

# Do Remittances Boost Economic Development? Evidence from Mexican States

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# Question

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- How do remittances affect economic development in the home country?
  - Labor markets
  - Wage distribution
  - School enrollment
- Existing literature contradictory
- This study's contribution
  - Exploit variation in panel of Mexican states
  - Address endogeneity of remittances, migration

# Remittances to Mexico

Millions \$  
Real, SA



# Remittances as % state GDP



# Effects of Remittances

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- On recipient households
  - Increase income and consumption
    - Reduce poverty but maybe also labor supply
  - Increase investment (for credit constrained hh)
    - Human, physical capital; self-employment
- On the greater economy/labor force
  - Aggregate demand shifts out, economy should grow and prices, wages and employment rise
  - Income, wage inequality may worsen
- Confounded by migration effects

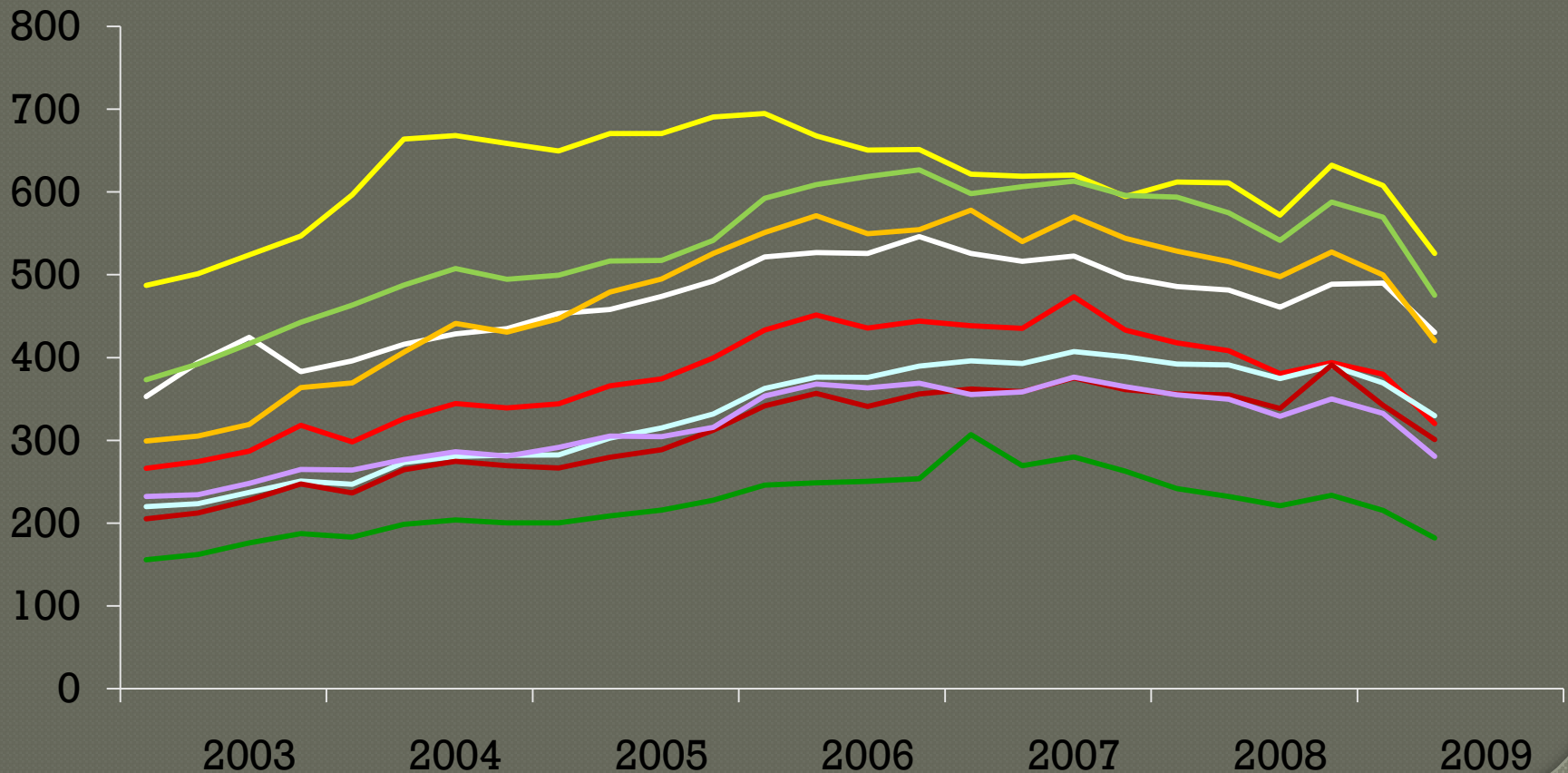
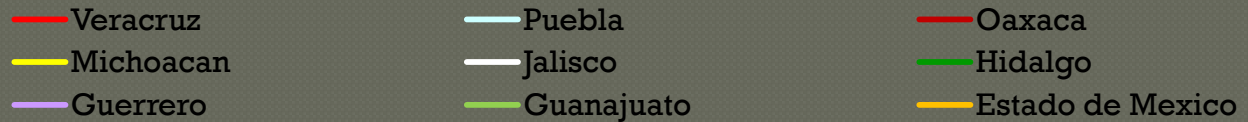
# Data

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- Remittances 2003-2007, Banco de Mexico
- Employment and wages, IMSS
- Unemployment rate, labor force, ENOE
- Enrollment rates & wage distribution, Segundo Informe
- FDI, Secretaria de Economia
- Net migration, EMIF
- Birth cohorts, population, CONAPO
- US wages, QCEW & CPS

# Remittances by state

Millions \$  
Real, SA



# Remittances by state

Index, Q1 2003=100

Millions \$

Real, SA

Veracruz

Michoacan

Guerrero

Puebla

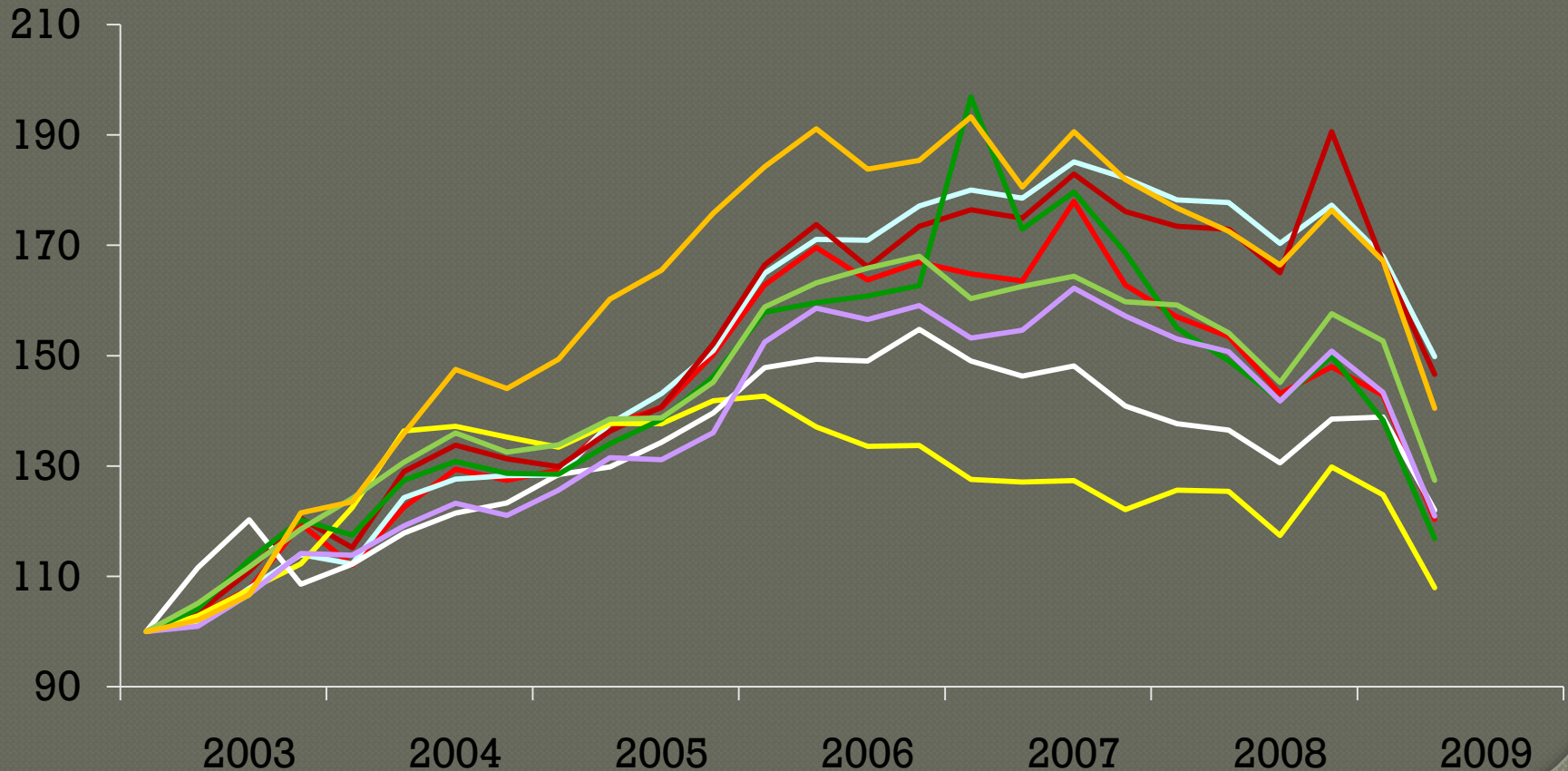
Jalisco

Guanajuato

Oaxaca

Hidalgo

Estado de Mexico





# Table 1, Descriptive Statistics

	Mean	S.D.	High	Low
Remittances	<b>164.70</b>	<b>156.70</b>	<b>694.96</b>	<b>4.08</b>
Employment	<b>413.71</b>	<b>447.34</b>	<b>2587.93</b>	<b>69.52</b>
Wage	<b>183.45</b>	<b>29.25</b>	<b>286.79</b>	<b>126.66</b>
FDI	<b>165.18</b>	<b>573.19</b>	<b>8278.44</b>	<b>-293.13</b>
Unemp. Rate	<b>3.27</b>	<b>1.31</b>	<b>7.20</b>	<b>0.40</b>
Labor force (total)	<b>1338.47</b>	<b>1168.83</b>	<b>6153.27</b>	<b>208.42</b>
Net int. migration flow	<b>-17.77</b>	<b>19.81</b>	<b>24.61</b>	<b>-68.92</b>
U.S. wkly. wage, CEW	<b>885.50</b>	<b>77.33</b>	<b>1328.3</b>	<b>675.63</b>
U.S. med. wkly. wage, CPS	<b>617.32</b>	<b>24.28</b>	<b>679.80</b>	<b>556.82</b>
Percent, males 0-1	<b>3.13</b>	<b>2.70</b>	<b>12.7</b>	<b>0.31</b>

# Table 1, continued

	Mean	S.D.	High	Low
Share, $\leq 1$ times MW	<b>0.17</b>	<b>0.10</b>	<b>0.50</b>	<b>0.02</b>
Share, 1-2 times MW	<b>0.26</b>	<b>0.05</b>	<b>0.36</b>	<b>0.10</b>
Share, 2-3 times MW	<b>0.24</b>	<b>0.05</b>	<b>0.34</b>	<b>0.09</b>
Share, 3-5 times MW	<b>0.21</b>	<b>0.05</b>	<b>0.36</b>	<b>0.09</b>
Share, $>5$ times MW	<b>0.13</b>	<b>0.05</b>	<b>0.30</b>	<b>0.04</b>
Enrollment rate, primary	<b>0.95</b>	<b>0.04</b>	<b>1.06</b>	<b>0.89</b>
Enrollment rate, secondary	<b>0.59</b>	<b>0.09</b>	<b>0.95</b>	<b>0.40</b>
Enrollment rate, university	<b>0.04</b>	<b>0.01</b>	<b>0.07</b>	<b>0.02</b>
Enrollment rate, technical	<b>0.02</b>	<b>0.01</b>	<b>0.06</b>	<b>0.01</b>

# Methods

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- OLS
- $\text{EconDev}_{st} = a + b\text{Remittances}_{st} + c\text{FDI}_{st} + d\text{Mig}_{st} + e\text{LaborForce}_{st} + f\text{Time}_t + g\text{State}_s + \text{error}_{st}$
- 2SLS
  - US wages as IV for remittances (MMP weighted)
  - Mexican birth cohorts 1973-1977 as IV for migration
- Full sample and subsample of high-migration states

## Table 2, Employment and Wage Effects of Remittances

	All		High-Migration	
OLS	(1)	(2)	(3)	(4)
Ln(Employment)	<b>0.04**</b>	<b>-0.03*</b>	<b>0.05**</b>	<b>-0.01</b>
Ln(Wages)	<b>0.03**</b>	<b>-0.01</b>	<b>0.03**</b>	<b>-0.00</b>
Unemployment rate	<b>-0.15</b>	<b>-0.13</b>	<b>-0.09</b>	<b>-0.21</b>
2SLS				
Ln(Employment)	<b>0.09**</b>	<b>0.35</b>	<b>0.06**</b>	<b>0.15*</b>
Ln(Wages)	<b>0.04**</b>	<b>0.12</b>	<b>0.03**</b>	<b>0.06</b>
Unemployment rate	<b>-0.91*</b>	<b>-2.95</b>	<b>-0.98*</b>	<b>-2.78**</b>
State fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	No	Yes	No	Yes

# Table 3, Wage Distribution Effects of Remittances

	All		High-Migration	
OLS	(1)	(2)	(3)	(4)
Share, ≤1 times MW	<b>-0.99**</b>	<b>-0.95**</b>	<b>-1.08*</b>	<b>-1.34**</b>
Share, 1-2 times MW	<b>-0.28</b>	<b>0.32</b>	<b>-0.39**</b>	<b>0.23</b>
Share, 2-3 times MW	<b>0.26</b>	<b>0.54*</b>	<b>0.16</b>	<b>0.79**</b>
Share, 3-5 times MW	<b>0.84**</b>	<b>0.44**</b>	<b>0.98**</b>	<b>0.39</b>
Share, >5 times MW	<b>0.16</b>	<b>-0.34</b>	<b>0.33**</b>	<b>-0.07</b>
2SLS				
Share, ≤1 times MW	<b>-2.50**</b>	<b>-1.94**</b>	<b>-1.83**</b>	<b>-2.42**</b>
Share, 1-2 times MW	<b>-1.78*</b>	<b>0.57</b>	<b>-0.79</b>	<b>0.71</b>
Share, 2-3 times MW	<b>0.24</b>	<b>0.70</b>	<b>-0.18</b>	<b>1.25*</b>
Share, 3-5 times MW	<b>2.49**</b>	<b>0.84**</b>	<b>2.06**</b>	<b>0.70</b>
Share, >5 times MW	<b>1.55**</b>	<b>-0.18</b>	<b>0.75**</b>	<b>-0.24</b>
State fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	No	Yes	No	Yes

Table 4, School Enrollment Effects of Remittances

OLS	(1)	(2)	(3)	(4)
Enrollment rate, primary	0.16	0.00	0.35*	0.14
Enrollment rate, secondary	0.43*	0.00	0.45*	-0.20
Enrollment rate, university	0.04**	-0.02	0.05**	-0.01
Enrollment rate, technical	0.02	-0.02	0.02	-0.06
2SLS				
Enrollment rate, primary	1.09**	-0.17	0.92**	0.08
Enrollment rate, secondary	1.45**	0.51	1.22**	0.30
Enrollment rate, university	0.17**	-0.03	0.11**	-0.03
Enrollment rate, technical	0.11	-0.11	0.10	-0.11
State fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	No	Yes	No	Yes

# Conclusions

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## ○ Results suggest remittances

- Lead to significant labor market improvements in states with high migration.
- Improve the wage distribution by shrinking the fraction of lowest-paid and increasing the fraction of workers in the middle.