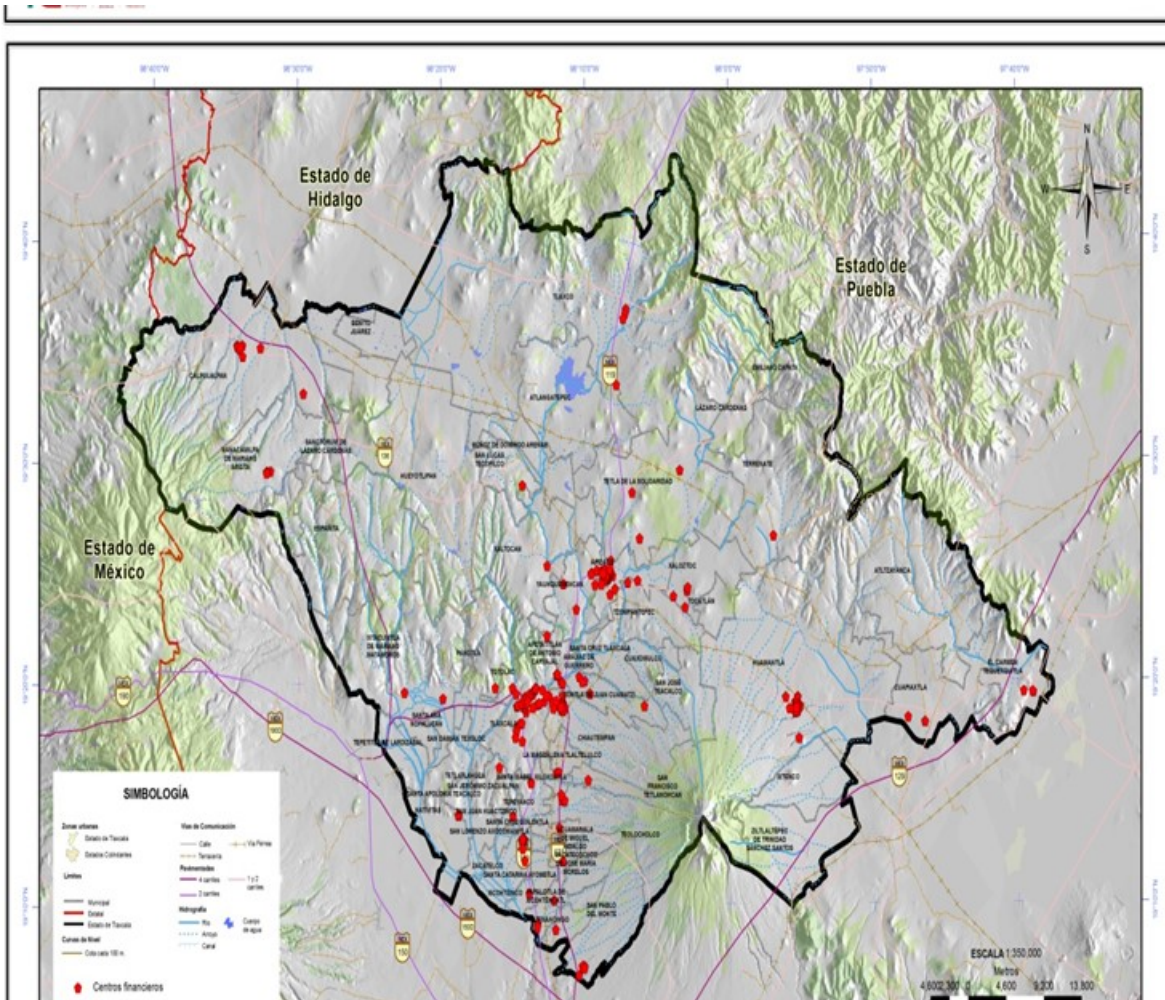
- **Smallest state in central Mexico, east from Mexico City**
- **Number 6, out of 32 states, in terms of poverty**
- **Number 32 in financial inclusion in 2011(1 bank per 10 tp)**
- **Reception of 220 md of remittances**
- **Considered a low migration intensity Mexican state**
- **52% of population with cell phones in 2011**
- **12% with smart phone in 2011**

Source: Fieldwork data

Some additional details

- Why do we need training?
  - Want to maximize technology adoption since our interest was to explore a topic very new in Mexico and that at the moment of the experiment was unheard of in the country
  - Also reduce risk that cell phones may be exchanged after we deliver them, since many people have no idea about how to use or how valuable it was

- Why do we need non-remittance receiver households?
  - Some non-economic literature claims that the additional income makes them reduce their efforts

Outcomes of interest

◻ Determine effect of experiment on:

  ◻ Financial inclusion (usage, depth, stability and quality)

  ◻ Income, Expenditure, Savings and Microbusiness activities

◉ Determine if reception of remittances interacts with the effects of experiment on the above indicators

Identifying the impact of the treatment

$$y_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 A_{it} + \beta_3 T_{it} A_{it} + \sum_j \alpha_j X_{ijt} + u_{it}$$

y_{it} : outcome variable

T_{it} : treatment

A_{it} : after

X_{ijt} : outcome variables

Outcomes :
1. Financial inclusion: (usage, depth, stability, quality)
2. Microbusiness
3. Income, expenditure savings

Notes: estimations performed using weights designed to control for the experiment design

Results

- ◻ Financial inclusion :
  - ◻ Usage and quality increase
  - ◻ No impact on depth and stability

- ◻ Economic impact:
  - ◻ Income, savings and micro business activities increase

Table 6. Results for Usage indicators: bank account

Model	Lineal	Lineal	Probit	Probit	Probit
Effects	Fixed	Fixed	Random	Random	Random
Results shown	Coefficients	Coefficients	Marginal effect	Marginal effect	Marginal effect
Treat	na	Na	0.006 [0.010]	-0.106 [0.101]	-0.165 [0.247]
After	0.051*** [0.011]	0.048*** [0.011]	0.004 [0.003]	0.056 [0.054]	0.052 [0.060]
T*After	0.071* [0.040]	0.068* [0.039]	0.007 [0.010]	0.052 [0.065]	0.113 [0.192]
Rem		0.008 [0.078]		0.015 [0.042]	0.060 [0.131]
Education		0.045** [0.023]		0.027 [0.028]	0.040 [0.061]
Age		0.003* [0.001]		-0.001 [0.001]	-0.0002 [0.0021]
Expenditure		0.008 [0.008]		-0.001 [0.013]	0.006 [0.034]
Wealth		-0.021 [0.045]		0.011 [0.015]	0.010 [0.024]
Minors		-0.012 [0.037]		-0.014 [0.018]	-0.016 [0.032]
Adult		-0.096 [0.186]		-0.016 [0.018]	-0.019 [0.035]
Constant	0.297 [0.006]	0.135 [0.284]		na	na
Municipality level controls	No	Yes*	No	Yes*	Yes
R^2	7.83%	8.55%	Na	na	Na
Wald (Chi^2)	na	Na	13.97***	14.63	8.16
N	1058	1058	1058	1058	1058
ATT (1)	22%*	21%*	2.1%	16.2%	35%

Table 7. Results for depth and stability indicators						
	Credit Balance			**Stability Index**		
Model	Lineal	Lineal	Tobit	Lineal	Lineal	Tobit
Effects	Fixed	Fixed	Random	Fixed	Fixed	Random
Results shown	Coefficients	Coefficients	Marginal effect	Coefficients	Coefficients	Marginal effect
Treat	na	na	-0.040 [0.060]	na	-0.165 [0.247]	0.032 [0.063]
After	0.185** [0.083]	0.138* [0.079]	0.015 [0.017]	-0.040 [0.024]	-0.038 [0.026]	-0.018 [0.026]
T*After	0.142 [0.206]	0.170 [0.201]	0.012 [0.040]	-0.092 [0.066]	-0.098 [0.068]	-0.041 [0.063]
Rem		-0.024 [0.323]			-0.005 [0.119]	
Education		0.677*** [0.199]			-0.029 [0.046]	
Age		0.005 [0.006]			-0.003 [0.002]	
Expenditure		0.002 [0.030]			-0.022*** [0.008]	
Wealth		0.440 [0.431]			0.084 [0.093]	
Minors		-0.121 [0.139]			-0.003 [0.057]	
Adult		-1.280 [1.592]			0.079 [0.176]	
Constant	0.556 [0.038]	0.381 [2.288]		0.192*** [0.011]	0.444 [0.335]	
Municipality level controls	No	Yes*	No	No	Yes*	No
R^2	1.78%	2.74%	Na	1.97%	2.52%	Na
Wald (Chi^2)	na	na	1.77	na	na	1.58
ATT(1)	.007%	.009%	.0006%	-46%	-.49%	-20%
N	1058	1058	1058	1058	1058	1058

Table 8. Results for quality index			
Model	Lineal	Lineal	Tobit
Effects	Fixed	Fixed	Random
Results shown	Coefficients	Coefficients	Marginal effect
Treat	Na	na	-0.103 [0.093]
After	0.072*** [0.020]	0.069*** [0.021]	0.034 [0.022]
T*After	0.088* [0.054]	0.089* [0.052]	0.042 [0.054]
Rem		0.056 [0.120]	
Education		0.036 [0.033]	
Age		0.004** [0.002]	
Expenditure		0.008 [0.011]	
Wealth		-0.057 [0.069]	
Minors		-0.008 [0.050]	
Adult		-0.222 [0.374]	
Constant	0.357*** [0.009]	0.315 [0.544]	
Municipality level controls	No	Yes*	No
R^2	1.78%	6.95%	Na
Wald (Chi^2)	Na	na	1.77
ATT(1)	22%	23%	11%
N	1058	1058	1058

Outcome	Log Income	Log Expenditure	Log Savings	Micro business
Table 9. Results for household income, household expenditure, household savings and micro business activities				
Model	Lineal	Lineal	Lineal	Lineal
Effects	Fixed	Fixed	Fixed	Fixed
Results shown	Coefficients	Coefficients	Coefficients	Coefficients
Treat	na	na	na	na
After	0.065 [0.047]	0.029*** [0.011]	0.044 [0.053]	0.026*** [0.010]
T*After	0.215** [0.097]	0.001 [0.039]	0.595* [0.315]	0.102*** [0.040]
Rem	-0.527 [0.521]	-0.022 [0.069]	-0.758 [0.578]	-0.323* [0.189]
Education	-1.384*** [0.074]	0.062*** [0.026]	-1.424*** [0.092]	0.034* [0.021]
Age	-0.013 [0.010]	0.0005 [0.0013]	-0.010 [0.011]	-0.004 [0.003]
Expenditure	na	na	na	0.012*** [0.005]
Wealth	-0.145 [0.159]	0.049 [0.052]	-0.122 [0.201]	-0.028 [0.019]
Minors	-0.876*** [0.277]	0.276*** [0.038]	-1.175*** [0.254]	-0.108 [0.072]
Adult	-0.461** [0.187]	-0.052 [0.048]	-0.344 [0.316]	0.039** [0.020]
Constant	14.050*** [0.696]	7.869*** [0.126]	6.006*** [0.811]	0.092 [0.214]
Municipality level controls	Yes*	Yes*	Yes*	Yes*
R^2	6.02%	4.2%	6.88%	10%
ATT(1)	21.5%**	0.1%	59.5%*	164%***
N	1048	1054	1048	1058

Identifying the interaction of the impact with remittances

$$y_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 A_{it} + \beta_3 T_{it} A_{it} + \beta_4 R_{it} + \beta_5 T_{it} A_{it} R_{it} + \sum_j \alpha_j X_{ijt} + u_{it}$$

y_{it} : outcome variable

T_{it} : *treatment*

A_{it} : after

R_{it} : remittances

X_{ijt} : control variables

Notes: estimations performed with weights designed to control for the experiment design

Results (preliminary)

- ▫ Non significant results or unexpected signs

- ▫ Indication that remittances are highly endogenous and that it is necessary to use instruments (in process)

Additional conclusions

- ◻ "Bad" business practices by Mexican banks do exist and generate mistrust of households

  - ◻ Households do however look for help from informed people and if other options exist they switch banks

- ◻ Infrastructure problems also limit the usefulness of the mobile technology

□ Thanks!