

# **Remittances, technology and financial access in *transnational households***



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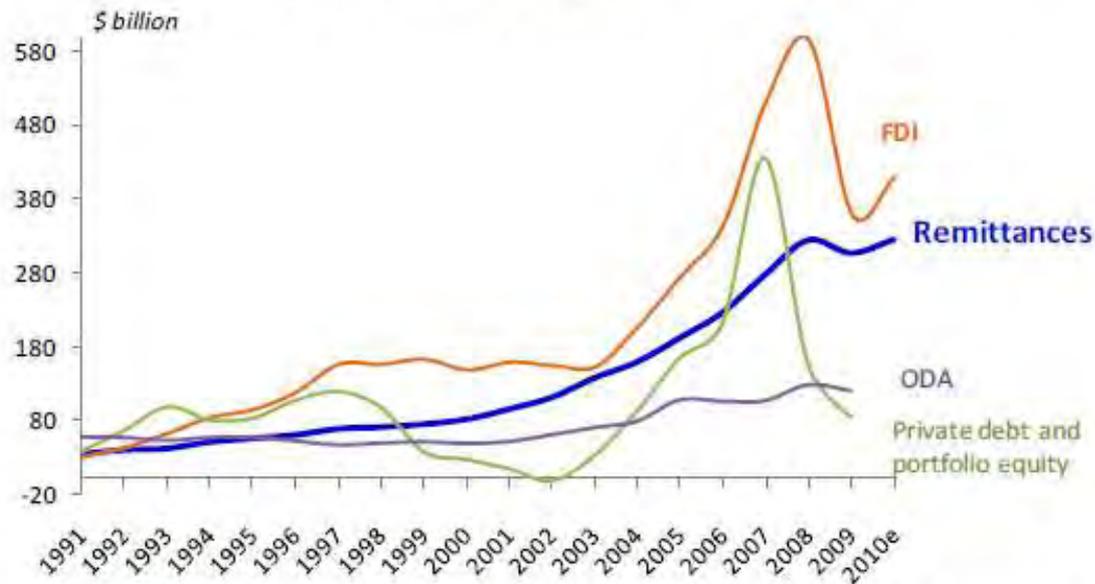
# Objectives :

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- To better understand how **transnational households use financial services and new technologies such as mobile phones** affect remittances and decision making within the family
- **Four Immigrant Corridors:** Guerrero-New York, Oaxaca-Los Angeles and Puebla-New York and Puebla-Raleigh-Durham North Carolina.

# Remittances

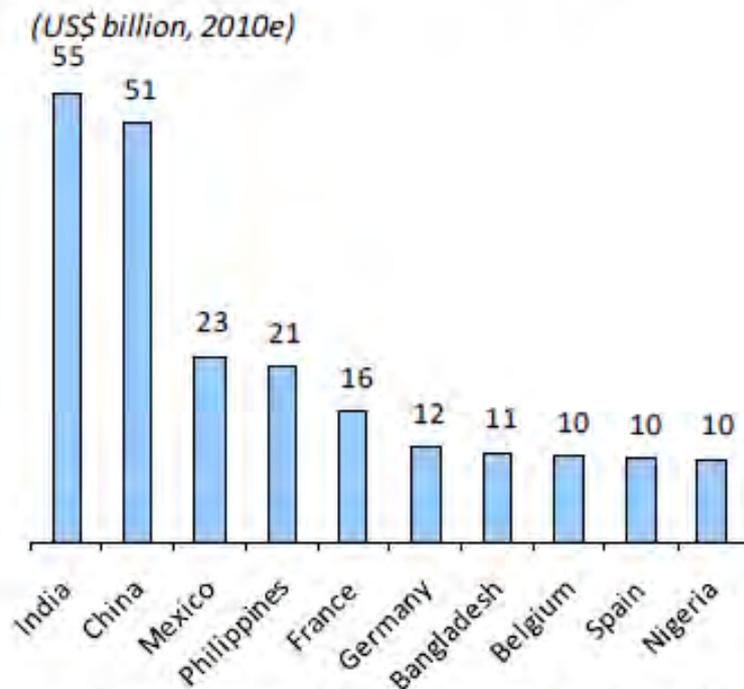
**Figure 1: Remittances remained resilient compared to private capital flows during the global economic crisis and have begun to recover in 2010**



Source: World Development Indicators (September 2010), Global Economic Monitor, and staff estimates.

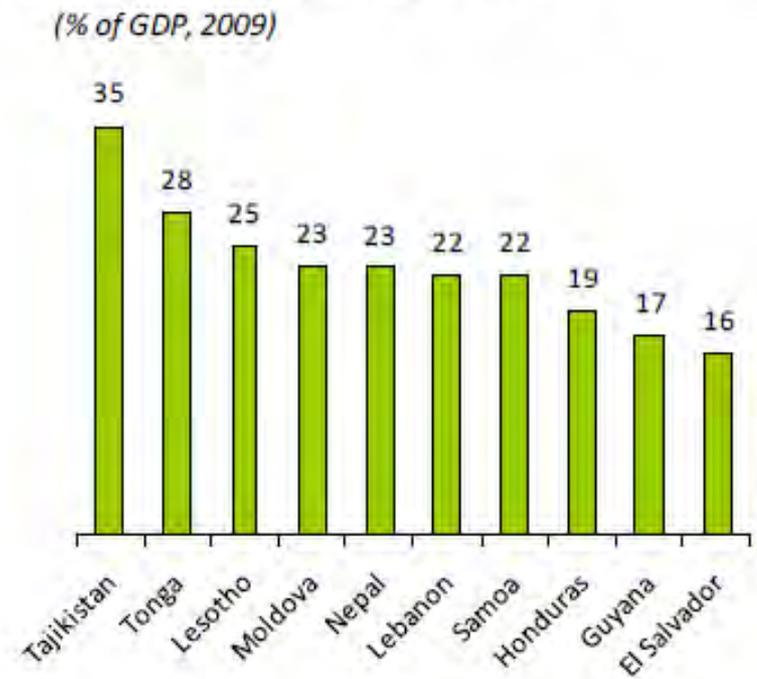
# Remittances

Figure 2: Top 10 recipients of migrant remittances



Source: Migration and Remittances Factbook 2011.

Figure 3: Top 10 recipients of migrant remittances as a share of GDP



# Data and research Methods:

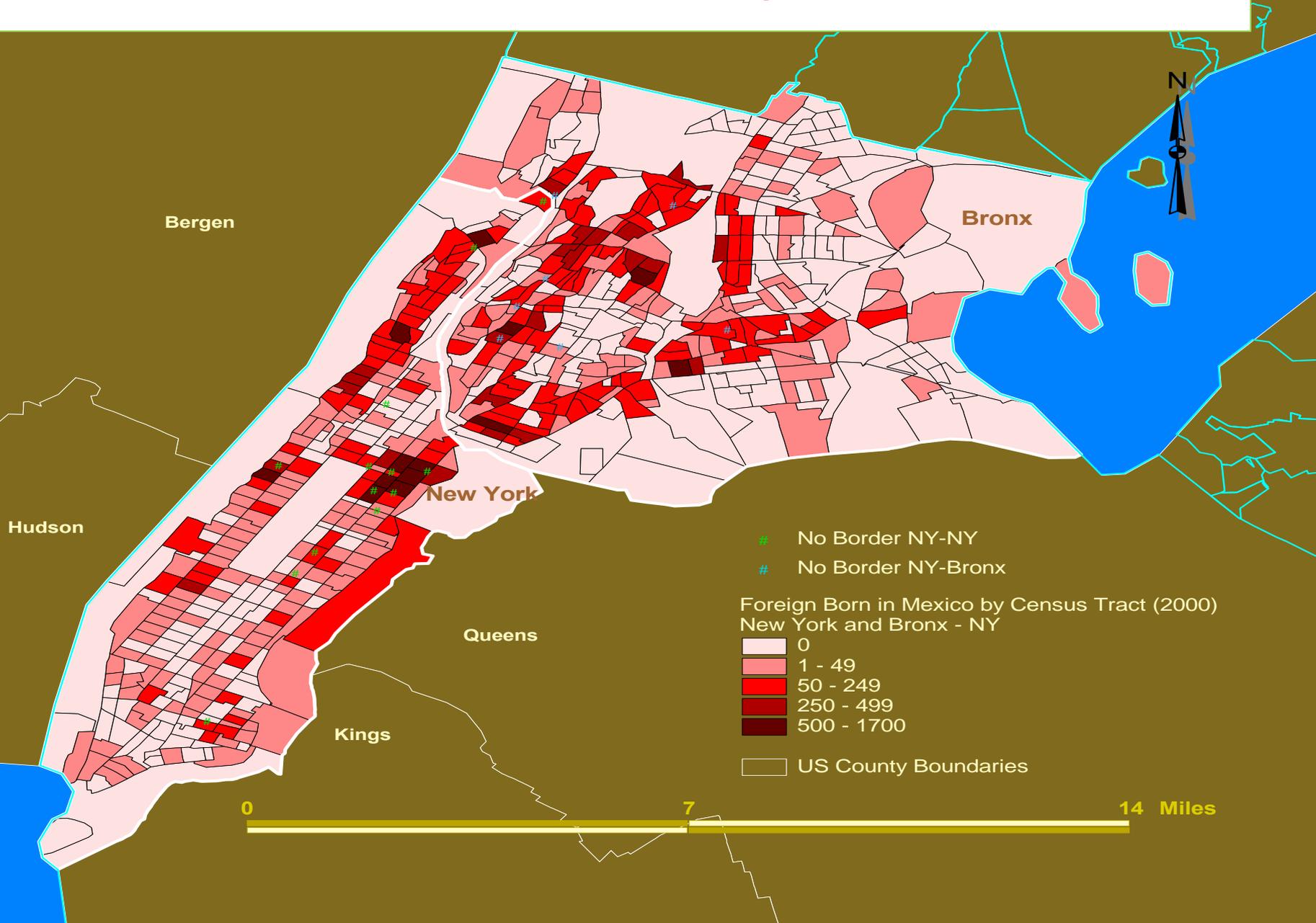
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- Survey of 157 Mexican immigrants living in Los Angeles, New York, North Carolina
- Seven focus groups: 3 in NY, 2 in Puebla, 2 in DR, all women 18-72 who send or receive remesas.
- Better understand how financial access and new technologies affect remittances and decision making in transnational households with family in the U.S.
- To assess how financial access to new technologies **including cell phones impact women's status.**

# US Foreign Born in Mexico and Mexican Households with Emigrants to US



# NYC- Guerrero and -Puebla Immigrant Concentrations



# Results for the decision to remit

**Table 1A: Predict decision to send remittances over \$600 in previous year**

Dependent Variable: Sent more than \$600 in remittances last year					
(z-statistics in parentheses)	4.1	4.2	4.3	4.4	4.5
Months in U.S. + months since	0.002 (0.2)	0.09 (0.5)	0.02 (0.7)	0.01 (0.5)	0.01 (0.2)
Migrant is a U.S. Citizen	-0.40 (-1.2)	-0.35 (-0.9)	-0.7 (-1.5)	-0.55 (-1.5)	-0.56 (-1.3)
Financial Access in Mexico (# of savings or checking accounts)	1.07 (2.2)	1.2 (2.2)	1.49 (2.6)	1.41 (2.4)	1.21 (2.1)
# of HH Mobile phones in U.S.	-0.06 (-1.2)	-0.12 (-2.2)	0.4 (2.7)	-0.20 (-2.9)	-0.21 (-3.1)
#of HH Mobile phones in Mexico	0.252 (1.82)	0.33 (2.3)	0.39 (2.7)	0.38 (2.8)	0.69 (2.7)
Has credit card and lives in LA	-1.6 (-3.0)	-1.73 (-3.0)			
Financial Access in the U.S. 2/ (# of savings/checking accounts + credit cards)			-0.6 (-1.8)	-0.40 (-1.3)	-0.31 (-2.1)
Number of Earners in household	0.80 <b>(3.3)</b>	0.85 <b>(3.2)</b>	1.0 <b>(3.6)</b>		

**Table 1A: Predict decision to send remittances over \$600 in previous year**

Dependent Variable: Sent more than \$600 in remittances last year

<i>(z-statistics in parentheses)</i>	4.1	4.2	4.3	4.4	4.5
Months in U.S. + months since	<b>0.002</b> (0.2)	<b>0.09</b> (0.5)	<b>0.02</b> (0.7)	<b>0.01</b> (0.5)	<b>0.01</b> (0.2)
Migrant is a U.S. Citizen	<b>-0.40</b> (-1.2)	<b>-0.35</b> (-0.9)	<b>-0.7</b> (-1.5)	<b>-0.55</b> (-1.5)	<b>-0.56</b> (-1.3)
Mexican HH makes own financial decisions		<b>-0.62</b> (-1.7)			
Family knows what I earn in U.S.		<b>0.97</b> (1.4)			
Migrant makes key financial decisions				<b>1.2</b> (1.9)	<b>1.19</b> (1.9)
Key financial decisions in Mex cooperative		<b>1.09</b> (2.8)	<b>1.52</b> (3.1)	<b>1.17</b> (2.5)	<b>1.1</b> (2.4)
Interaction between			<b>1.35</b> (2.6)		
Constant	<b>0.1</b> (0.2)	<b>-0.32</b> (-0.3)	<b>-1.2</b> (-1.9)	<b>-0.9</b> (-1.4)	<b>-0.9</b> (-1.4)
Number of Observations	157	157	157	157	157
McFadden R-squared	0.20	0.31	0.27	0.24	0.25
S.E. of regression	0.42	0.39	0.40	0.41	0.41
# sending remittances >\$600 annually	105	105	105	105	105
# sending remittances <\$600 annually	52	52	52	52	52
Estimation method (BEV: binary extreme value)	BEV	BEV	Logit	Logit	Logit

# Key results from survey analysis

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- Access to ***financial services in the U.S. reduces remittances*** (except debit cards)
- Access to ***financial services in Mexico*** (mainly savings) ***increases*** remittances
- ***Cell phone in Mexico use increases remittances*** (not in U.S.) ***causality runs from phones to remittances***
- Cell phone use in Mexico is associated with ***decreased migrant control*** over financial decision making (culture/gender has role)

**Table 2A: Determinants of Remittances: origin, occupation, gender and education**

Dependent Variable: <i>(t-statistics in parentheses)</i>	Log Annual Remittances (average \$187 per month)					
	2.1	2.2	2.3	2.4	2.5	2.6
– Months in U.S. + months since last visit to Mexico (log squared)	<b>-0.04</b> <i>-(3.3)</i>	<b>-0.03</b> <i>-(2.7)</i>	<b>-0.04</b> <i>-(3.0)</i>	<b>-0.03</b> <i>-(2.3)</i>	<b>-0.03</b> <i>-(2.5)</i>	<b>-0.03</b> <i>-(2.2)</i>
Women's basic expenses (N=48) log(food+clothes+phone)	<b>0.41</b> <i>(2.4)</i>	<b>0.45</b> <i>(2.6)</i>	<b>0.47</b> <i>(2.8)</i>	<b>0.55</b> <i>(3.0)</i>	<b>0.57</b> <i>(3.4)</i>	<b>0.54</b> <i>(3.1)</i>
Men's basic expenses (N=44) log(food+clothes+phone)	<b>0.39</b> <i>(2.2)</i>	<b>0.37</b> <i>(2.1)</i>	<b>0.40</b> <i>(2.4)</i>	<b>0.47</b> <i>(2.6)</i>	<b>0.48</b> <i>(2.8)</i>	<b>0.45</b> <i>(2.6)</i>
Speak a Dialect and Spanish but say the speak no English (N=24)	<b>-0.43</b> <i>-(3.1)</i>	<b>-0.40</b> <i>-(2.7)</i>	<b>-0.41</b> <i>-(2.7)</i>	<b>-0.31</b> <i>-(2.3)</i>	<b>-0.35</b> <i>-(2.5)</i>	<b>-0.32</b> <i>-(2.1)</i>
Is a U.S Citizen (N=52)	<b>-0.48</b> <i>-(2.5)</i>	<b>-0.42</b> <i>-(2.1)</i>	<b>-0.42</b> <i>-(2.2)</i>		<b>-0.32</b> <i>-(1.7)</i>	<b>-0.28</b> <i>-(1.5)</i>
Primary only or no schooling (N=29)				<b>-0.48</b> <i>-(2.0)</i>	<b>-0.37</b> <i>-(1.7)</i>	<b>-0.40</b> <i>-(1.7)</i>
Receive government payments (N=40)						<b>-0.26</b> <i>-(1.3)</i>
From Guerrero or Puebla and, (N=64)						
Work as domestic (N=17)			<b>0.64</b> <i>(2.4)</i>	<b>0.83</b> <i>(3.5)</i>	<b>0.77</b> <i>(2.8)</i>	<b>0.84</b> <i>(3.3)</i>
Have no schooling (N=4)					<b>-1.21</b>	<b>-1.02</b>

Men's basic expenses (N=44)	<b>0.39</b>	<b>0.37</b>	<b>0.40</b>	<b>0.47</b>	<b>0.48</b>	<b>0.45</b>
log(food+clothes+phone)	(2.2)	(2.1)	(2.4)	(2.6)	(2.8)	(2.6)
Speak a Dialect and Spanish but say the speak no English (N=24)	<b>-0.43</b>	<b>-0.40</b>	<b>-0.41</b>	<b>-0.31</b>	<b>-0.35</b>	<b>-0.32</b>
	-(3.1)	-(2.7)	-(2.7)	-(2.3)	-(2.5)	-(2.1)
-Is a U.S Citizen (N=52)	<b>-0.48</b>	<b>-0.42</b>	<b>-0.42</b>		<b>-0.32</b>	<b>-0.28</b>
	-(2.5)	-(2.1)	-(2.2)		-(1.7)	-(1.5)
Primary only or no schooling (N=29)				<b>-0.48</b>	<b>-0.37</b>	<b>-0.40</b>
				-(2.0)	-(1.7)	-(1.7)
Receive government payments (N=40)						<b>-0.26</b>
						-(1.3)
From Guerrero or Puebla and, (N=64)						
Work as domestic (N=17)			<b>0.64</b>	<b>0.83</b>	<b>0.77</b>	<b>0.84</b>
			(2.4)	(3.5)	(2.8)	(3.3)
Have no schooling (N=4)					<b>-1.21</b>	<b>-1.02</b>
					-(4.4)	-(3.2)
HS or University education (N=47)				<b>-0.53</b>	<b>-0.48</b>	<b>-0.51</b>
				-(2.2)	-(2.0)	-(2.3)
Men from Guerrero or Puebla (N=31)	<b>0.51</b>	<b>0.46</b>	<b>0.77</b>	<b>0.71</b>	<b>0.69</b>	
	(2.0)	(1.8)	(2.7)	(2.6)	(2.4)	
From Guerrero only (N=17)						
Work in construction, retail or manufacturing				<b>0.65</b>	<b>0.85</b>	<b>0.76</b>
				(1.7)	(3.7)	(1.7)
From Guerrero only (N=17)				<b>0.34</b>		<b>0.32</b>
				(1.4)		(1.2)
Constant	<b>6.47</b>	<b>6.04</b>	<b>5.96</b>	<b>5.3</b>	<b>5.4</b>	<b>5.6</b>
	(5.7)	(5.3)	(5.3)	(4.3)	(4.8)	(4.8)
Number of Observations	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
R-squared	<b>0.23</b>	<b>0.26</b>	<b>0.29</b>	<b>0.33</b>	<b>0.37</b>	<b>0.40</b>
Adjusted R-squared	<b>0.19</b>	<b>0.21</b>	<b>0.23</b>	<b>0.25</b>	<b>0.29</b>	<b>0.30</b>
Std Error of Estimation	<b>0.91</b>	<b>0.90</b>	<b>0.79</b>	<b>0.79</b>	<b>0.76</b>	<b>0.75</b>

			(2.4)	(3.5)	(2.8)	(3.3)
Have no schooling (N=4)					<b>-1.21</b>	<b>-1.02</b>
					-(4.4)	-(3.2)
HS or University education (N=47)					<b>-0.53</b>	<b>-0.48</b>
					-(2.2)	-(2.3)
Men from Guerrero or Puebla (N=31)	<b>0.51</b>	<b>0.46</b>	<b>0.77</b>	<b>0.71</b>	<b>0.71</b>	<b>0.69</b>
	(2.0)	(1.8)	(2.7)	(2.6)	(2.6)	(2.4)
<b>From Guerrero only (N=17)</b>						
Work in construction, retail or manufacturing					<b>0.65</b>	<b>0.85</b>
					(1.7)	(1.7)
From Guerrero only (N=17)					<b>0.34</b>	<b>0.32</b>
					(1.4)	(1.2)
Constant	<b>6.47</b>	<b>6.04</b>	<b>5.96</b>	<b>5.3</b>	<b>5.4</b>	<b>5.6</b>
	(5.7)	(5.3)	(5.3)	(4.3)	(4.8)	(4.8)
Number of Observations	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>
R-squared	<b>0.23</b>	<b>0.26</b>	<b>0.29</b>	<b>0.33</b>	<b>0.37</b>	<b>0.40</b>
Adjusted R-squared	<b>0.19</b>	<b>0.21</b>	<b>0.23</b>	<b>0.25</b>	<b>0.29</b>	<b>0.30</b>
Std Error of Regression	<b>0.81</b>	<b>0.80</b>	<b>0.79</b>	<b>0.78</b>	<b>0.76</b>	<b>0.75</b>
Wald F-test for gender differences 1/ Prob value for equal coefficients null	0.65	4.4	3.0	4.2	5.9	5.8
	42%	3.9%	8.9%	4.4%	1.7%	1.9%

-(1.3)

From Guerrero or Puebla and, (N=64)

Work as domestic (N=17)

**0.64** **0.83** **0.77** **0.84**  
(2.4) (3.5) (2.8) (3.3)

Have no schooling (N=4)

**-1.21** **-1.02**  
-(4.4) -(3.2)

HS or University education (N=47)

**-0.53** **-0.48** **-0.51**  
(-2.2) (-2.0) (-2.3)

**Table 3: Remittances, Financial Access and Technology use**

Dependent Variable:	Log Annual Remittances (\$2250 a year; \$188 a month)						
<i>(t-statistics in parentheses)</i>	3.1	3.2	3.3	3.4 <sup>1/</sup>	3.4a <sup>1/</sup>	3.5	3.6 <sup>6/</sup>
Months in U.S. + months since last visit to Mexico (log squared)	<b>-0.04</b> <i>-(3.7)</i>	<b>-0.03</b> <i>-(3.2)</i>	<b>-0.03</b> <i>-(2.5)</i>	<b>-0.03</b> <i>-(2.2)</i>	<b>-0.03</b> <i>-(2.9)</i>	<b>0.27</b> <i>-(4.0)</i>	<b>-0.03</b> <i>-(3.2)</i>
Basic expenses log(food+clothes+phone)	<b>0.37</b> <i>(2.2)</i>	<b>0.34</b> <i>(2.3)</i>	<b>0.39</b> <i>(2.6)</i>	<b>0.46</b> <i>(3.1)</i>	<b>0.47</b> <i>(3.7)</i>	<b>0.27</b> <i>(2.0)</i>	<b>0.34</b> <i>(2.5)</i>
Speak dialect or spanish but no english	<b>-0.53</b> <i>-(3.6)</i>	<b>-0.62</b> <i>-(4.0)</i>	<b>-0.55</b> <i>-(3.6)</i>	<b>-0.50</b> <i>-(3.6)</i>	<b>-0.45</b> <i>-(3.2)</i>	<b>-0.52</b> <i>-(3.7)</i>	<b>-0.64</b> <i>-(5.6)</i>
Is a U.S Citizen (N=42)	<b>-0.54</b> <i>-(3.0)</i>	<b>-0.53</b> <i>-(2.8)</i>	<b>-0.50</b> <i>-(2.7)</i>	<b>-0.45</b> <i>-(2.6)</i>	<b>-0.31</b> <i>-(2.0)</i>	<b>-0.45</b> <i>-(2.8)</i>	<b>-0.30</b> <i>-(1.7)</i>
From Guerrero or Puebla, domestic services	<b>0.61</b> <i>(2.2)</i>	<b>0.70</b> <i>(2.8)</i>	<b>0.72</b> <i>(2.8)</i>	<b>0.81</b> <i>(3.1)</i>	<b>0.78</b> <i>(3.7)</i>	<b>0.80</b> <i>(3.3)</i>	<b>0.86</b> <i>(3.1)</i>
Migrant has checking account in Mexico		<b>0.42</b> <i>(1.9)</i>	<b>0.47</b> <i>(2.0)</i>	<b>0.50</b> <i>(1.8)</i>	<b>0.48</b> <i>(1.8)</i>		
Female Migrant has checking account in Mexico						<b>0.92</b> <i>(5.0)</i>	<b>1.03</b> <i>(6.0)</i>

**Table 3: Remittances, Financial Access and Technology use**

Dependent Variable:	Log Annual Remittances (\$2250 a year; \$188 a month)						
<i>(t-statistics in parentheses)</i>	3.1	3.2	3.3	3.4 <sup>1/</sup>	3.4a <sup>1/</sup>	3.5	3.6 <sup>6/</sup>
Migrant has checking account in Mexico		<b>0.42</b> <i>(1.9)</i>	<b>0.47</b> <i>(2.0)</i>	<b>0.50</b> <i>(1.8)</i>	<b>0.48</b> <i>(1.8)</i>		
Female Migrant has checking account in Mexico						<b>0.92</b> <i>(5.0)</i>	<b>1.03</b> <i>(6.0)</i>
Migrant has U.S. Checking account 3/		<b>-0.36</b> <i>(-1.4)</i>	<b>-0.24</b> <i>(-1.1)</i>	<b>-0.25</b> <i>(-1.1)</i>			<b>-0.61</b> <i>(-1.9)</i>
Migrant works in Construction					<b>0.60</b> <i>(2.8)</i>		
Migrant has savings account in Mexico 4/		<b>0.28</b> <i>(1.3)</i>	<b>0.29</b> <i>(1.4)</i>	<b>0.30</b> <i>(1.5)</i>	<b>0.44</b> <i>(2.4)</i>	<b>0.79</b> <i>(3.4)</i>	<b>0.31</b> <i>(1.6)</i>
Migrant has savings account in the U.S.		<b>-0.52</b> <i>(-2.5)</i>	<b>-0.46</b> <i>(-2.2)</i>	<b>-0.50</b> <i>(-2.4)</i>	<b>-0.65</b> <i>(-3.7)</i>	<b>-0.66</b> <i>(-3.4)</i>	<b>-0.60</b> <i>(-3.0)</i>
Male migrant has U.S. credit card						<b>-1.56</b> <i>(-7.2)</i>	<b>-1.24</b> <i>(-3.5)</i>
Male migrant's HH U.S. bank debit cards 5/						<b>0.30</b> <i>(2.0)</i>	

**Table 3: Remittances, Financial Access and Technology use**

Dependent Variable: <i>(t-statistics in parentheses)</i>	Log Annual Remittances (\$2250 a year; \$188 a month)						
	3.1	3.2	3.3	3.4 <sup>1/</sup>	3.4a <sup>1/</sup>	3.5	3.6 <sup>6/</sup>
Number of mobile phones in Mexico household			<b>0.07</b> (3.0)	<b>0.08</b> (2.3)	<b>0.12</b> (2.3)	<b>0.08</b> (3.1)	<b>0.10</b> (3.7)
Constant	<b>6.8</b> (6.3)	<b>6.90</b> (7.2)	<b>6.4</b> (6.3)	<b>5.7</b> (5.4)	<b>5.4</b> (6.1)	<b>7.2</b> (8.4)	<b>6.3</b> (6.4)
Number of Observations	83	82	82	82	82	82	81
R-squared	0.29	0.40	0.42	0.44	0.46	0.53	0.57
Adjusted R-squared	0.25	0.33	0.34	0.35	0.38	0.46	0.48
Std Error of Regression	0.77	0.73	0.71	0.71	0.69	0.65	0.64
Estimation method <sup>1/</sup>	<i>OLS</i>	<i>OLS</i>	<i>OLS</i>	<i>IV-GMM</i>	<i>IV-GMM</i>	<i>OLS</i>	<i>OLS</i>
Sargan Test (prob-value) <sup>2/</sup>				94%	58%		

*1/ Instruments for mobile phones in Mexico: migrants came from Oaxaca or Mexico DF, migrants speak local dialect, live in NYC or work in manufacturing or restuarants or have some University education. Eq 3.5a drops manufacturing jobs and adds mobile phones in U.S., employment in retail, construction and restuarants and women migrants.*

*2/ The GMM J-statistic (1.26) and intrument rank (17) are used to compute the equivalent of a Sargan tests for the null hypothesis that the instruments are exogenous. here the null can only be rejected with 6% confidence compared to the usual 95%.*

*3/ Eq. 3.6 includes only males migrants with checking accounts in the United States.*

*4/ Eq 3.5 excludes migrants who came from Puebla, leaving those from Oaxaca, Mexico DF or Guerro.*

*5/ Male migrant household refers to male migrant and next closest person living in household (either or both have debit cards).*

*6/ Eq. 3.6 also includes variables for the age of male remittance sender (coefficient .02, t-statistic 3.1), and for female migrants who send remmitance to father (coef .80, t-statistic 2.9), and migrants who send remittance to spouse (coef .80, t-statistic 2.3),*

# Summary of findings

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- **Financial access to formal accounts in Mexico** increases remittances.
- Access to **U.S. financial services** reduces remittances except perhaps debit cards
- **Use of cell phones** in Mexico increases remittances, causality seems to run from mobile phones to remittances
- **Gender differences:** impact of women's access finance in Mexico greater, men's U.S. access greater in opposite direction

# How do remittances, cell phones and financial affect TNH decision making?

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## 4 survey questions on decision-making:

1. "I am in charge of the majority of the financial decisions made by my family in Mexico." (FDUS)
2. "the majority of decisions are made by my family in Mexico alone" (FDMX)
3. "important financial decisions are made by me and family members in Mexico, jointly." Fdboth
4. "members of my family in Mexico know how much I earn"

**Answers:** Agree , somewhat agree, no, not really, no and "I am not sure"

# Survey questions in Spanish:

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1. **FDUS:** Es Ud. responsable por la mayoría de las decisiones financieras que hacen su familia en México, como en compras de carro, casa, o negocios? Nos referimos siempre a la familia a la cual Ud. envía remesas?
2. **FDMX:** Sus familiares en México hacen la mayoría de las decisiones financieras ellos solos?
3. **FDboth** Ud. y sus familiares en México juntos hacen las decisiones financieras más importantes.
4. **Know:** Sus familiares en México saben cuánto gana Ud.?

## My family makes key financial decisions together

	Women	Men	All	Women	Men	All
<b>Yes</b>	39	34	73	51%	44%	47%
<b>Some</b>	2	9	11	3%	12%	7%
<b>No</b>	26	30	56	34%	38%	36%
<b>Not really</b>	10	5	15	13%	6%	10%
	78	78	156	100%	100%	100%

**Table 4: Transnational Household (TNH) Financial decision making**

Dependent Variable:  (z-statistics in parentheses)	Agree (yes) answers to TNH major financial decisions statements					
	Cooperative TNH decision-making		Migrant in U.S. makes decisions		Mexico family makes financial decisions	
	4.1	4.2	4.3	4.4	4.5	4.6
Months in U.S. + months since last visit to Mexico (log squared)	<b>-0.05</b> (-0.3)	<b>0.12</b> (-1.7)	<b>-0.82</b> (-2.5)	<b>-0.29</b> (-1.5)	<b>0.74</b> (2.4)	<b>0.47</b> (2.4)
Log remittances per year	<b>0.34</b> (2.3)	<b>0.30</b> (1.9)	<b>1.1</b> (2.6)	<b>0.46</b> (2.0)	<b>-0.31</b> (-1.1)	<b>-0.05</b> (-0.3)
Migrant has savings account in Mexico 4/	<b>0.72</b> (2.3)	<b>1.2</b> (3.2)	<b>-1.22</b> (-1.9)	<b>-0.42</b> (-1.2)	<b>1.18</b> (2.0)	<b>1.03</b> (2.6)
Migrant has U.S. credit card	<b>1.12</b> (2.5)	<b>0.84</b> (2.0)	<b>2.3</b> (2.2)	<b>1.67</b> (2.6)	<b>-1.56</b> (-2.0)	<b>-0.67</b> (-1.4)
Mobile phones in Mexico + the U.S.	<b>0.004</b> (0.14)	<b>0.03</b> (1.0)	<b>-0.29</b> (-2.9)	<b>-0.21</b> (-3.2)	<b>0.15</b> (2.7)	<b>0.09</b> (2.8)
Migrant speaks local dialect	<b>1.2</b>	<b>1.04</b>	<b>2.07</b>	<b>0.82</b>	<b>-1.41</b>	<b>-0.49</b>

**Table 4: Transnational Household (TNH) Financial decision making**

Dependent Variable:  <i>(z-statistics in parentheses)</i>	Agree (yes) answers to TNH major financial decisions statements					
	Cooperative TNH decision-making		Migrant in U.S. makes decisions		Mexico family makes financial decisions	
	4.1	4.2	4.3	4.4	4.5	4.6
Family does not know what I earn in U.S.					<b>1.43</b> (2.5)	<b>0.79</b> (2.4)
Age of migrant in U.S. (remittance sender)	<b>-0.01</b> (-0.7)	<b>-0.02</b> (-1.0)	<b>0.06</b> (1.4)	<b>0.02</b> (1.1)	<b>-0.05</b> (-1.2)	<b>-0.04</b> (-1.6)
Respondent works in domestic services sector	<b>0.87</b> (1.8)	<b>1.03</b> (2.2)	<b>-1.5</b> (-1.3)	<b>-0.83</b> (-1.4)		
Answered yes to Mexico family autonomous		<b>-1.33</b> (-4.0)		<b>-1.9</b> (-3.7)		
Answered yes to cooperate decisions w/ family in Mex					<b>-1.2</b> (-3.8)	
Male migrant sends remittance to woman			<b>-2.01</b> (-2.0)	<b>-1.47</b> (-2.9)	<b>-0.62</b> (-1.1)	<b>-0.42</b> (-1.2)
Remittance sent to Spouse	<b>1.2</b> (1.8)	<b>1.7</b> (2.5)	<b>2.5</b> (2.2)	<b>1.68</b> (2.9)		
Remittance sent to Father					<b>1.45</b> (2.0)	<b>0.89</b> (2.2)

**Table 4: Transnational Household (TNH) Financial decision making**

Dependent Variable: <i>QML (Huber/White) standard errors &amp; covariance</i> <i>(z-statistics in parentheses)</i>	Agree (yes) answers to these major financial decisions statements					
	<b>FDboth</b>		<b>FDUS</b>		<b>FDMX</b>	
	4.1	4.2	4.3	4.4	4.5	4.6
Answered yes to Mexico family autonomous		<b>-1.33</b> <i>-(4.0)</i>		<b>-1.9</b> <i>-(3.7)</i>		
Answered yes to cooperate decisions w/ family in Mex					<b>-1.2</b> <i>-(3.8)</i>	
Male migrant sends remittance to woman			<b>-2.01</b> <i>-(2.0)</i>	<b>-1.47</b> <i>-(2.9)</i>	<b>-0.62</b> <i>-(1.1)</i>	<b>-0.42</b> <i>-(1.2)</i>
Remittance sent to Spouse	<b>1.2</b> <i>(1.8)</i>	<b>1.7</b> <i>(2.5)</i>	<b>2.5</b> <i>(2.2)</i>	<b>1.68</b> <i>(2.9)</i>		
Remittance sent to Father					<b>1.45</b> <i>(2.0)</i>	<b>0.89</b> <i>(2.2)</i>
Constant	<b>-2.8</b> <i>-(2.1)</i>	<b>-2.44</b> <i>-(1.7)</i>	<b>-7.7</b> <i>-(2.0)</i>	<b>-2.7</b> <i>-(1.1)</i>	<b>-0.7</b> <i>-(0.3)</i>	<b>-0.8</b> <i>-(0.5)</i>
Number of Observations	114	114	114	114	114	114
McFadden R-squared	0.19	0.31	0.33	0.50	0.24	0.34
S.E. of regression	0.46	0.42	0.35	0.31	0.44	0.41
Obs with dep = 1	60	60	25	25	62	62
Obs with dep = 0	54	54	89	89	52	52
Estimation method	probit	probit	probit	logit	logit	probit

# Conclusions so far:

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- **Remittances *per se* increase** decision making power of sender.
- **Years in U.S.** reduces control of financial decisions, age increases control (gender dependent)
- **Use of cell phones** enhances Mexico decision making autonomy, not sender's.
- **Indigenous language users** lead's to more joint decision making patterns

# To summarize key results:

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- Cell phones are associated with more decentralized decision-making– women drive this result.
- Women send more money if they have less control over financial decision-making.
- Men and dialect speakers respond in more traditional ways: more control means more **remittances... not as sensitive to mobile phones**
- So why are women different?

# *Ongoing research*

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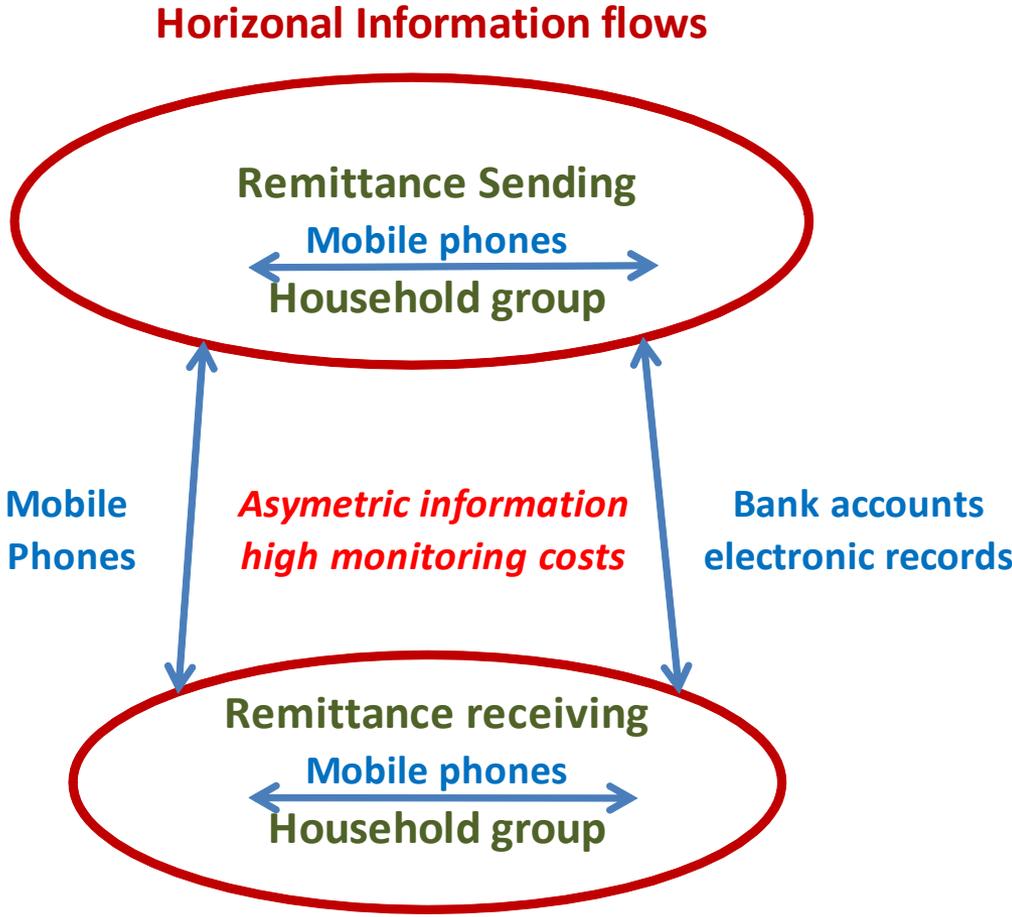
- **Gender aspects of decision to remit.**
- **Characteristics of Households in Mexico** (Conapo, 2008 Consumer survey)
- **Women immigrants tend to assert less control of financial decision in Mexico.**
- **How cell phones** enhances Mexico decision making autonomy, not sender's.
- **Traditional family ties, stronger among indigenous dialect speaking families**

# Why do cell phones diminish influence of remittance sender?

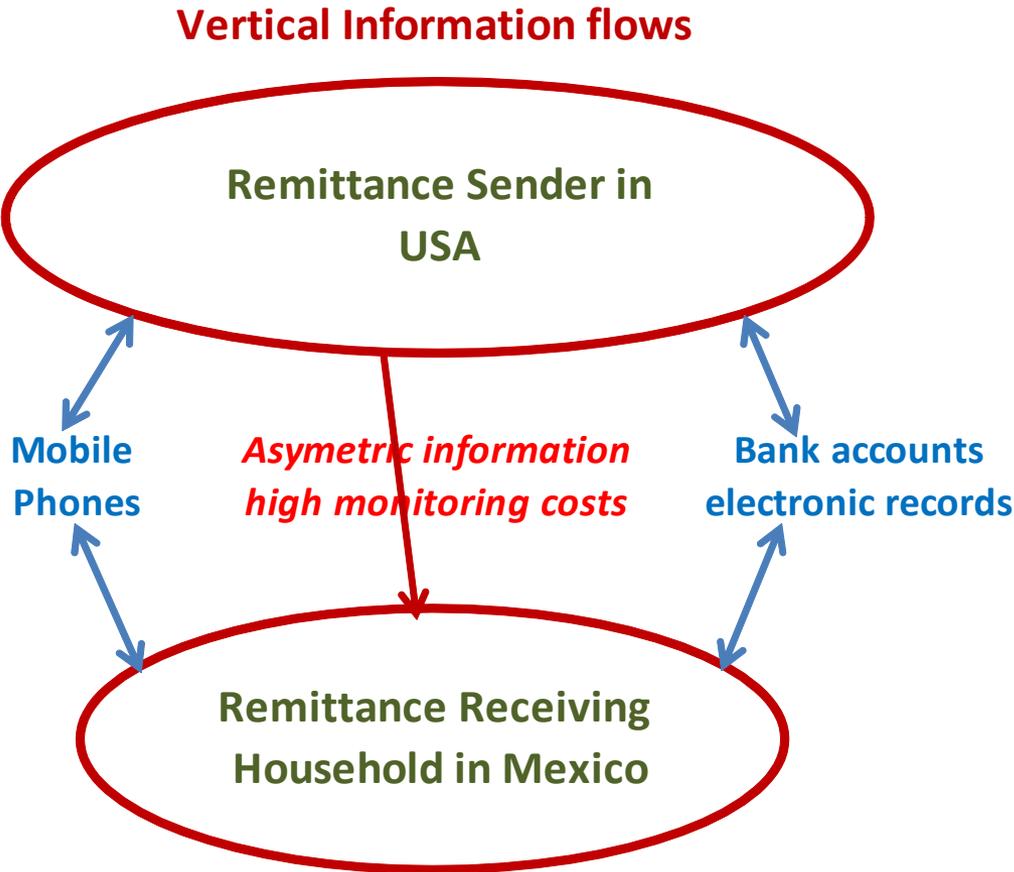
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- Cell phone remittance effect stronger for women, almost all female remittance senders.
- Similarly, cell phone autonomy effect largely reflects women migrants
- Mexico financial access effects strongest for women
- U.S. financial access effect strongest for women.
- Women more likely to respond FDMX or Fdboth, men dominate FDUS response.

# Horizontal information flows?



# Expected vertical information flows



# Gender dimensions:

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- Cell phone remittance effect stronger for women, almost all female remittance senders.
- Similarly, cell phone autonomy effect largely reflects women migrants
- Mexico financial access effects strongest for women
- U.S. financial access effect strongest for women.
- Women more likely to respond FDMX or Fdboth, men dominate FDUS response.

# Remittances Financial Services and technology: women's status in TNHs



**Norma Fuentes and Darryl McLeod  
Fordham University, New York**

**38<sup>th</sup> Annual Meeting of the National Association for  
Chicana and Chicano Studies, Pasadena, CA April 1<sup>st</sup>  
2011**

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# Why they came: the migration decision

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- Pulled by **family reunification & economic incentives**; they are mainly from very poor rural areas in states where average incomes are less than \$1500 per year per person.
- Most women have lived in **New York 5-10 years**, yet most still see migration as temporary: most expect to return, just 4 of the 12 women, mainly the single mothers, do not plan to return.
- All felt immigration had **greatly improved their lives** economically, and that of their families; but migration also had negative effects, mainly due to separation from family members.

# NY focus group participant profiles

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- 12 women aged 18 to 61 from Puebla and Guerrero living in NY for 5-25 years, all except the 18 year old had children: three were single mothers.
- All work, mainly as domestics or in the personal services sector (beauty parlor), one has her own business selling food, clothing and crafts from Mexico to fellow immigrants, but did not feel comfortable discussing her informal business, survey work profile similar (see Table 2 below).

# Cell phone use based on focus groups of twelve women from rural Mexico on :

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- 8 of 12 women have own phone or will buy when they return to work, all have access to cell phones in their household:
- Use and access to cell phone depends on time in NYC:
  - Among the recently arrived, rural, and low literacy women, spouse in charge of cell phone; and of its use.
  - Among those in NY for four years or more and employed, cell indicates more agency for women
  - Many use cell phones to keep track of teenage children, mainly daughters, here or back in Mexico.
  - Women's priorities for cell phone use include:
    - Speak and supervise children in US or Mexico***
    - To speak with families in Mexico or US***
    - To speak with sites of employment***
    - To speak with spouses***

# Focus group remittances:

- All send regular remittances from \$50 to \$250 per month; bi-weekly even those not employed **send spouse or partners' wages. Most send** money to Mexico to save for their return.
- Remittance decision typically made jointly with spouse/partner: amount contingent on household income after bills are paid.
- **Women's remittances tend to be "untargeted":** to support parents and children, or education of siblings male remittances more **'targeted'** at paying debts or investing in a house or business.
- About 2/3 have cell phones and about a third use bank accounts in Mexico, but very few (1) had a U.S. bank account in the U.S.

# Bank accounts: US and Mexico

- One third (4 of 12) of women households spouses/partners have bank accounts in NYC; Majority of women and **members in their NYC's households are unbanked.**
- Most fear that money in US banks may be lost due to undocumented status or eligibility of public health insurance for children.
- All women and their families in NYC save money, averages of \$200-\$400 per month.
- 8 of 12, women send their savings to Mexico.
- Parents in Mexico mainly in charge of savings; but accounts **also on parent's or other relatives' names.**
- Most families in need of financial education about banking, tax forms, and health insurance.

## Evidence from focus groups and other studies:

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- Women report cell phones are not used mainly for husband wife or daughter parent communication (unless daughter is teenager)
- Studies in Honduras in 2001 suggest women rarely call husband, do not initiate communication.
- But, focus group women report wanting more control over remittance accounts in Mexico.
- El Salvador Yang et al. (2008) again shows bank accounts increase remittances (gender?)

# Why are women different?

## Two possible explanations

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- **Altruism:** women are more altruistic than men, lots of evidence, Tirole et al. (2007) Swedish blood donor gender differences
- **Family values:** traditional female hierarchy w/in household. Women are socialized to self-sacrificing and not to demand decision making power.
- Early evidence **altruism**, or a different sense of cooperative outcomes and horizontal communication.

# Why are women different?

## One last regression

Dependent Variable: LOG(REMAN2)

Sample: 1 163

Method: Least Squares

Included observations: 92

Date: 11/10/10 Time: 10:18

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic
C	6.20	0.99	6.26
LOG((MTHUS)+YRSVISIT/12)^2	-0.03	0.01	-2.60
LOG(FOOD+CLTH3+ALLPHONE)	0.36	0.16	2.27
GOVPAY*Female	-0.57	0.22	-2.57
(MEXCHECK)*Female	0.90	0.18	5.06
M*EGOCC	-1.50	0.17	-9.03
F*EGOSAVE	-0.58	0.31	-1.85
F*MOBOTH-MOBUS	0.08	0.02	3.36
<b>Dknow*FDMex*Female</b>	<b>0.45</b>	<b>0.24</b>	<b>1.86</b>
<b>FDUS*FDboth*M</b>	<b>0.39</b>	<b>0.18</b>	<b>2.16</b>
R-squared	0.35	Mean dependent var	
Adjusted R-squared	0.28	S.D. dependent var	
S.E. of regression	0.74	Akaike info criterion	
Sum squared resid	44.65	Schwarz criterion	
Log likelihood	-97.28	Hannan-Quinn criter.	
F-statistic	4.93	Durbin-Watson stat	

# Fordham NY immigrant survey targets rural residents of Guerrero & Puebla...

- larger immigration corridor project sponsored by UCLA-NAID and the Packard foundation
- Targets transnational families at both ends of the NY-Mexico corridor

## Municipios in Guerrero:

Tlapa De Comonfort  
Huamuxtitlan  
Xochihuehuetlan  
Olinala  
Alcozauca De Guerrero  
Xalpatlahuac  
Alpoyeca



## Puebla Municipios:

Acajete, Atlixco Puebla  
Huaquechula  
Izucar De Matamoros  
Acatlan  
San Pedro Cholula  
Tehuizingo  
Tulcingo or Tehuacan

# Key research issues

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- 1) How women migrating from poor rural areas of Mexico with low literacy adapt to modernity: living in Manhattan and Bronx?
- 2) Does migration, remittances and technology speed the labor market integration of women and their families in New York and Mexico?
- 3) What role if any do remittances and ICT (cell phones or the internet) play in this process?
- 4) How do women use financial services and cell phones in New York and in Mexico? Does new technology ease the transition from informal to more formal financial markets with access to credit, small loans and savings accounts?

# Sources of evidence:

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- ❑ Preliminary results from survey interviews of about 150 migrant households, 2/3 headed by women born in Mexico.
- ❑ Five focus groups including 34 Mexican women immigrants ages 18-65 originating mainly from poor, rural municipalities in Puebla and Guerrero, Mexico.
- ❑ Informal interviews with local community leaders, credit union owners and community organizers and discussions a November 19<sup>th</sup> **2008 Workshop on “Migration, Remittance and Financial Inclusion”**
- ❑ Census data on migration of women to the U.S. by birthplace relating migration, remittances to access to technology and finance.

❑

# For women, mobile banking might:

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- Ease work-family tradeoffs
- Increase personal safety
- Increase employment opportunities (calls from potential and existing employers)
- Reduce personal cost of migration
- Enhanced financial access both in the U.S. and in Mexico
- **Facilitate women's business development in Mexico (assets controlled by women).**

# Migration of women trends & literature:

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- Traditionally remittance recipients, but share of women migrating and working is increasing:

**Table A-1 Share of women born in Mexico residing in the U.S. rose about 60% from 1990 to 2000**

Age	1990	2000	Change	
16-25	4.9	7.7	2.8	57%
26-35	7.7	12.6	4.9	64%
36-45	7.5	11.9	4.4	59%

Source: Chiquitar and Hanson (2005) based on samples from XII and XIII Censo General de Poblacion y Vivendi

# Literature finds mixed benefits of international migration for women... social & personal costs

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- Positive overall but some negative impacts rising labor market participation, improved health and literacy see Fuentes (2007) Woodruff (2007); Ehrenreich and Hochschild (2002); Lopez Calva (2005) literacy; Molina and McLeod (2007) find female enrollments increase... more **benefits than total trade...**
- See focus groups responses (below)
- Recent world bank volume *International Migration of Women* opens with quote from H.E. Ellen Johnson-Sirleaf, President of Liberia: ***"As women's roles change and they begin to assume a larger economic role within the family, they increasingly look abroad for sources of livelihood and more competitive wages for their labor."***

# Remittances and female school enrollments impacts mixed

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- ❑ Cox-Edwards and Ureta (2003) find remittances greatly increase school retention in El Salvador.
- ❑ De la Briere (2002) find females remit more and **parents invest more in girl's education...**
- ❑ Boucher, Stark and Taylor (2005) find internal but not international migration increases schooling in rural Mexico –

# Cell phones, ICT and gender bias and benefits

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- A number of UN studies find ICT (internet) bias against women, especially Africa.
- In Kenya and South Africa cell phone bank accounts are 60-70% used by men (Whizzit and MPESA).
- But ICT also potential for benefits for women: for access to medical and emergency services, self-employment and managing family-**work conflicts...**

**Table A-2: Hispanics become avid cell phone users**  
 (the percentage of cell owners in each group)

<b>Experiences and attitudes</b>	Whites N=979	Blacks N=156	<b>109 Hispanic English- speakers</b>
I used my cell phone in an emergency and it really helped	73%	78%	<b>83%</b>
I often make cell phone calls to fill up free time traveling or waiting for someone	38%	52%	<b>57%</b>
I have occasionally been shocked by my monthly cell phone bill	32%	39%	<b>57%</b>
Too many people try to call me because they know I have a cell phone	19%	33%	<b>37%</b>
When on my cell phone, I'm not always truthful about exactly where I am	18%	32%	<b>39%</b>
<b>Cell phone features used:</b>			
Send and receive text messages	31%	42%	<b>54%</b>
Take still pictures	26%	23%	<b>56%</b>
Use the internet	12%	17%	<b>29%</b>
Play music	5%	11%	<b>16%</b>

Source: Pew Internet & American Life Project, Associated Press, AOL cell phone survey. March 8-28, 2006. N=1,503 (752 contacted on landlines and 751 contacted on their cell phones). In all, 1,286 cell users are in the sample. The margin of error for the cell-using population is ±3%.

# Pew IAL study found some gender differences in U.S. cell phone use

<b>Mobile men and women</b>		
<i>Percentage of men and women who use cell phones</i>		
	<i>Men</i>	<i>Women</i>
<b>Experiences and attitudes</b>		
I have used my cell in an emergency and it really helped	<b>71%</b>	<b>77%</b>
Frequently encounter people using cells in a loud or annoying manner	<b>46%</b>	<b>53%</b>
Make most cell phone calls during the hours when the minutes are free	<b>39%</b>	<b>48%</b>
<b>Features they use or want</b>		
Use cells to take pictures	<b>34%</b>	<b>23%</b>
<b>Would like this feature</b>	<b>15%</b>	<b>23%</b>
Use cells to access the internet	<b>17%</b>	<b>12%</b>
<b>Would like this feature</b>	<b>15%</b>	<b>17%</b>

*Source: Pew Internet & American Life Project, Associated Press, AOL cell phone survey. March 8-28, 2006. N=1,503 (752 contacted on landlines and 751 contacted on their cell phones). In all, 1,286 cell users are in the sample. The margin of error for the cell-using population is ±3%*

# Work Integration: formal and informal

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- Most found work in NYC within 1-2 months of arrival (similar to the findings of Fuentes, 2007)
- Most women have worked for wages outside the home, survey: about 60% are working now.
- Those at home still contributed to household income with informal paid work including: preparing meals for single men they knew or in their households; by babysitting for other women; or by selling products (tamales, mole, spices, clothes, ethnic crafts and art) mainly to other Latinos and immigrants.

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## Table 1: Income and Remittances

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	<u>Men</u>	<u>Women</u>
Average annual income	\$16,420	\$7,527
Average household income	\$30,840	\$39,687
Remittances sent by household	\$5,066	\$8,708
Remittances sent by man/woman	\$3,992	\$3,063
Remittances as a share of		
individual interviewed's income	16%	22%
household income	24%	41%
Number of remittances sent annually	14	10

---

*(preliminary tabulations for 14 women; 12 men)*

## — Table 3: Cell Phones and Bank Accounts survey results

	<u>Men</u>	<u>Women</u>
Have own cell phone?	50%	57%
Have bank account?		
In New York	50%	36%
Checking	33%	29%
Savings	16%	7%
In Mexico	17%	0%
Checking	0%	
Savings	17%	

*(preliminary New York survey results for 14 women; 12 men)*

## Table 2: Work Integration survey results

	<u>Men</u>	<u>Women</u>
Currently working	92%	43%
Worked in the past	100%	100%
Sector Employed		
Manufacturing		20%
Construction	18%	
Food services	55%	20%
Domestic services	9%	45%
Health and personal services	18%	15%

*(preliminary New York survey results for 14 women; 12 men)*

# Ongoing Research projects

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- Focus on nexus between remittances, women and technology: refine survey and focus group questions regarding technology use, remittances, **financial services & women's status** .
- Use NY networks/MFIs to arrange matching focus groups in rural areas of the DR and Puebla.
- Use census data on women immigrants to U.S. to assess cross country impacts of migration and access to technology and financial services on status of women: labor integration, education, business ownership, access to micro finance.
- Community groups: financial development and remittances are linked across countries: credit unions in NY linked to

# Survey results so far:

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- About 75% of women and 90% of men have a cell phone, 75% in both countries (extended family). More in Mexico than in the U.S.
- Women in the U.S. longer more likely to have cell phone and jobs (and businesses).
- More than half plan to return, hope to start business in Mexico, a few already have businesses in Mexico.

# Research agenda

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- Look at differences in women immigrants, both as primary respondents and family members.
- Strong evidence that cell phone access fairly equal by sex (more texting)
- Some limited evidence cell phones improve quality of life (safety) and access to work and family
- Direction of causality– gender or length of time here