

Income in the border region, 1993- 2010



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NAFTA, in theory

- A brief review of trade theory: The Heckscher Ohlin Model:
 - The country that is abundant in a factor exports the good whose production is intensive in that factor.
- Therefore, the US exports and Mexico imports goods made with a lot of capital, science, and R&D: for example, technology products, vegetable oils, grains.
- Mexico exports and the US imports goods made with labor and tropical climate: for example, avocados, furniture, processed food, electronic assemblies, etc.
- Autos and auto parts: Intermediate, some of both.

A corollary of the Heckscher Ohlin Theorem

FACTOR PRICE EQUALIZATION (FPE): Trade in goods is equivalent to trading factor inputs, and therefore:

➔ Wages and returns to capital should equalize in the US and Mexico.

In other words, we should see a convergence in incomes.

But, FPE assumes the same technologies (and that output prices converge and both countries make both goods.)

Why might technologies be different?

- In a word: Institutions.
- For example,
 - Education,
 - Protection of property rights,
 - Regulatory environment,
 - National innovation systems,
 - Access to capital,
 - Rule of law, etc.

A natural experiment: The two Nogales

- See: *Why Nations Fail* by Acemoglu and Robinson.
- The two Nogales share a history, geography, culture, language
- The only difference is that one Nogales is in Mexico, the other in the US
- Hence, differences in prosperity are due to institutional differences between the US and Mexico.

Regional GDP in the two Nogales, 2010 (\$US, 2005)

- Nogales, Sonora: \$14,810 per person; versus
Nogales, Arizona: \$25,174 per person
 - Difference: \$10,364
- By comparison, United States: \$41,865; versus
Mexico: \$11,880.
 - Difference: \$29,985
- If the only difference between the two Nogales is
their institutions, then an institutional approach
explains about 34% of the gap ($10364/29985$).

A comparison of regional GDP: twin cities on the border, 2010 (\$US 2005)

<i>County</i>		<i>Municipio</i>		<i>Difference</i>
<i>San Diego</i>	47,778	<i>Tijuana</i>	11,688	36,090
<i>Imperial, CA</i>	29,731	<i>Mexicali</i>	11,250	18,482
<i>El Paso</i>	32,559	<i>Juárez</i>	12,233	20,326
<i>Val Verde (Del Rio)</i>	34,091	<i>Acuña</i>	17,333	16,759
<i>Maverick (Eagle Pass)</i>	24,289	<i>Piedras Negras</i>	16,391	7,898
<i>Webb (Laredo)</i>	27,660	<i>Nuevo Laredo</i>	12,862	14,798
<i>Hidalgo (McAllen)</i>	24,701	<i>Reynosa</i>	14,494	10,206
<i>Cameron (Brownsville)</i>	26,195	<i>Matamoros</i>	13,063	13,132

Is there convergence? It depends on the decade: Income differences

	<i>1993</i>	<i>2000</i>	<i>2010</i>
<i>San Diego-Tijuana</i>	23,499	30,375	36,090
<i>Imperial-Mexicali</i>	16,874	11,822	18,482
<i>Santa-Cruz-Nogales</i>	8,619	10,356	10,364
<i>El Paso-Juárez</i>	12,918	13,390	20,326
<i>Val Verde-Acuña</i>	6,150	7,382	16,759
<i>Maverick-Piedras Negras</i>	920	2,354	7,898
<i>Webb-Nuevo Laredo</i>	8,081	7,497	14,798
<i>Hidalgo-Reynosa</i>	6,887	5,888	10,206
<i>Cameron-Matamoros</i>	8,428	8,155	13,132
<i>US-Mexico</i>	24,155	28,640	29,985

Summing up the two tables

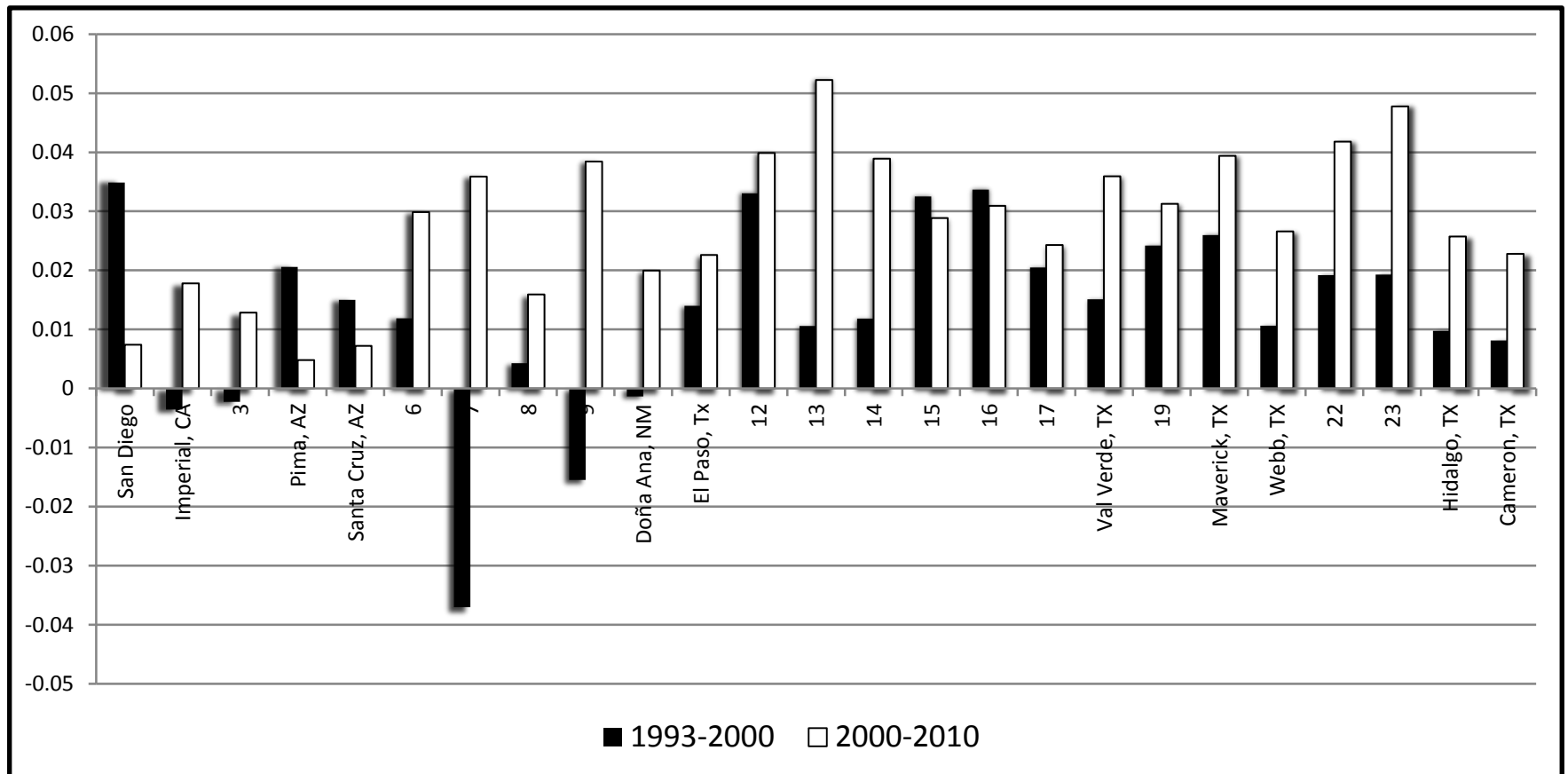
- Acemoglu and Robinson's preferred example for demonstrating the importance of institutions only explains about one-third of the difference in national income levels.
- Convergence in incomes appears to have begun in 1993-2000, but ended after that.
 - Conditional convergence may show a different pattern. Correcting for different education levels would likely show stronger convergence.

Education: Percent of the population, 25+, with 12 years or more of school

	1990	2000	2010
United States	75.20%	80.40%	85.39%
Border states	75.00%	76.85%	80.14%
Border counties	72.85%	73.80%	77.23%
Mexico	31.69%	29.86%	32.38%
Border states	35.93%	32.93%	36.55%
Border municipios	22.52%	27.29%	25.45%

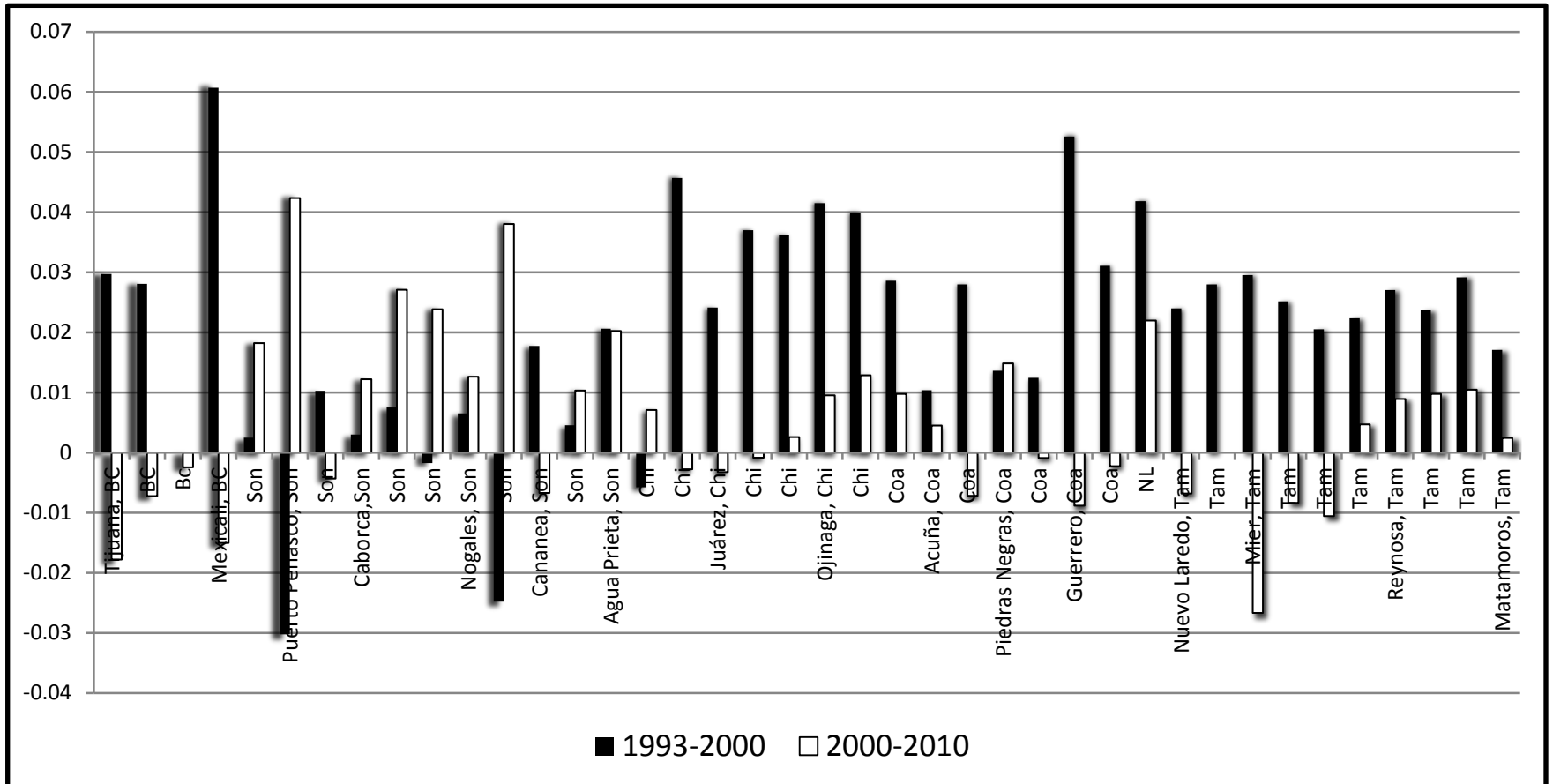
What happened to growth rates?

➔ Growth on the US side of the border increased, 2000 to 2010.



What happened to growth rates?

➔ Growth on the Mexican side of the border decreased, 2000 to 2010.



The speed-up in the US: Some hypotheses

- Texas escaped the worst of the sub-prime crisis. They do better than other parts of the border, but this does not explain the faster growth, 2000-2010.
- The shale gas boom (Eagle Ford, et. al.): Jobs, incomes, investment
- Less dependent on conditions in Mexican border municipios: Cross border shopping does not have as big an effect on border retail.
- Mexican middle class relocates to the US-side: Unknown size effect, but likely to be positive for US, negative for Mexico.

The slowdown in Mexico: Many possibilities

- Drug wars: but trade and FDI continue, border crossings fell more on US-Canada border
- Long wait times at the border: a known job killer
- Deportations by the US: unclear what the effects are
- The flight of the Mexican middle class: loss of human capital in Mexico
- Impact of US economic cycles (2001, 2007-09): constant vulnerability
- China—Entrance into the WTO, the Agreement on Textiles and Clothes.

Summing up

- During the 1980s and 1990s, the border location conferred advantages on Mexican municipalities: Most prominently, proximity to the US market at the moment Mexico began to re-make its economy with an outward orientation.
- In the first decade of the 2000s, the advantage became a disadvantage: Most notably with the hardening of the border after 9/11, the increased violence of the War on Drugs, and the rise of the anti-immigrant movement in the US. And China?
- The border is a bi-national institution, largely outside the control or influence of border citizens; by definition, the border is politically and economically exclusive, as opposed to inclusive.
- Has the border-institution become “extractive”?