The International Transmission of Local Economic Shocks Through Migrant Networks

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Motivation

- Economists often think of international trade and capital flows as key ways the global economy is integrated
- Movement of people may also integrate labor markets between countries
  - Understudied because of lack of data
- **This paper:** We use new data to study how the movement of people propogates economic shocks across the U.S.-Mexico border.

Background - Stylized Facts

- Immigrants cluster in locations with large co-ethnic populations
- Networks increase migration probability (Bartel 1989, Card 2001, McKenzie and Rapoport 2010)
- Networks facilitate migration from the same origin (Munshi 2003)
- Migrants' location choices respond to labor demand (Borjas 2001, Cadena 2013, Cadena and Kovak 2016)

Research Question

What happens in sending regions when migrants lose access to strong foreign labor market prospects?

- U.S.-Mexico a useful context:
  - Mexican migrants represent 30% of all U.S. immigrants
  - Unique migration dataset to construct migrant networks for unauthorized immigrants
- Within-Mexico variation in U.S. destination mix allow us to leverage geographic variation in the depth of the U.S. Great Recession
- Findings:
  - Mexican regions more exposed to U.S. employment declines experienced a larger **increase** in return migration and a larger **decrease** in emigration
  - Additional sending region outcomes coming soon.

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Contribution

- Migration in response to labor demand
  - Labor market shocks affect migrants' location choices (Borjas 2001, Cadena 2013, Cadena and Kovak 2016)
  - We find that Mexican migrants respond to a local decline in U.S. labor market prospects by moving *internationally* (consistent with Caballero, Cadena, and Kovak 2018)
- Effects of Labor Demand Shocks on sending communities
  - Occupational choices, entrepreneurship, education (Schnabl 2007, Conover et al 2015, Theoharides 2017)
  - Ours is first analysis to leverage within U.S. variation in labor demand

Key Ingredient: Network Connections from Mexico to US

- Research design requires variation in "U.S. labor demand" for (potential) migrants from different sources
- Key Insight: different sources connected to different destinations via pre-existing networks
- Network Measure:

$$\pi_s \equiv \frac{m_{sd}}{M_s} = \frac{m_{sd}}{\sum_d m_{sd}}$$

  - s: Mexican source
  - d: U.S. destination

Most data has sub-national geography in only one country

- American Community Survey (ACS): source country, destination state
- Mexican Census: destination country, source state

Other specialized datasets problematic

- Available data : MMP, ENADID, and EMIF
  - Sparse coverage (MMP)
  - Coarse geography (ENADID and EMIF)
  - Small sample (All)
  - Question/sampling frame non-standard (EMIF, planned migration among those about to cross border)

Our solution: Matrícula Consular de Alta Seguridad (MCAS)

- ID card issued by Mexican consulates in all 50 U.S. states
- Cardholders mostly unauthorized Mexican migrants
- Used as an official form of ID in the U.S.
- Valid for 5 years

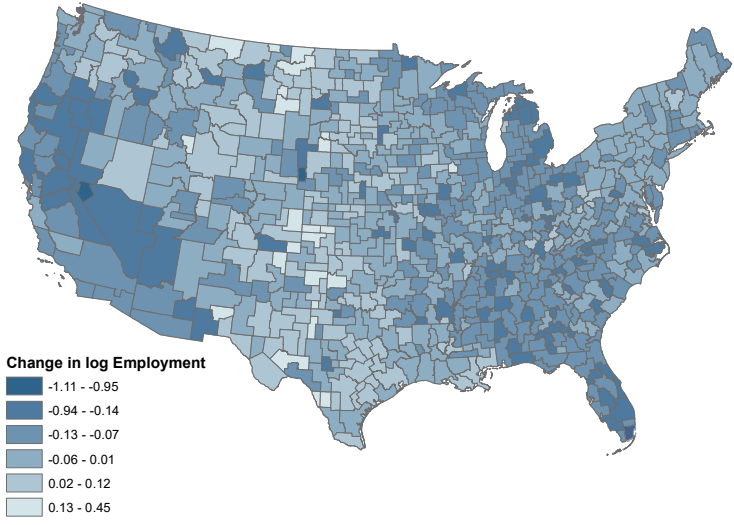
MCAS data set

- MCAS data set contains ID card counts by issuance year, place of birth in Mexico and place of residence in the U.S.
  - 9,269,038 MCAS were issued from 2006-2016
- Caballero, Cadena, and Kovak (2018) validated the MCAS dataset
  - Use **publicly** available tabulations at the *municipio*-U.S. **state** level
- This paper: we use data from a **customized request**
  - Migrants' *municipio* of birth in Mexico
  - Migrants' **county** of residence in the United States
    - ★ Allows us to measure shocks at the local labor market level (we aggregate to CZ)

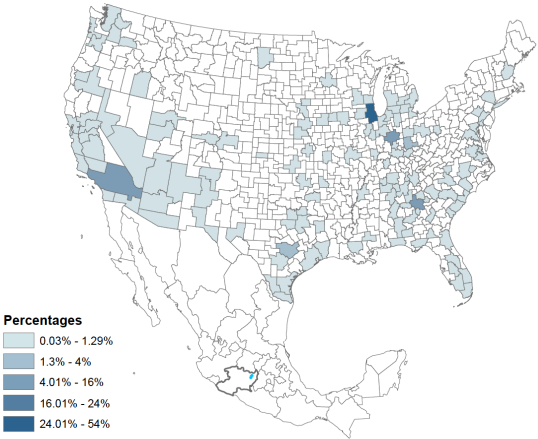
Identifying Demand Shocks

- Identifying changes in employment is challenging
  - Use recessionary environment to identify employer-driven changes in employment
- To generate useful variation in source-specific demand shocks we need:
  1. Spatial variation in demand changes
  2. Variation in destination mix, especially among sending *municipios* close to each other

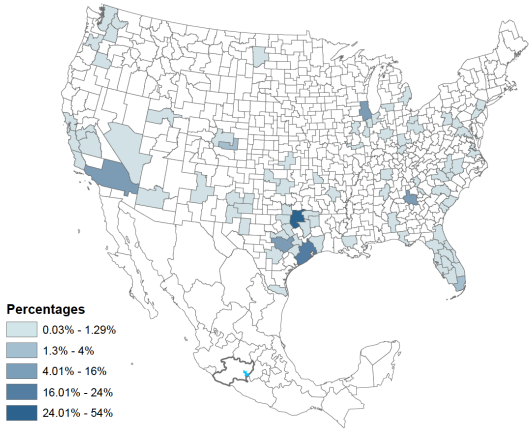
Changes in Labor Demand across the U.S. due to the Great Recession



Within-state variation in destination CZs ($\frac{m_{sd}}{M_s}$)



Destinations for Migrants Born in Hidalgo



Destinations for Migrants Born in Tiquicheo

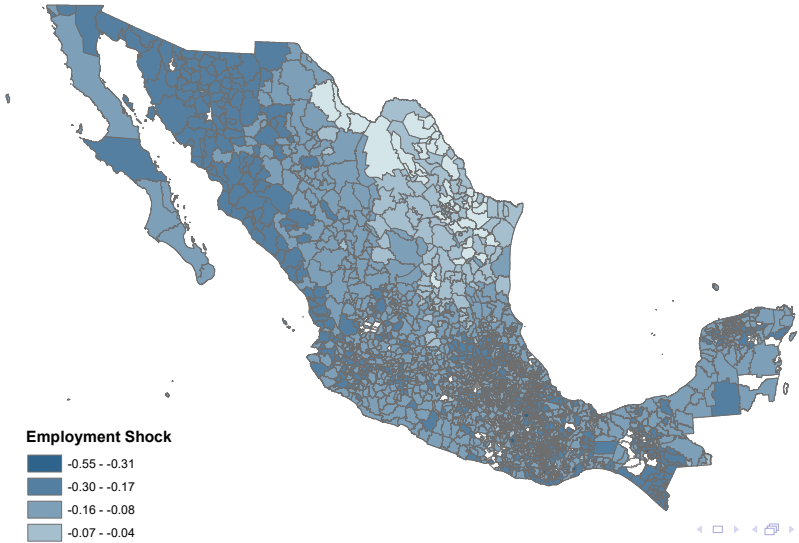
Employment Shock Measure

- U.S. labor demand for each Mexican source:

$$D_s = \sum_d \frac{m_{sd}}{M_s} \triangle L_d$$

  - $\frac{m_{sd}}{M_s}$: share of Mexican migrants from source s living in commuting zones (CZ) d in 2006
  - $\triangle L_d \equiv \sum_i \frac{L_{id}^{mex}}{L_d^{mex}} (\log(L_{id}^{2010}) - \log(L_{id}^{2006}))$: change in log employment (2006-2010) in CZ d for the type of jobs held by Mexican-born migrants in destination d
  - Use CBP and ACS data to get employment and demographics

U.S. employment shock across Mexican *municipios* (D_s)



Empirical Specification

- Evaluate the effect of the Great Recession as a quasi-experiment
- Treatment is size of the network-weighted demand shock
- Relate outcome variable to employment shock measure:

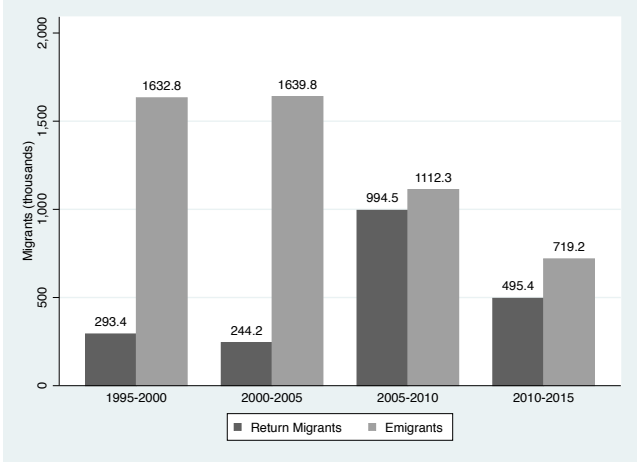
$$\triangle Y_s = \beta_0 + \beta_1 D_s + \alpha_r + \varepsilon_s \quad (1)$$

  - $Y_s = log(y_{st}) - log(y_{st-5})$
  - y_{st}: return migration or emigration rate for *municipio s* at Census year *t*
  - α_r: Mexican state fixed effects

Migration Outcomes

- Return Migration Rate
  - Use 2000 and 2010 Mexican Census and 2005 *Conteo*
  - *s*: Mexican *municipio s*
- Emigration Rate
  - Use 2000 and 2010 Mexican Census
  - Misses whole-household emigrants; smaller sample size

Decreasing Net US-Mexico Migration during the Great Recession



Effects of the Great Recession on Return Migration Rates

	Dependent Variable: *Return Migration Rate*		
	Change in Log Return Migration Rate 05-10 (1)	*Change in Log Return Migration Rate 05-10* (2)	*Log Return Migration Rate 10* (3)
Employment Shock	-2.320***	-3.096***	-1.768***
	(0.428)	(0.472)	(0.443)
Change in Log Return Migration Rate 95-00		-0.339***	-0.228***
		(0.038)	(0.030)
Log Return Migration Rate 05			0.667***
			(0.045)
Constant	0.703***	0.305***	-1.179***
	(0.061)	(0.063)	(0.245)
State FE	Yes	Yes	Yes
Observations	1332	1332	1332
R-squared	0.243	0.371	0.751

Heteroskedasticity robust standard errors clustered at the Mexican state-level are shown in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Effects of the Great Recession on Emigration Rates

	Dependent Variable: Emigration Rate	
	Change in Log Emigration Rate 00-10	*Log Emigration Rate 10*
	(1)	(2)
Employment Shock	0.925	1.655**
	(1.253)	(0.798)
Log Emigration Rate 00		0.572***
		(0.048)
Constant	-0.419**	-2.893***
	(0.178)	(0.300)
State FE	Yes	Yes
Observations	1332	1332
R-squared	0.402	0.191

Heteroskedasticity robust standard errors clustered at the Mexican state-level are shown in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Estimates of the Effect on Return Migration, by gender

	Change in Log Return Migration Rate		
	(1)	(2)	(3)
Panel A. Mexican Men			
Employment Shock All	-2.339***		
	(0.395)		
Employment Shock Men		-2.012***	-2.443***
		(0.325)	(0.505)
Employment Shock Women			1.353
			(1.658)
Panel B. Mexican Women			
Employment Shock	-2.241***		
	(0.576)		
Employment Shock Men			-2.226***
			(0.267)
Employment Shock Women		1.273	-1.476
		(1.206)	(1.114)
Panel C. Mexican Children			
Employment Shock	-1.993**		
	(0.907)		
Employment Shock Men		-1.394*	-1.667*
		(0.733)	(0.965)
Employment Shock Women			0.832
			(2.122)

Heteroskedasticity robust standard errors clustered at the Mexican state-level are shown in parentheses.
All specifications include Mexican state fixed effects.

Estimates of the Effect on Emigration, by gender

	Log Emigration Rate 05-10		
	(1)	(2)	(3)
Panel A. Mexican Men			
Employment Shock All	1.702*		
	(0.927)		
Employment Shock Men		1.816**	2.640**
		(0.780)	(1.097)
Employment Shock Women			-0.318
			(2.134)
Panel B. Mexican Women			
Employment Shock All	1.679*		
	(0.902)		
Employment Shock Men			2.322***
			(0.604)
Employment Shock Women		0.631	-2.237
		(1.563)	(1.543)
Panel C. Mexican Children			
Employment Shock All	3.083*		
	(1.511)		
Employment Shock Men		2.675**	3.329***
		(1.258)	(1.150)
Employment Shock Women			-1.812
			(2.221)

Heteroskedasticity robust standard errors clustered at the Mexican state-level are shown in parentheses.
All specifications include Mexican state fixed effects.

Conclusions

- The Great Recession moved migrants back to Mexico and slowed emigration
- Local labor markets shocks moved through networks across international borders
- Heterogeneous migration responses by gender
  - Evidence of families moving together
- Next up: Estimate effects on local development outcomes:
  - employment, health, child mortality, small business formation, investment in durables, and education