The Transmission of Economic Status and Inequality: U.S.-Mexico in Comparative Perspective

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Introduction

- Millions of Mexicans face inadequate educational and labor market opportunities in Mexico the U.S.

- Two societies with clear social divisions based on class, race and ethnicity.

- <u>Main Research Question</u>: How non-economic factors shape the social inequality experience and opportunities of Mexicans in both sides of the border?

  - Inequality of opportunities in education and occupations
  - Migration and inequality: selectivity and social mobility
  - Redistributive (equity-enhancing) policies

- <u>North America Approach</u>: Need to produce more systematic and comparable data and research on how characteristics of the family of origin are associated with educational, health and labor market outcomes in Mexico and the U.S.

Motivation

- Education is the engine of upward mobility. Compensatory education principle ("level the playing field"): education systems should compensate for expected unfavorable outcomes of Mexican children and youth with poor socioeconomic background.

- Mexicans in Mexico:

    – Educational attainment is still low: 7.9 years of schooling

    – Access to tertiary education is very limited

        • Major investments in education (questioning about its efficiency)

        • Educational spending (% GDP): 5.6%, 1995 to 6.4% ,2004 (OECD: 5.8%.)

        • Oportunidades Program: quantity versus quality (unknown)

Motivation

- Mexicans in the United States:

  - Latino population: 14% to 29% U.S. population (2005 to 2050).

  - One-third of children and youth of the U.S. population will have immigrant-origin in 2040.

  - Mexicans: largest ethnic group among immigrants (400,000 move residence to the U.S. every year).

  - Upsurge of interest in discerning capabilities of Mexican-origin population to assimilate to the Anglo-American society

  - Sociologists: rapid integration into the core of American identity, just one possibility for immigrant adaptation.

  - Nevertheless, the success of immigrants and their descendents is highly dependent on their educational opportunities.

  - Educational disadvantages of Hispanic, Latino or Mexican-origin relative to other groups have been documented, but never in comparison with those staying behind.

Today

Relation of family socioeconomic status and quality of learning outcomes in science of 15-year-olds in Mexico and the U.S.

- To what extent socio-economic advantages and disadvantages are associated with academic achievement in Mexico? Are the effects stronger than in the U.S.?

- Are Mexican education institutions producing a higher degree of stratification?

- How successfully are immigrant-origin youth living in Spanish-speaking homes navigating in the U.S. education system in comparison to those who stayed in Mexico?

Literature Review: Mexico

- A country with high inequality can provide opportunities for social mobility to its citizens.

- High mobility pattern of schooling attainment is not reproduced in terms of occupational status

- **High inter-generational educational mobility over time**.
  - Children tend to surpass the level of education reached by their parents
  - Reversal of this process for the youngest cohorts

- **A high degree of social stratification still prevails in Mexico:**

  - Educational attainment is dependent on parents' social background
  - Major educational barrier exists for individuals with poor educated parents to move beyond secondary education

- **No study on the relation between socioeconomic background and academic achievement** (to my knowledge).

Literature Review: U.S.

- Parental SES background one of the best predictors of academic outcomes.

- Differences in educational achievement and attainment by racial and ethnic groups have narrowed over time, but persistence of disadvantages of Hispanic, Latino or Mexican-origin minorities relative to other ethnic groups and across generations is well-documented.

- Ethnic and immigrant variations in school attainment often disappear after taking parental socioeconomic circumstances into account. However, variations are more likely to be accounted for by parental socioeconomic background across immigrant groups than across ethnic lines. Why?

  1. Ethnic-minority groups differ in cultural orientations toward education
  2. School outcomes of immigrant-ethnic groups depend upon the specific context of settlement (segmented assimilation).

Literature Review: U.S.

- First- and second-generation immigrants:

  – Doing well in comparison to native-born minorities and whites.

  – Mexican-born students perform better than Mexican-Americans because higher achievement motivations.

  – Achievement trajectories of first- and second-generation immigrants do not differ from their third-generation counterparts.

  – Educational adaptational outcomes of second generation influenced by national origins, SES background, contexts of reception and structural conditions.

- Spanish Language Retention:

  – Mexicans immigrants display stronger retention and greater ability to speak parent's native tongue than other immigrant groups, but no mother tongue can be expected to survive beyond the third generation.

  – Higher rate of parental language retention of promotes academic achievement among immigrant Mexican children.

Results

- **To what extent are socio-economic advantages and disadvantages associated with education outcomes in Mexico?**

  – Science literacy is positively associated with parental socioeconomic status.

  – The impact of social adscription on children's cognitive skills in science is significant but smaller than in the U.S.

  – Inequality of learning outcomes in Mexico is also related to other important aspects of social stratification: gender, immigration status, ethnicity and living in rural and small urban areas.

- **Are education institutions producing a higher degree of stratification?**

  – It seems that social origin is associated more with selection into the educational system and less with learning inequalities,

  – Surprisingly, the Mexican education system offers similar opportunities for poor learning.

Results

- **By moving into education systems with greater learning capabilities, do children of immigrants and in Spanish-speaking homes do better than those who stayed behind?**

  - Results reveal a high degree of stratification in the U.S. education system

  - Native-born students outperformed foreign-born students.

  - Spanish-speaking immigrant youth perform at levels more comparable to an average student in Mexico than in the U.S.

  - Large correlations exist between immigration status of children, language spoken at home and clustering of immigrant students in schools and student's performance, after controlling for socioeconomic background, parental cultural possessions and home educational resources .

  - These results depict another form of stratification of the education system in the United States, independent of the economic status of families, and related to the situation of Latino families.

Data & Variables

- **Programme for International Student Assessment** (PISA): A policy-oriented international study of the knowledge of 15-year-olds.

- Surveys:
    - 2000 (reading)
    - 2003 (mathematics)
    - 2006 (science)

- In **2006** more than **400,000 students** from **57 countries** were evaluated from nationally representative samples representing 20 million 15-year-olds

- **30,971 and 5,611 students** participated in PISA 2006 in Mexico and the U.S., respectively.

- PISA 2006 obtained a detailed profile of student performance in science. It also collected data on **student**, **family**, **school** and **institutional** factors related to differences in performance.

Variables: Science Scale

- I focus on the PISA 2006 science performance of 15-year-olds.

- <u>Dependent variable</u>: science test score of 15-year-olds.

- Challenge of getting ahead in the highly competitive globalized economy of today is the challenge of expanding capabilities in science literary.

- The continuous metric captures variation in scientific literacy regarding:

  - Understanding of scientific concepts
  - The ability to apply a scientific perspective to real-life problems and
  - The ability to think scientifically about evidence.

Variables: Social Origin, Parental Aspirations

- <u>Highest Parental Education</u>: years of formal schooling

- <u>Highest Parental Occupation</u>: occupational prestige scale (ranging from 16 to 90 according to the quality of the occupation)

- I took care to separate the effects of family socioeconomic and ethnic background from parental practices:

  - <u>Home Educational Resources</u>: index constructed based on the availability of the following items at home: a desk to study, a quiet place to study, a computer they can use for school work, educational software, their own calculator, books to help with their school work, and a dictionary.

  - <u>Family Cultural Possessions</u>: index reflecting the possession of valuable cultural and educational resources at home such as classic literature, book of poetry and works of art.

# Student Performance: Other Variables

Student Level

- Highest Parental Education
- Highest Parental Occupation
- Home Educational Resources
- Family Cultural Possessions
- Self-study Hours
- Highest school grade completed
- Gender
- Age
- Immigrant First Generation
- Immigrant Second Generation
- Spanish spoken at home

School Level

- School size and its squared value
- School location: Rural, Semi-urban, Urban and Metropolitan
- Private-public School
- Pupil-teacher ratio
- Computers-student ratios,
- % native students (U.S. only)

- Several measures related to the school's autonomy, parental pressure, and accountability policies.

We must distinguish between selection into the education system and quality of learning opportunities

Figure 6. School Enrollment Rates by Age and Poverty Condition. Mexico, 2000 and 2005

Legend:
- All-2005
- Extreme Poverty 2000
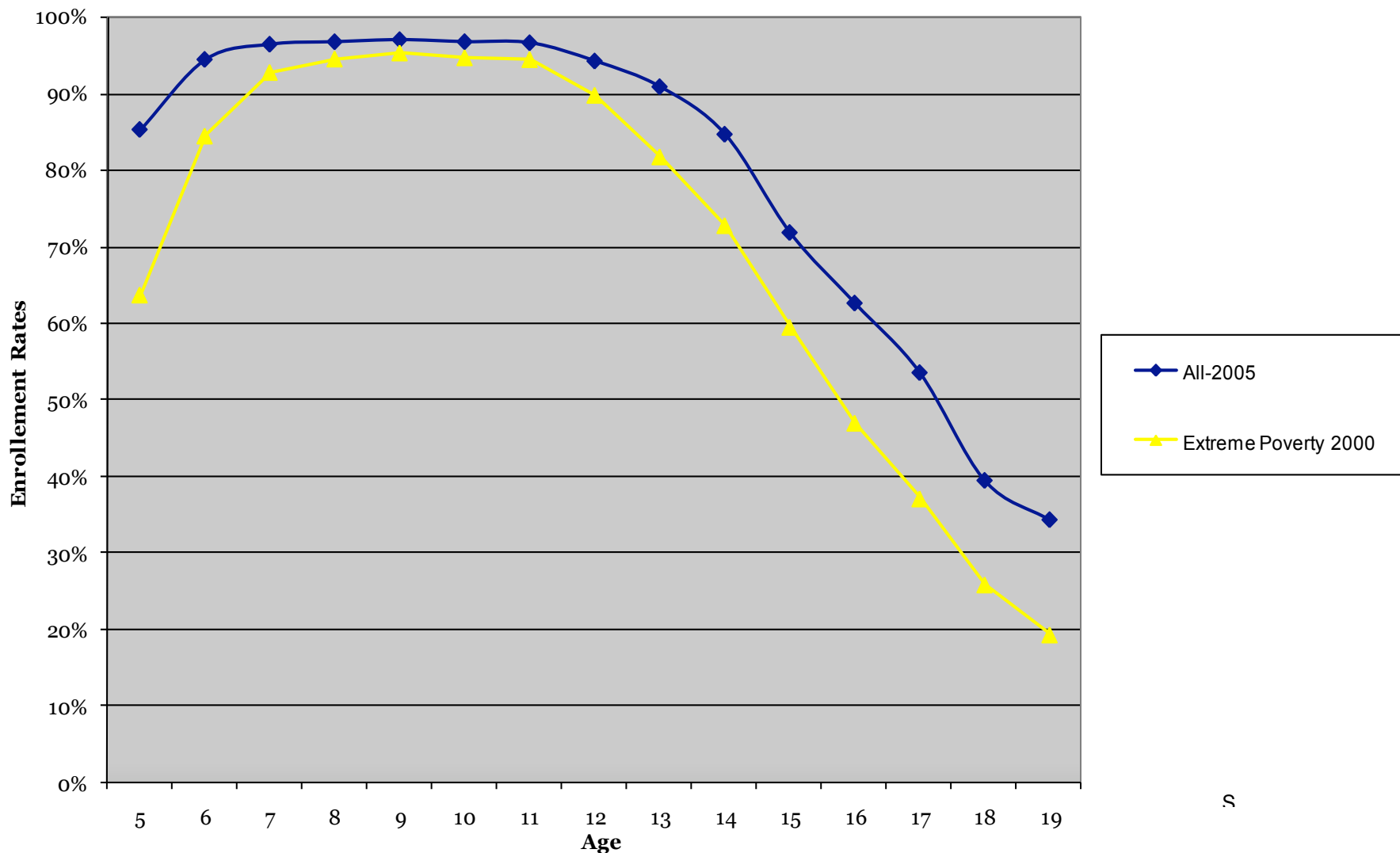
Mean Score in Student Performance on the Science Scale. OECD Countries, Chile and Brazil 2006. (descending order)

Average Science Score vs Country
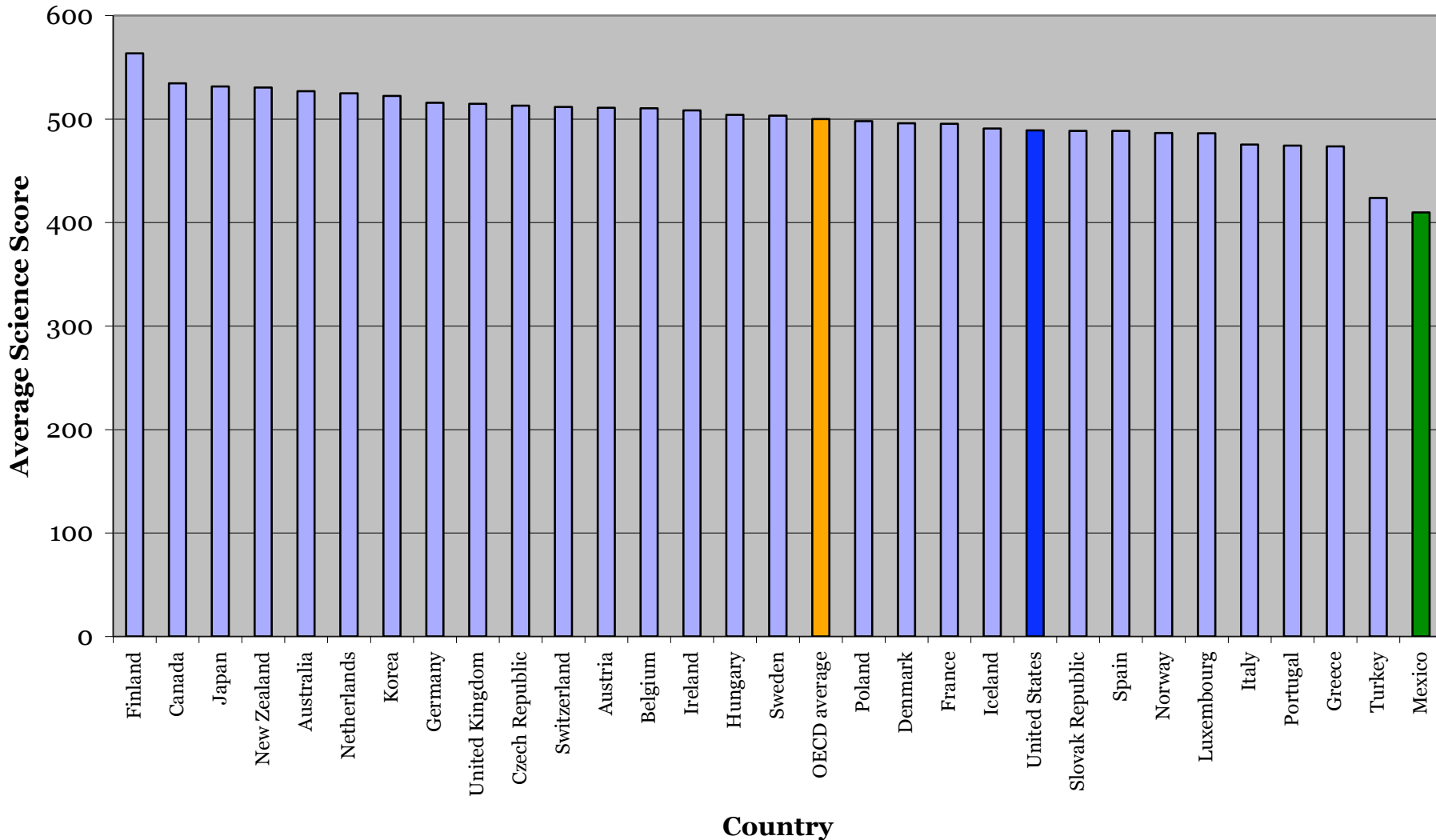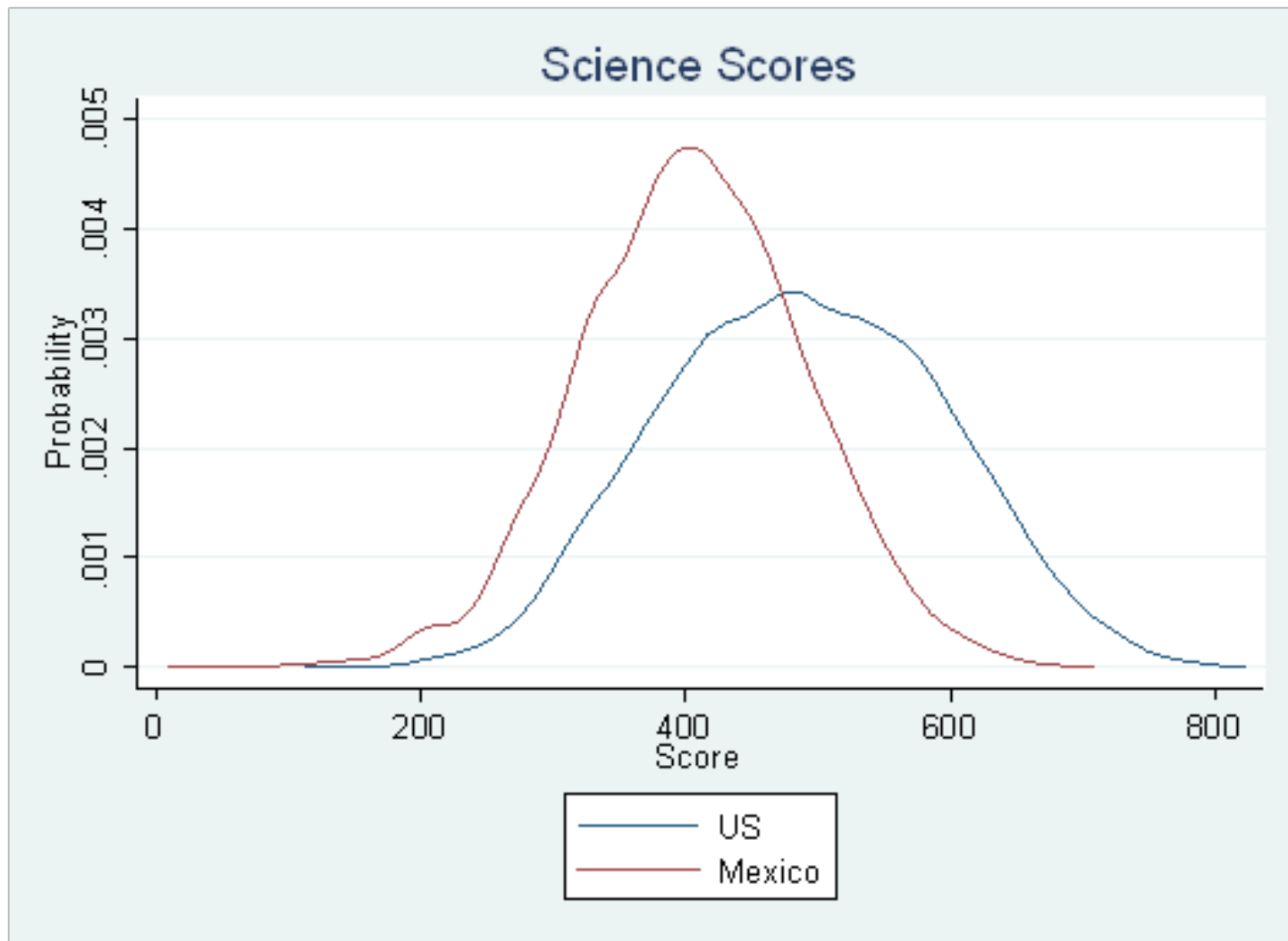
Science Scores

Gini:

U.S.: 0.123

Mexico: 0.101

Score point difference associated with one unit on the SES gradient :

U.S.: 49

Mexico: 25

Table 8. OLS Regressions of Student Performance on the Science Scale. Mexico and U.S., 2006.

	MEXICO		USA	
	(1)	(2)*	(3)	(4)*
R²	0.15	0.36	0.15	0.28
Num. Observations	30,971	29,672	5,611	5,443
	B	*B*	*B*	*B*
Student Level				
Highest Parental Education	3.60 ***	0.45 ***	8.22 ***	4.44 ***
	0.29	*0.23*	*0.65*	*0.59*
Highest Parental Occupation	1.03 ***	0.41 ***	1.67 ***	1.02 ***
	0.06	*0.06*	*0.09*	*0.09*
Home Educational Resources		7.30 ***		1.56
		0.78		*2.09*
Cultural Possesions		3.04 ***		14.55 ***
		1.15		*1.68*
Female		-12.55 ***		-14.58 ***
		1.74		*2.88*
Age		-6.79 **		-18.44 ***
		3.18		*5.74*
School Grade		15.51 ***		39.29 ***
		1.77		*3.07*
Self-study Less 2 hours (ref: No self-study)		7.77 ***		28.47 ***
		2.29		*3.73*
Self-study 2 or more hours (ref: No self-study)		11.06 ***		39.19 ***
		2.22		*4.32*
Immigrant First Generation		-48.66 ***		-14.25 **
		6.07		*6.36*
Immigrant Second Generation		-16.43		-0.97
		16.26		*5.31*
Speak Spanish at Home		21.98 ***		-11.22 *
		7.35		*6.06*

Continue…

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	(1)	(2)*	(3)	(4)*
R²	0.15	0.36	0.15	0.28
Num. Observations	30,971	29,672	5,611	5,443
	B	*B*	*B*	*B*
School Level				
School Size		0.02 ***		-0.01
		0.00		*0.01*
School Size Squared		0.00 **		0.00
		0.00		*0.00*
Semi-urban (ref: rural)		5.17		8.25
		4.02		*7.84*
Urban (ref: rural)		17.70 ***		0.59
		4.40		*8.58*
Metropolitan (ref: rural)		7.88		-28.14 **
		5.63		*13.01*
Private		5.74		8.06
		7.94		*9.55*
% Native Students		0.67 **		0.95 ***
		0.29		*0.37*
Student/Teacher Ratio		-0.66 ***		0.59
		0.16		*0.71*
Computer/Student Ratio		44.89		-8.45
		30.73		*19.69*
Constant	329.21 ***	252.95 ***	289.24 ***	163.38 **
	2.59	*57.58*	*7.51*	*92.86*

Source: Author's estimations based on the Programme for International Student Assessment (2006).

Note: Standard errors are in italics. * Regressions include school level measures related to admittance and selection abilities, managing and funding, parental pressure and choice, accountability policies, school autonomy and school resources.

* Significant at p < .10   ** Significant at p < .05   *** Significant at p < .01

Figure 6. Mean Score in Student Performance on the Science Scale. Mexico, U.S. and Immigrant and Spanish Ethnic Groups in the U.S. 2006.

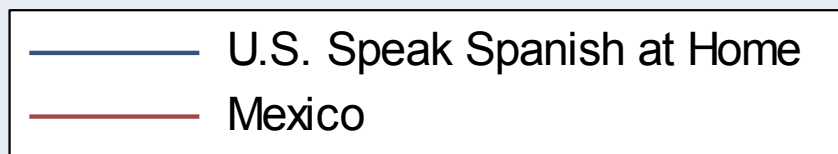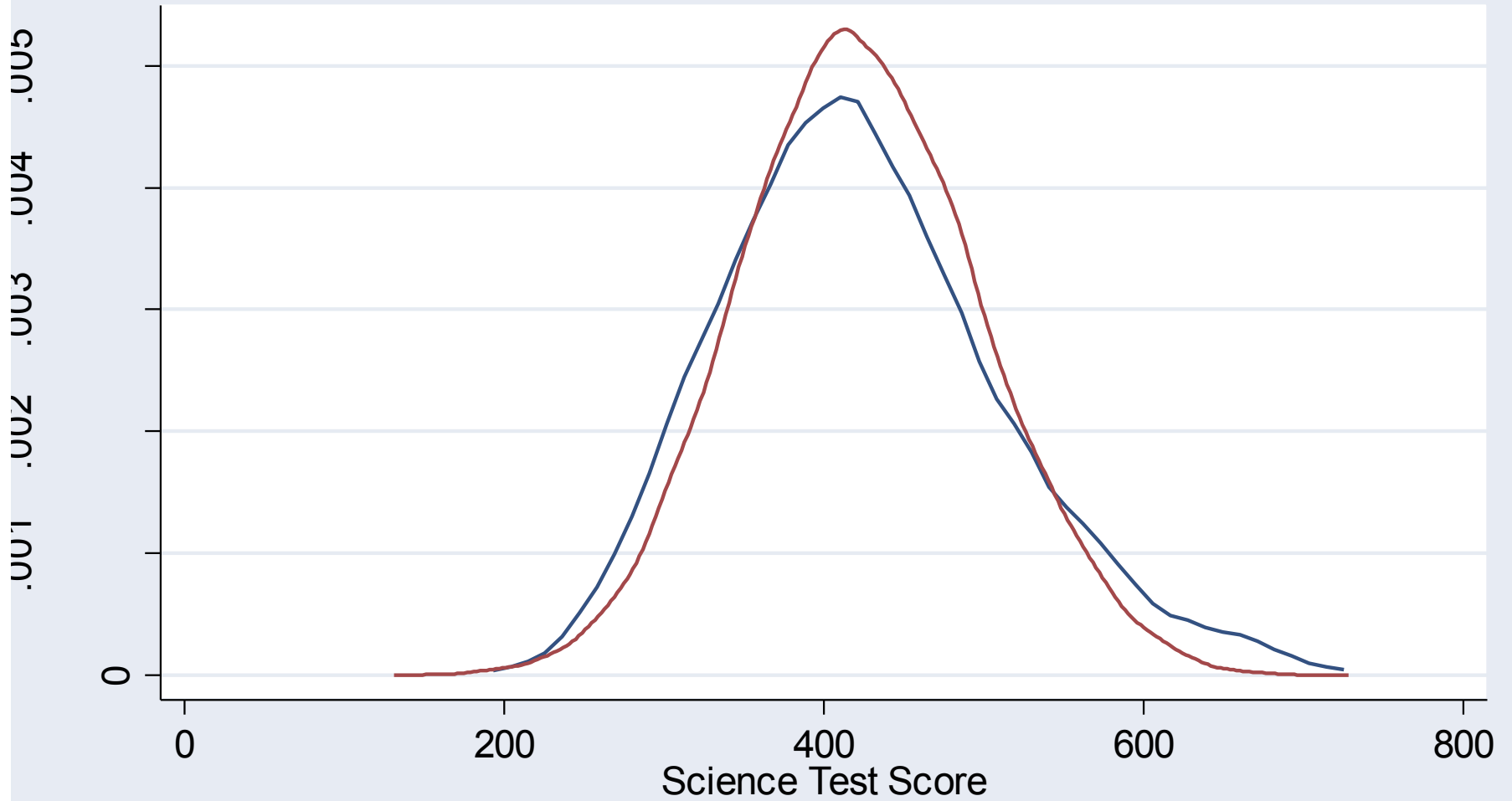|	Mexico	U.S., First Generation-Spanish at Home	U.S., Second Generation-Spanish at Home	U.S., First Generation	U.S., Second Generation	U.S.
Series1	410	411	429	443	458	489
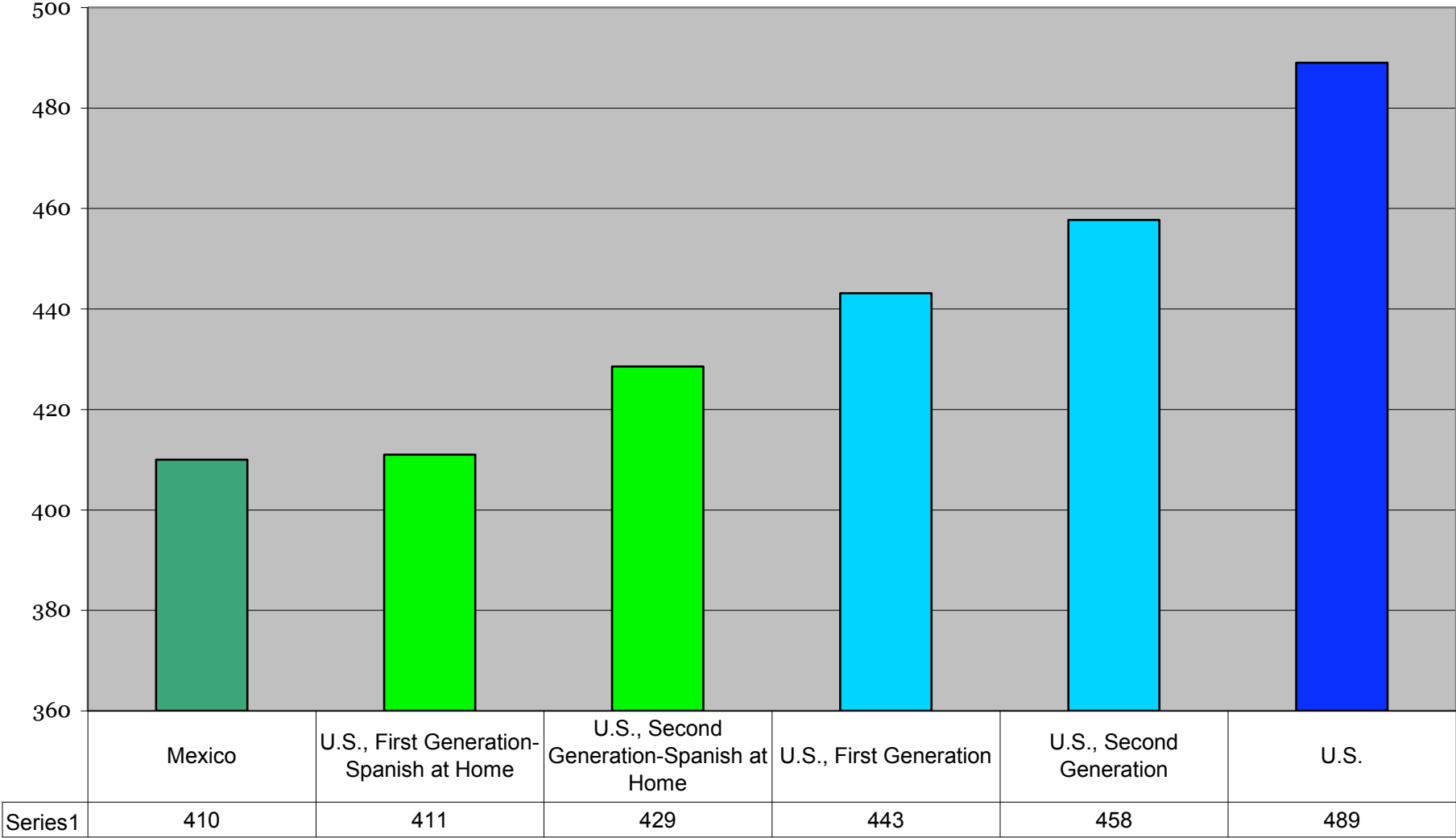
Science Test Score 2006 (U.S.)

Table 9. OLS Regressions of Student Performance on the Science Scale.U.S., 2006.

	USA	
	(1)	(2)*
R^2	0.04	0.28
Num. Observations	5,611	5,443
	B	*B*
Student Level		
Highest Parental Education		4.48 ***
		0.59
Highest Parental Occupation		1.01 ***
		0.09
Home Educational Resources		1.57
		2.09
Cultural Possesions		14.61 ***
		1.68
Female		-14.66 ***
		2.86
Age		-18.43 ***
		5.72
School Grade		39.25 ***
		3.06
Self-study Less 2 hours (ref: No self-study)		28.38 ***
		3.75
Selef-study 2 or more hours (ref: No self-study)		39.21 ***
		4.35
Immigrant First Generation	-28.20 ***	-15.79 **
	8.48	7.45
Immigrant Second Generation	-20.15 ***	-6.37
	6.10	5.68
Speak Spanish at Home	-79.86 ***	-34.09 ***
	10.17	11.81
First generation * Speak Spanish Home	23.03	24.44
	15.11	15.11
Second generation * Speak Spanish Home	32.44 **	35.12 ***
	13.16	12.67

Continue

Table 9. OLS Regressions of Student Performance on the Science Scale.U.S., 2006.

	USA	
	(1)	(2)*
R^2	0.04	0.28
Num. Observations	5,611	5,443
	B	*B*
School Level		
School Size		-0.01
		0.01
School Size Squared		0.00
		0.00
Semi-urban (ref: rural)		8.28
		7.84
Urban (ref: rural)		0.60
		8.55
Metropolitan (ref: rural)		-28.48 **
		12.93
Private		7.95
		9.52
% Native Students		0.91 ***
		0.37
Student/Teacher Ratio		0.60
		0.71
Computer/Student Ratio		-7.62
		19.63
Constant	496.03 ***	167.72 **
	1.73	92.32

Source: Author's estimations based on the Programme for International Student Assessment (2006).

Note: Standard errors are in italics. * Reggressions include school level measures related to admittance and selection abilities, managing and funding, parental pressure and choice, accountability policies, school autonomy and school resources.

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