Evaluating Social Policy in Latin America

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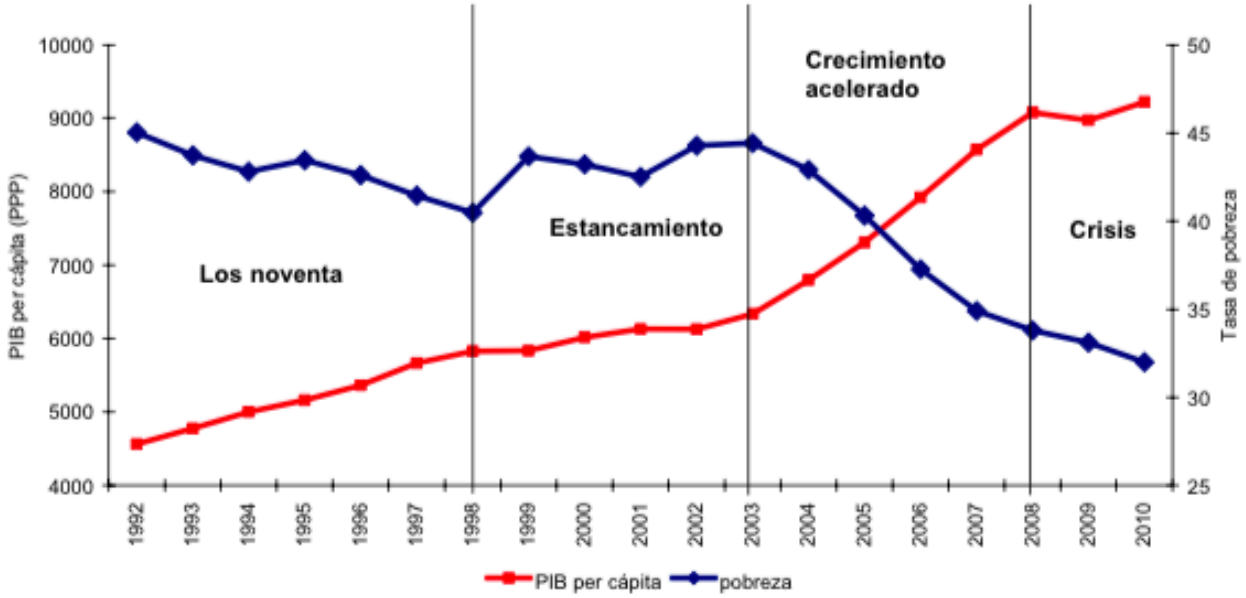
Poverty and Income in Latin America

Pobreza y PIB per cápita en América Latina, 1992-2010

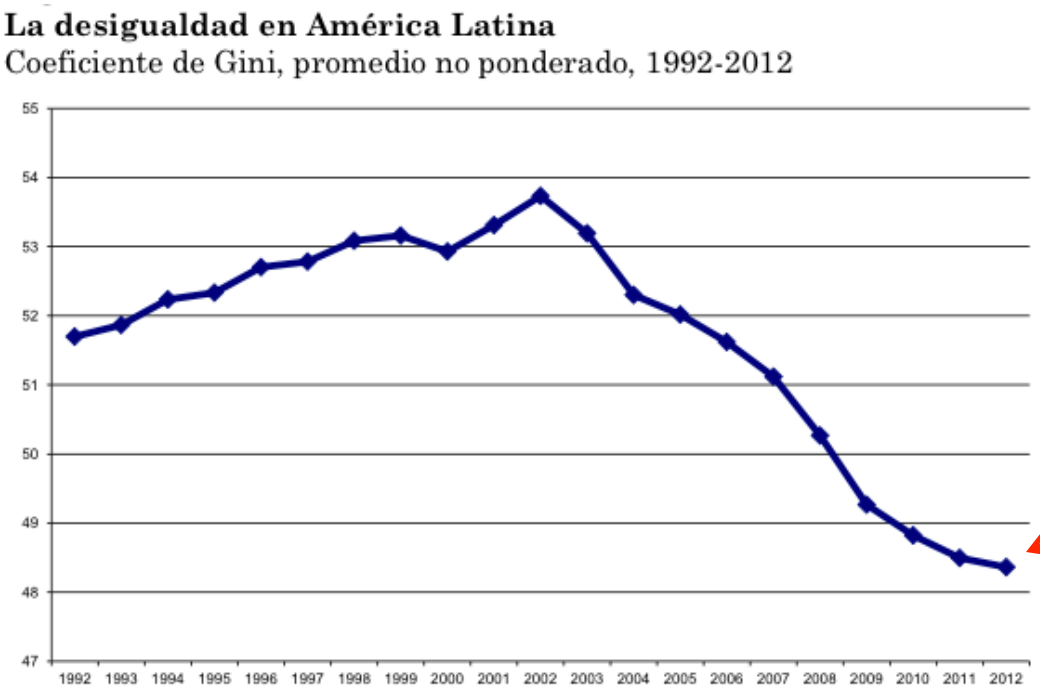


Fuente: SEDLAC (CEDLAS y Banco Mundial).
Nota: La tasa de pobreza se calcula con la línea de 4 dólares por día ajustados por paridad de poder adquisitivo (PPP). La línea de 4 dólares es similar a la mediana de las líneas de pobreza moderada elegidas por los gobiernos de los países latinoamericanos.

Source: http://cedlas.econo.unlp.edu.ar/eng/additional-screen.php?idP=7

Inequality in Latin America

The Gini coefficient: 0 is perfect equality, 100 is perfect inequality



United States (late 2000's): 37.8
Sweden (late 2000's): 25.9

48.3

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Five Policy Experiments

Paying mothers to keep kids in school (Progresa/Oportunidades)

Paying students, teachers, and administrators for high math test scores (ALI)

Nutritional supplements for kids (INCAP)

National health insurance

School vouchers (PACES)

1. School Vouchers (PACES in Colombia)

- PACES program (1991-1997)
- Distributed 125,000 vouchers
- Restricted to low-income high school students

- Distributed randomly (60%) to applicants
- Continuation conditional on performance
- Most graduating students take ICFES college entrance exam

Effect of PACES on Graduation Rates

- Compare voucher "winners" to voucher "losers"
- Proxy graduation with taking ICFES

TABLE 2—VOUCHER STATUS AND THE PROBABILITY OF ICFES MATCH

	Exact ID match		ID and city match		ID and 7-letter name match		ID, city, and 7-letter match	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	A. All applicants (N = 3542)							
Dependent var. mean	0.354		0.339		0.331		0.318	
Voucher winner	0.072	0.059	0.069	0.056	0.072	0.059	0.068	0.056
	(0.016)	(0.015)	(0.016)	(0.014)	(0.016)	(0.014)	(0.016)	(0.014)
Male		−0.052		−0.053		−0.043		−0.045
		(0.014)		(0.014)		(0.014)		(0.014)
Age		−0.160		−0.156		−0.153		−0.149
		(0.005)		(0.005)		(0.005)		(0.005)

Average graduate rates

Source: Angrist, Bettinger and Kremer, "Long-Term Educational Consequences of Secondary School Vouchers: Evidence from Administrative Records in Colombia," *American Economic Review* (2006)

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Effects of vouchers

Source: Angrist, Bettinger and Kremer, "Long-Term Educational Consequences of Secondary School Vouchers: Evidence from Administrative Records in Colombia," *American Economic Review* (2006)

Effect of PACES on ICFES Scores

- Can't simply compare scores of "winners" and "losers" because program induced more voucher recipients to take the test.

Bad Estimates

	OLS with score > 0 (1)	OLS censored at 1% (2)	Tobit censored at 1% (3)	Tobit censored at 10% (4)
A. Language scores				
Full sample				
Dep var mean	47.4	37.3	37.3	42.7
	(5.6)	(8.0)	(8.0)	(4.7)
Voucher effect	0.7	1.14	3.29	2.06
	(0.33)	(0.24)	(0.70)	(0.46)
Girls				
Dep var mean	47	37.6	37.6	42.8
	(5.7)	(8.1)	(8.1)	(4.7)
Voucher effect	0.74	1.04	2.88	1.86
	(0.45)	(0.34)	(0.91)	(0.59)
Boys				
Dep var mean	47.8	37	37	42.5
	(5.5)	(7.9)	(7.9)	(4.6)
Voucher effect	0.66	1.25	3.77	2.29
	(0.48)	(0.34)	(1.10)	(0.71)

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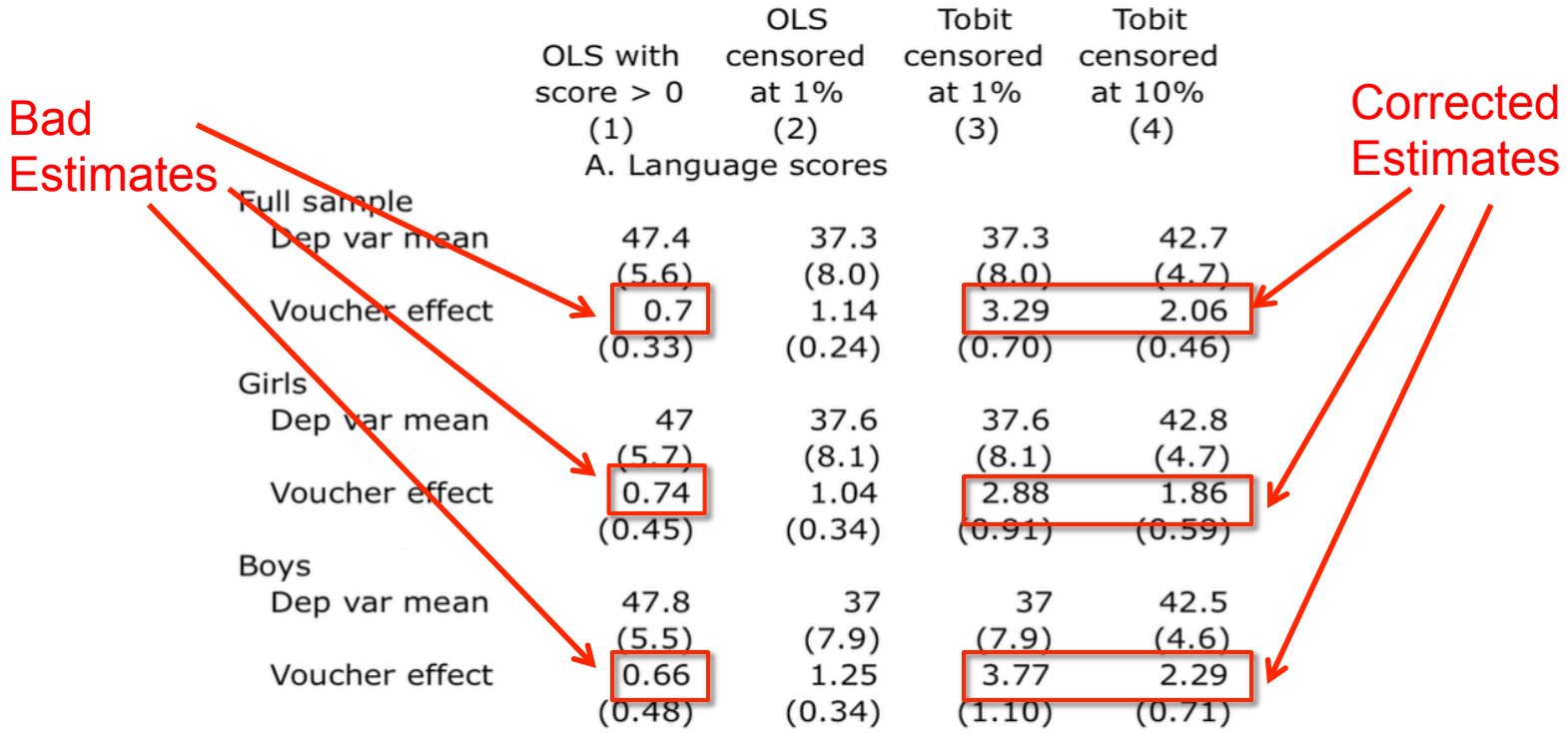

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- One way to correct these estimates is to use a "Tobit" estimator

So why was PACES cancelled?

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1. Low quality entrants into private school market
2. Payments to schools were late (and private schools' general distrust of government)
3. Voucher amounts didn't increase enough leading better (higher cost) schools to drop out of program
4. Didn't meet needs of very poor rural population

Lesson: The devil is in the details with voucher programs.

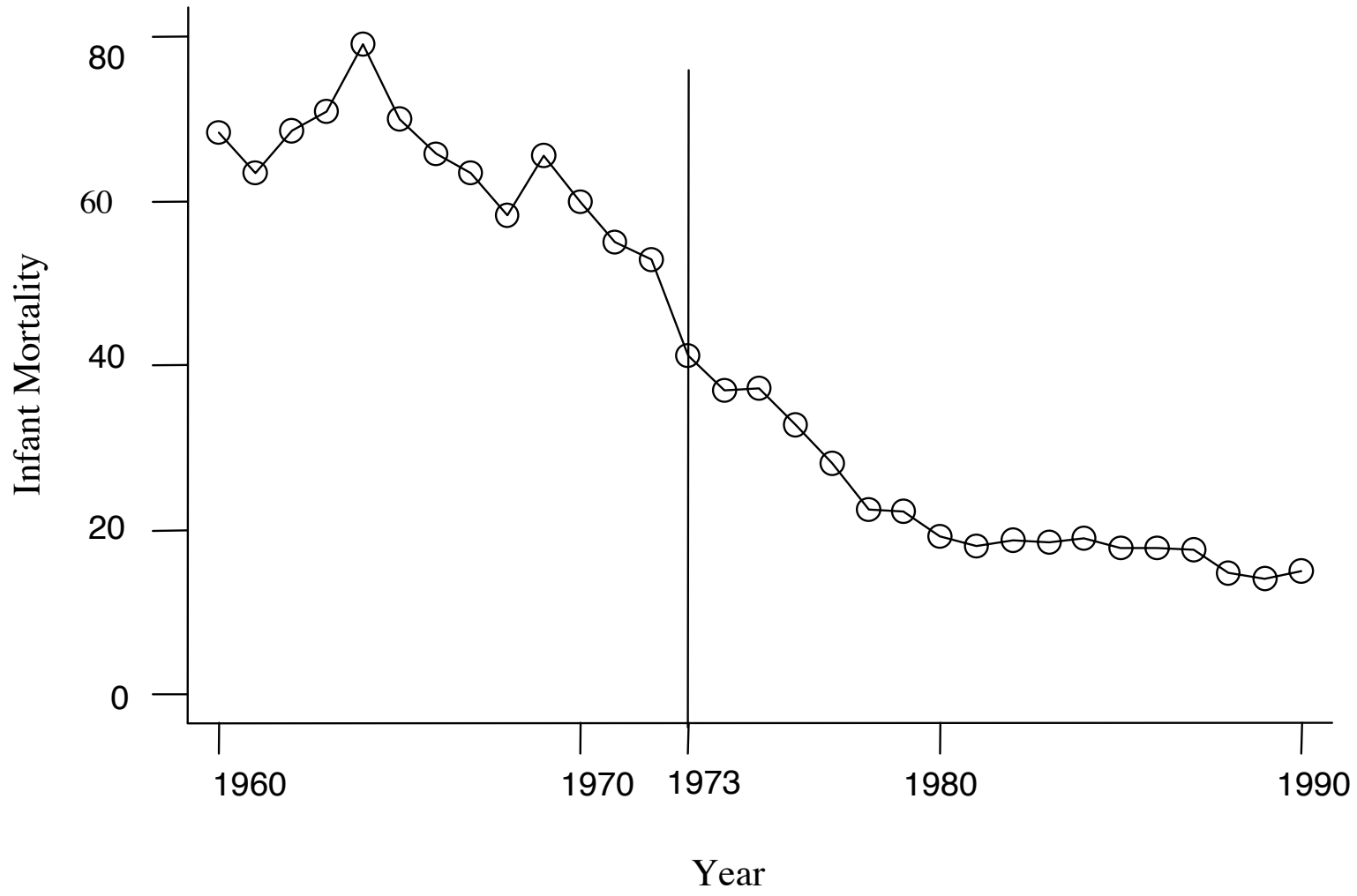
2. National Health Insurance in Costa Rica

- 2013 infant mortality:
  - Costa Rica: 8 per 1000 (with GDP per cap $10,185)
  - Mexico: 13 per 1000 (with GDP per cap $10,307)
  - Chile: 7 per 1000 (with GDP per cap $15,732)
  - USA: 6 per 1000 (with GDP per cap $53,042)

- Costa Rica introduced national health insurance in 1973

How are these facts related?

2. National Health Insurance in Costa Rica



2. National Health Insurance in Costa Rica

Use county-level variation in roll out of child insurance coverage

Table 4
Fixed effects and instrumental variables estimates of insurance effect on all-cause infant mortality

Infant mortality	(1)	(2)	(3)	(4)	(5)	(6)
Child insurance	−0.874 (0.226)***	−0.699 (0.217)***	−0.293 (0.254)	−0.255 (0.260)	−0.408 (0.268)	0.105 (0.260)
Mother characteristics (women 15–44)						
Education						
Primary only		−0.252 (1.381)				0.815 (1.221)
Secondary or higher		−0.786 (1.143)				1.026 (1.082)
Married		−1.667 (0.871)*				−2.442 (0.927)**
Migrated		0.676 (0.260)**				0.461 (0.220)**
Household characteristics						
Lack water supply, sanitation[b]			0.112 (0.036)***			0.079 (0.039)**
Household wealth[c]						
First principle component				−0.092 (0.030)***		−0.101 (0.036)***
Second principle component				0.032 (0.029)		0.062 (0.038)
County health care infrastructure						
Primary healthcare program coverage					−0.021 (0.023)	−0.015 (0.021)
New clinic since 1973					−0.010 (0.011)	0.002 (0.011)
Travel time to San Jose					0.414 (0.289)	0.838 (0.252)***
Deaths not certified					0.804 (0.351)**	0.024 (0.320)
Constant	−0.419 (0.080)***	−0.323 (0.132)**	−0.594 (0.089)***	−0.606 (0.089)***	−0.425 (0.138)***	−1.055 (0.237)***
Degrees of freedom ($n = 99$)	97	93	96	95	93	86
R-squared	0.14	0.22	0.22	0.23	0.22	0.40
F-tests for control variables	—	4.12***	—	4.78**	2.33*	5.77***

Source: Dow and Schmeer, “Health insurance and child mortality in Costa Rica,” in *Social Science and Medicine* (2003)

2. National Health Insurance in Costa Rica

Control for changes in mother's characteristics over time

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2. National Health Insurance in Costa Rica

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2. National Health Insurance in Costa Rica

Control for changes in county healthcare infrastructure over time

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Control for changes in all of that stuff together over time

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Lesson: Seemingly no causal effect of national health insurance on infant mortality

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3. Child Nutrition Supplementation in Guatemala

- INCAP Nutritional RCT (1969-1977) in 4 Guatemalan villages
- 2 treatment villages got protein-rich supplement (atole)
- 2 control villages got less nutritious drink (fresco)

What were the short and long-term consequences for education and cognitive skills?

3. Child Nutrition Supplementation in Guatemala

What were the short and long-term consequences for education and cognitive skills?

- 1.17 additional years of schooling for women
- No additional schooling for men
- Big increases for both men and women on reading comprehension and non-verbal cognitive ability

4. Paying Mothers to Keep Kids in School (Progresa/Oportunidades)

- Rolled out in 1997 as a randomized control trial (RCT)
  - 286 control communities
  - 320 treatment communities
- Grants for each child enrolled in school
- $10.50 to $66 per month
- Grants increased with grade
- High school grants were higher for girls
- Additional health and nutrition benefits for little kids

4. Paying Mothers to Keep Kids in School (Progresa/Oportunidades)

- Relative to control group, treatment group experienced:
  - 20% increase in enrollment of secondary school girls
  - 10% increase in enrollment of secondary school boys
  - no effect on primary school enrollment
  - 12% lower incidence of illness for children age 1 to 5
- Many countries around the world have copied Progresa/Oportunidades

5. Paying Students, Teachers, and Administrators for Test Scores (ALI)

- ALI (Aligning Learning Incentives) gave money for scores on math tests
- Control group and three treatment groups (88 schools total)

Learn more: Behrman, Parker, Todd, and Wolpin, "Aligning Learning Incentives of Students and Teachers: Results from Social Experiment in Mexican High Schools," *Journal of Political Economy* (forthcoming)

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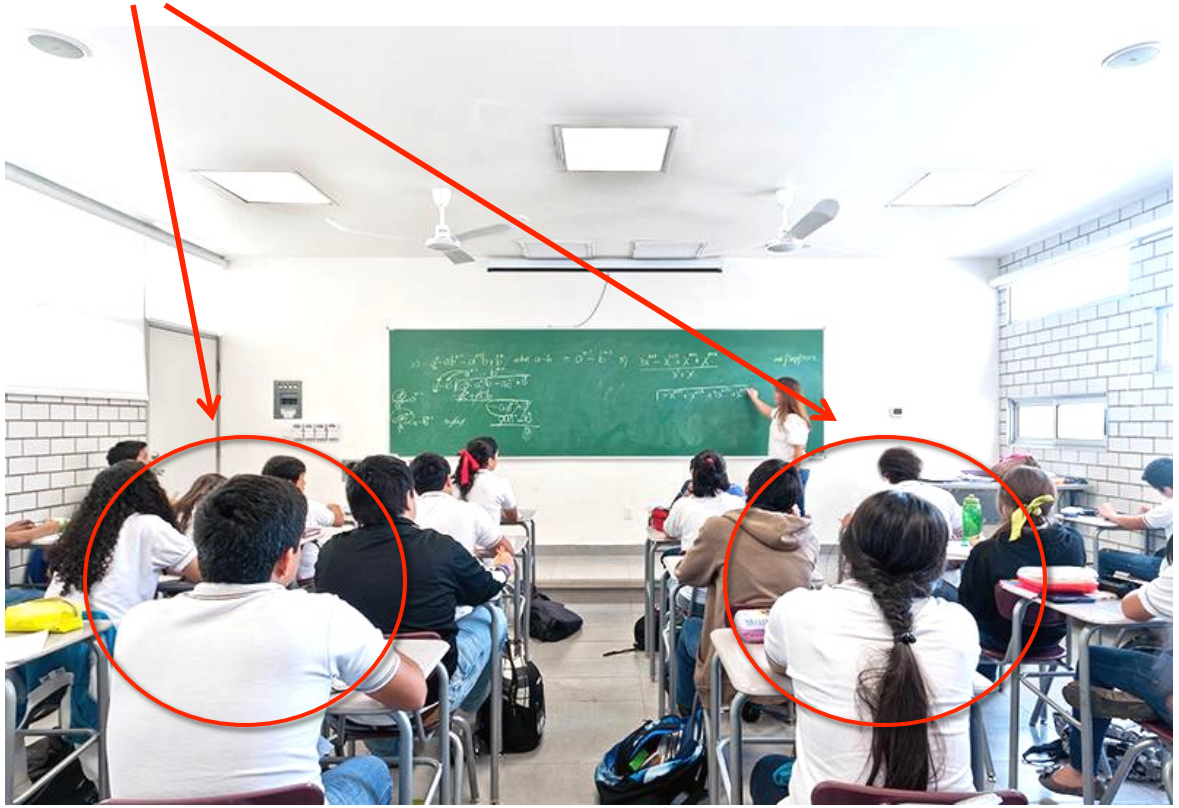
- T1: Individual payments to students



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- T2: Payments to teachers for their students' success

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- T1: Individual payments to students

- T2: Payments to teachers for their students' success

- T3: Combination of T1 and T2

5. Paying Students, Teachers, and Administrators for Test Scores (ALI)

- ALI (Aligning Learning Incentives) gave money for scores on math tests
- Control group and three treatment groups (88 schools total)

- T1: Individual payments to students

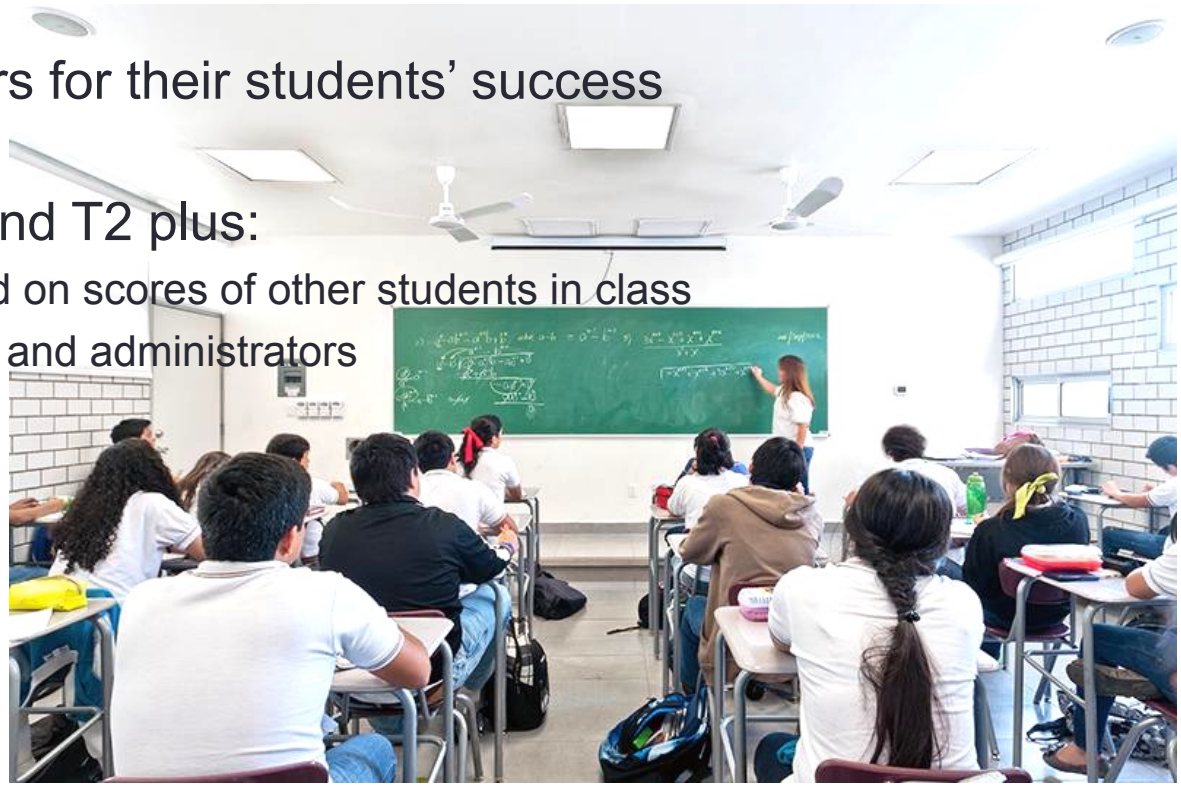
- T2: Payments to teachers for their students' success

- T3: Combination of T1 and T2 plus:
  - Bonuses for students based on scores of other students in class
  - Bonuses for other teachers and administrators

5. Paying Students, Teachers, and Administrators for Test Scores (ALI)

What worked?

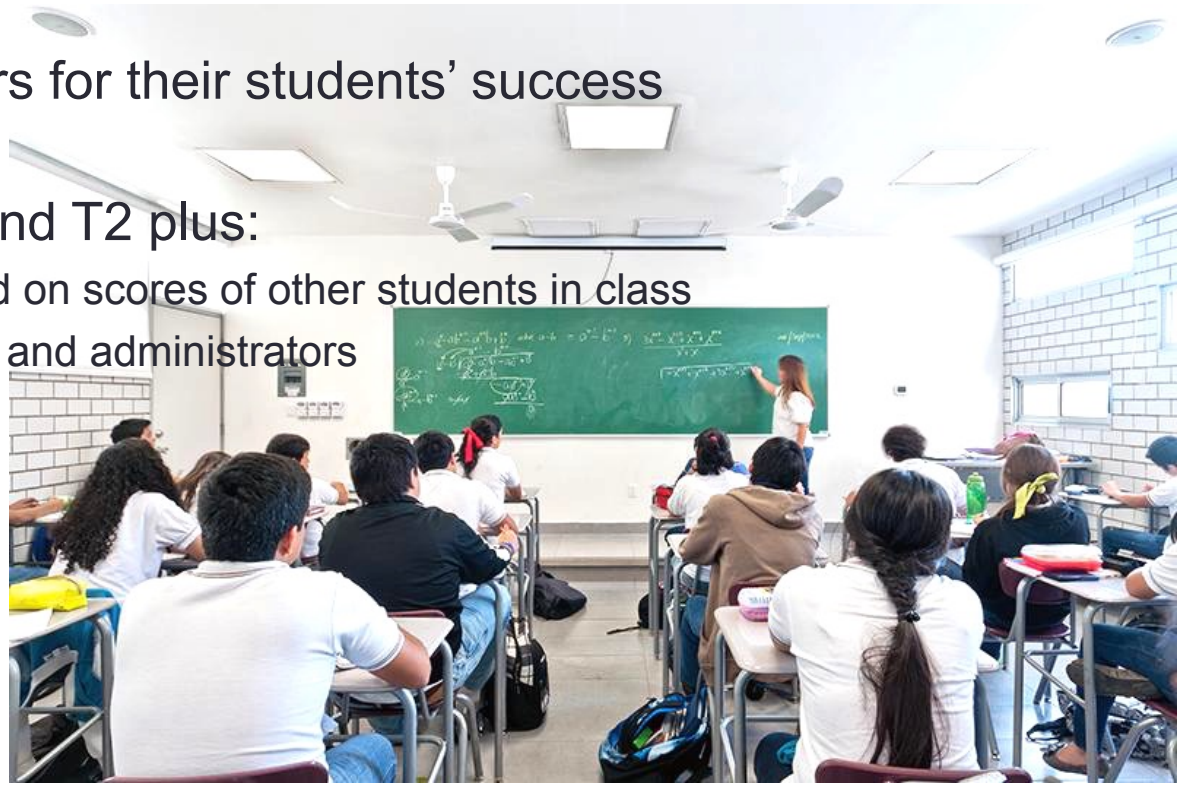
- T1: Individual payments to students
- T2: Payments to teachers for their students' success
- T3: Combination of T1 and T2 plus:
  - Bonuses for students based on scores of other students in class
  - Bonuses for other teachers and administrators



5. Paying Students, Teachers, and Administrators for Test Scores (ALI)

What worked?

- T1: Individual payments to students Moderate positive effects
- T2: Payments to teachers for their students' success
- T3: Combination of T1 and T2 plus:
  - Bonuses for students based on scores of other students in class
  - Bonuses for other teachers and administrators



5. Paying Students, Teachers, and Administrators for Test Scores (ALI)

What worked?

- T1: Individual payments to students Moderate positive effects
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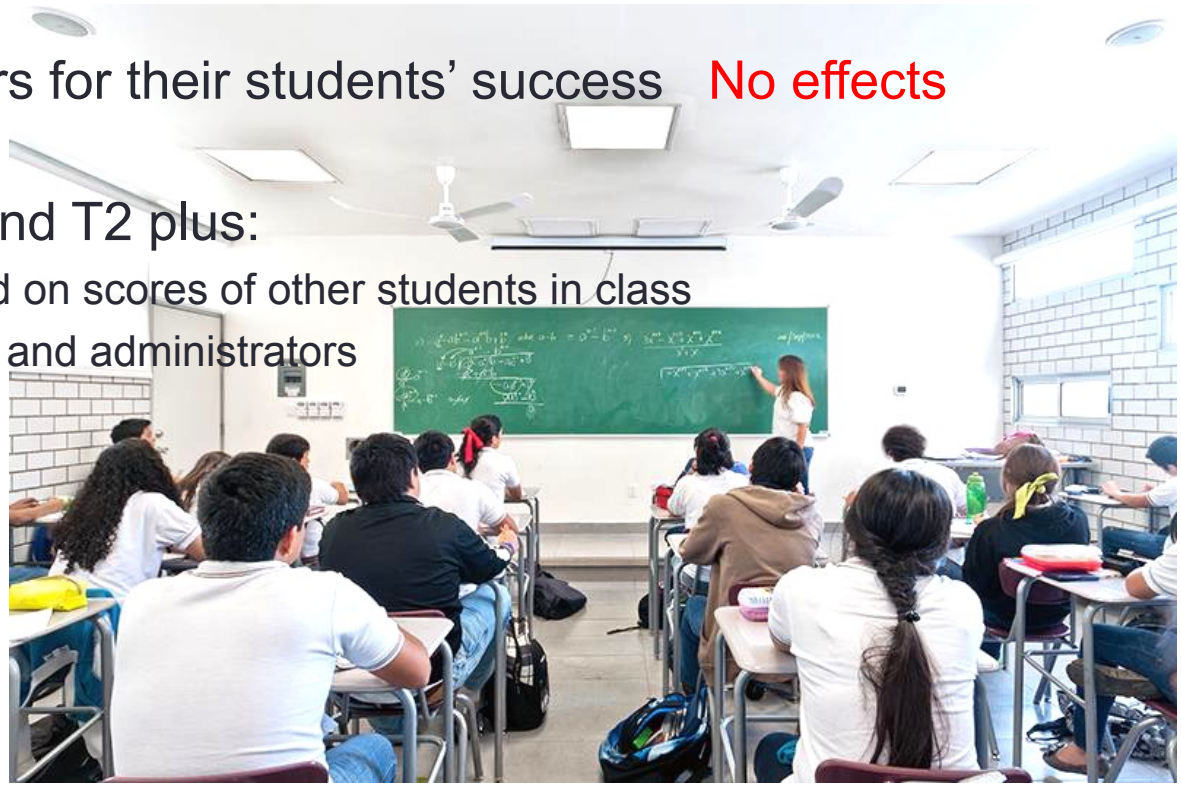
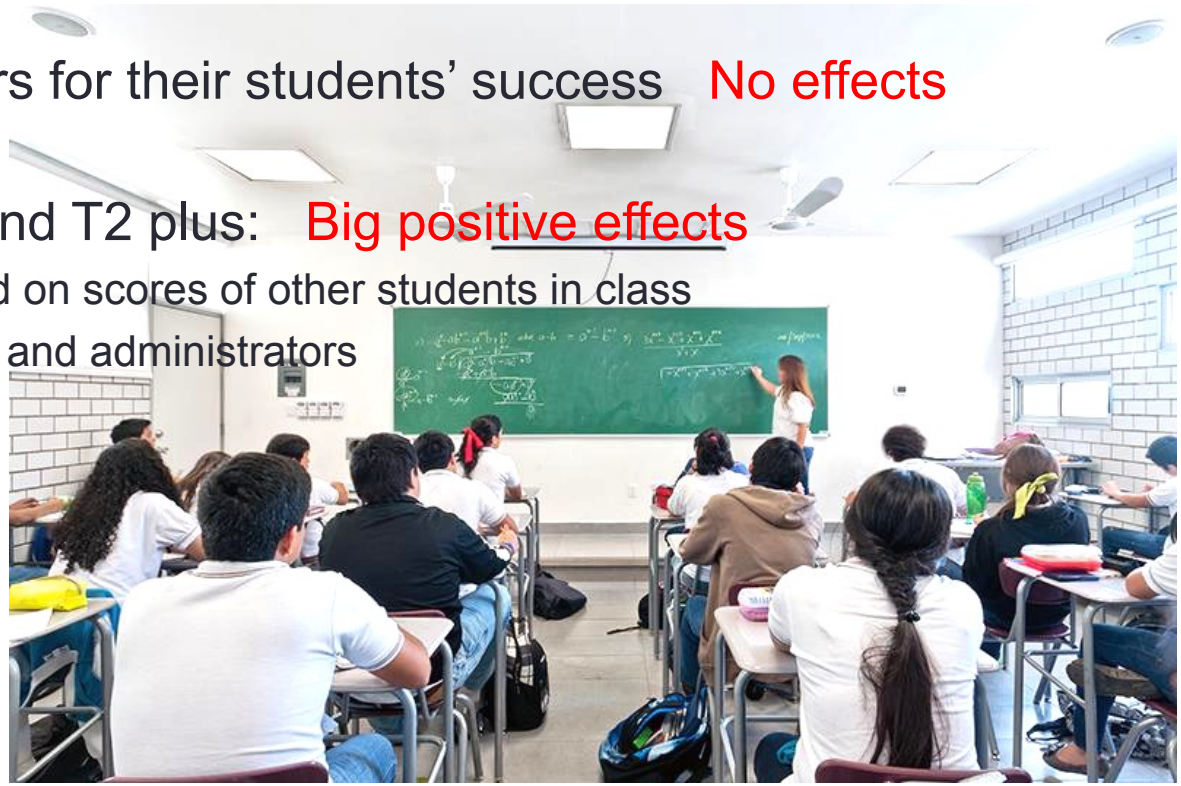


5. Paying Students, Teachers, and Administrators for Test Scores (ALI)

What worked?

- T1: Individual payments to students Moderate positive effects
- T2: Payments to teachers for their students' success No effects
- T3: Combination of T1 and T2 plus: Big positive effects
  - Bonuses for students based on scores of other students in class
  - Bonuses for other teachers and administrators



Big Lessons Learned

1. Social policy can be powerful

Big Lessons Learned

1. Social policy can be powerful

2. Details matter

Big Lessons Learned

1. Social policy can be powerful

2. Details matter

3. Good policy design + data + statistical methods
   = real answers