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Why and How Does Source Country Matter?

The Effects of Home Countries and Immigrant Communities on Foreign-Born Student Achievement

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Editorial Board

Abstract

Objective: This paper explores the effect of the economic conditions of source countries and the human capital characteristics of coethnic immigrant communities on foreign-born students' reading and math achievement.

Methods: We use data on New York City public school foreign-born students from 39 countries merged with Census data on the characteristics of the city's immigrants, and United Nations data on the economic conditions of countries. We estimate regressions of student achievement on home country and coethnic immigrant community characteristics, controlling for student and school attributes.

Results: Children from middle income nations and nations where English is an official language have lower reading scores than students from other nations, though no such effects are observed for math. Children from immigrant communities with higher levels of income and educational attainment perform better in school than children from other communities. Yet children in highly English proficient immigrant communities test slightly lower than children from less proficient communities.

Introduction

The most recent wave of immigration to the United States has brought a large population of children who are racial minorities from poor families (Hernandez and Charney, 1998; Van Hook, Brown, and Kwenda, 2004). This increase and demographic shift in the immigrant population has triggered a new line of research aimed at understanding whether and why these young newcomers succeed or fail in U.S. schools. One consistent finding from this emerging research is that the fate of immigrant children in school varies by their source country (e.g., Chiswick and DebBurman, 2004; Glick and White, 2003; Hirschman, 2001; Kao, 1999; Portes and Rumbaut, 2001; Schwartz and Stiefel, 2006; Tillman, Guo, and Harris, 2006). Further, several studies have demonstrated that source country differences remain even after some adjustments are made for the demographic characteristics of the students as well as the post-migration human capital of their families, the urbanicity of their communities, and the characteristics of their schools (Glick and White, 2003; Perreira, Harris, and Lee, 2006; Portes and Rumbaut, 2001; Schwartz and Stiefel, 2006).

Much of the theoretical work regarding these adjusted performance differences among immigrants from different countries centers on two explanations. First, the social and economic conditions in children's home countries and, particularly, the similarity of their educational and labor market structures to those in the U.S, are considered important determinants of children's success in U.S. schools (Chiswick and DebBurman, 2004). Second, children's success depends upon the human capital and social supports provided by the post-migration immigrant communities in which they settle (Portes and Rumbaut, 1996, 2001; Portes and Zhou, 1993). Indeed, there are many rich ethnographic accounts of the strong influence of immigrant communities on their children's adjustment to the U.S. (e.g., Caplan, Whitmore, and Choy, 1989; Gibson, 1988; Kasinitz, Mollenkopf, and Waters, 2004; Rumbaut and Portes, 2001; Suárez-Orozco, 1989; Waters, 1999; Zhou and Bankston, 1998). Though the prior literature is rich in theory and description, we know of

no attempts to quantify these pre- and post-migration influences on foreign-born achievement in school. Consequently, we have limited answers to the questions of why and how source country matters to student academic performance, and, particularly, whether these influences persist once we have controlled for the characteristics of foreign-born children and the schools they attend.

This paper examines these explanations for source country differences in foreign-born student achievement using administrative records on the census of foreign-born students in New York City's public primary schools merged with data on their schools, data from the United Nations Statistics Division on countries, and data from the 5% Public Use Microdata Sample (PUMS) of the 2000 Census on the characteristics of immigrant groups in the New York metropolitan area. Using this rich dataset on over 50 thousand students from 39 countries, we examine the effect of two pre-migration home country conditions (Gross National Income (GNI) and whether English is an official language) and three post-migration community characteristics (the income, college education, and English proficiency rates of adult immigrants from the students' country who reside in New York City) on foreign-born achievement. Importantly, our regression analyses control for a range of school and student characteristics, including student test scores in the previous year.

Our paper provides several new insights to the literature on newcomer children. First, by including these country-level characteristics in models with student and school attributes, we are able to examine the relative importance of students, their schools, the conditions in their home countries, and the human capital of their surrounding immigrant communities. Second, with these same models, we can explore the effects of pre-migration home country conditions and post-migration immigrant communities on foreign-born children's performance in U.S. schools. Our quantitative approach to this complex question requires parsimonious models and forces us to rely on limited measures of country and coethnic immigrant community characteristics. Thus, we focus less on the magnitude of the effects of these country and community characteristics than on their sign and

statistical significance, aiming to inform the existing literature as to why and how source country matters to foreign-born achievement.

These questions have substantial policy relevance to urban educators and policymakers facing expansions in their immigrant populations. In addition to growth in the immigrant shares, many school systems, and even individual schools, experience large fluctuations in the national origins of their immigrant populations from year to year (Ellen, O'Regan, and Conger, forthcoming). They need to know how immigrants from different parts of the world fare and what might explain their relative successes or failures. A principal who anticipates a large incoming class of immigrants from a high-income nation may or may not require a different set of resources than one who anticipates a comparable enrollment of immigrants from a low income nation. Cities faced with large ethnic enclaves that do not speak English well require information on the consequences of such cultural retention; the achievement of the children from these communities is one such consequence. The questions we explore also inform the larger theoretical literature on immigrants to the U.S., a discussion we turn to next.

Theoretical and Empirical Considerations

The variation in achievement that is typically observed between immigrant students from different countries may be entirely explained by the characteristics of the students or their schools in the U.S. Immigrants who are white, fully proficient in English, and whose parents are high-income, married, and well-educated have been shown to outperform those who have none of these characteristics (e.g., Kao and Tienda, 1995; Glick and White, 2003; Hirschman, 2001; Perreira et al., 2006; Schwartz and Stiefel, 2006). Some immigrants also have stronger cultural values regarding academic achievement, work, family, and authority figures that help them succeed even in the face of low levels of human capital (e.g., Kao, 2004; Perreira et al., 2006; Pong, Hao, and Gardner, 2005).

Of course, the quality of schools likely matters as well. Immigrants who attend schools with highly-qualified teachers and high-achieving peers fare better than those in less-endowed educational settings (e.g., Perreira et al., 2006; Portes and MacLeod, 1996; Schwartz and Stiefel, 2006).

The previous quantitative studies of immigrant children generally find that source country differences in academic achievement and attainment remain even after controlling for differences in the attributes of the students and the schools they attend in the U.S (e.g., Chiswick and DebBurman, 2004; Glick and White, 2003; Hirschman, 2001; Perreira et al., 2006; Portes and Rumbaut, 2001; Schwartz and Stiefel, 2006). For instance, the Children of Immigrants Longitudinal Study (CILS) of immigrant youth from over 70 countries in San Diego and Florida finds that the children of Vietnamese immigrants far outperform the children of Cambodian immigrants on math exams, holding constant well-established inputs to achievement, such as age, sex, parental socioeconomic status, family structure, and bilingualism (Portes and Rumbaut, 2001). Using administrative data on New York City elementary and middle school students, Schwartz and Stiefel (2006) examine the math and reading test scores of immigrants by 12 source region groups, revealing wide adjusted source region variation. Immigrant youth from Africa, for instance, score higher than immigrant youth from the Caribbean in models that include school fixed effects and several student characteristics, such as race, poverty status, and prior year test score. Though each study relies on a different sample, includes a different set of source countries, and controls for a different set of attributes, adjusted source country achievement differences are commonly-observed.

Two primary extra-individual explanations for these adjusted source country differences are found in the characteristics of children's home countries and the coethnic immigrants in their U.S. communities. Due to lower adjustment costs, children who come from countries where the educational systems are more similar to the U.S. may have an easier time in school and perform better on reading and math exams than those who come from countries with less similar educational systems. Once they arrive to the U.S., the supports provided by the immigrant communities in which

they settle can play a further role in their transition. Borjas (1992, 1995), for instance, shows that the "ethnic capital" available to children of immigrants (proxied by the average earnings of coethnic immigrants in the parents' generation) can have significant effects on children's later earnings.

Portes and Rumbaut's (1996, 2001) *segmented assimilation* theory elaborates on the importance of coethnic communities on immigrant children's adaptation to the U.S. They suggest segmented pathways for immigrant children that will be shaped by their demographic and socioeconomic profile as well as the level of discrimination they experience in the local labor market, the degree of support they receive from the government, and the support of their surrounding coethnic immigrant communities. According to Portes and Rumbaut (2001), one such form of support is the extent to which the community retains the customs, values, and languages of their native cultures, a cultural retention that may buffer some immigrant children from the negative influences of racial discrimination and low aspirations among some native-born youth. There are several ethnographies of immigrant groups in specific localities that document the social supports that communities provide to children, such as the Vietnamese children in New Orleans who benefit from highly-connected coethnic social networks (Caplan et al., 1989; Zhou and Bankston, 1998). Several studies also show that immigrant children who are bilingual or whose families predominantly speak a language other than English at home, an indication that the children retain some aspects of their heritage, perform better in school than those who predominantly speak English (e.g., Feliciano, 2001; Portes and Rumbaut, 2001; Schwartz and Stiefel, 2006).

One of the challenges to estimating the effects of countries and coethnic communities is to minimize the bias that arises from nonrandom selection of students from countries and immigrant communities with certain characteristics. For instance, research on the selectivity of immigrant groups suggests that immigrants to the U.S. from less developed nations are more positively-selected on observables, such as educational attainment – that is, they tend to be more educated than the average person in their home country (Feliciano, 2005). In addition, the more positively-selected an

immigrant group on these observables, the higher the children's expectations of their schooling in the U.S. (Feliciano, 2006). Taken together, these results suggest that achievement differences between children from more and less developed nations may be due to the selectivity of these children on attitudes towards schooling, not the level of development in their home country. Selective emigration on unobserved traits could also explain the effects of coethnic immigrant communities in New York City: for instance, immigrant communities that do not speak English well may be more positively-selected on attitudes towards education than immigrant communities that do speak English well, or vice versa.

The goal of our models is to explore the effect of a limited, theoretically-relevant, set of country and coethnic community characteristics, controlling for the effects of the students' own characteristics and the schools they attend in New York City. We do this by estimating models of student achievement with large numbers of students from many countries and many control variables including the students' prior year test scores, which holds some set of important unobservables constant. Though we are unable to establish the causal effects of country and coethnic characteristics with certainty, we know of no prior attempt to estimate such models and believe that our data provide a unique opportunity to shed some light on this important topic.

Our measures of country and coethnic community conditions are necessarily limited, but our data are advantageous to this task in a number of ways. First, by focusing on one school district and city, we can compare children who attend schools that are governed by a common set of administrative procedures and rules and who are subject to the same local economic, social, demographic, and political conditions. With one large metropolitan area, we can also better isolate the influence of students' coethnic communities than an analysis that uses a national sample of immigrant youth because the limited numbers of students from source countries in national datasets require users to pool students from different parts of the country (e.g., Mexicans in Los Angeles cannot be reliably distinguished from Mexicans in New York City). Second, the New York City case

study allows for comparisons of immigrants from a wide array of countries, unlike many other areas that are dominated by only a few large countries. We include newcomer groups that have not received much attention in the recent literature, such as South Americans, West Africans, Europeans, and Asian-Caribbeans. Third, unlike most research that groups together native-born and foreign-born children of immigrants, we focus on foreign-born children, a group that may be uniquely affected by their origin countries, their status as immigrants (e.g., lack of eligibility for public benefits, unfamiliarity with the host culture), their language needs, and their surrounding immigrant communities. Finally, with the census of New York City public elementary and middle school students, we can make definitive statements about source country variation without concern for sampling error. A more detailed description of the data is provided next.

Description of Data and Source Country Differences

We assembled a unique multi-level dataset of students nested in schools and source countries. The primary data consist of administrative records provided by the New York City Department of Education on 4th through 8th grade foreign-born students in school year 2000-01. For each student, the data contain demographic (race/ethnicity, gender, age) and educational (grade level, participation in special education programs for mild to moderate disabilities, and performance on reading and math exams, including scores in the previous year) information.[1] The data also identify the language most frequently spoken at home; scores on a test of English language ability (the Language Assessment Battery, or LAB); country of birth; and the year the student entered the New York City school system. In addition, information is available on the poverty status of the family through the students' eligibility for subsidized meals. Children in homes where the household income is below 130% of the federal poverty level are eligible for free lunch (referred to from here forward as "poor")

and those in homes where the household income is between 130% and 185% of the poverty level are eligible for reduced-price lunch (referred to from here forward as "near-poor").

This pupil file contains a school-level identifier for each student, which enabled us to incorporate school-level data, such as resources and peer characteristics (e.g., percent of teachers with five or more years of experience, percent of students eligible for subsidized meals). We also supplemented these student and school data with two source country data sources, intending to capture two types of data. The first type, which we obtain from the United Nations Statistical Division, measures the conditions of the country of origin, including the per capita GNI in 2000, converted to U.S. dollars, and whether English is one of the official languages in the country. The second type measures the social and economic characteristics of immigrants in New York City from each source country. Using the New York City subset of the 5% PUMS of the 2000 U.S. census, we compute mean statistics for immigrant heads of household ages 18 and over by birthplace (e.g., the mean household income of immigrants from the Dominican Republic). Many New York City immigrants are clustered in ethnic enclaves, the Dominicans in Washington Heights and the Jamaicans in Central Brooklyn, for instance; however, we have not measured the characteristics of coethnics in the surrounding census tract or block. Instead, we use the characteristics of coethnics in all of New York City to represent the larger ethnic capital available to children in the city through churches and other ethnic organizations.

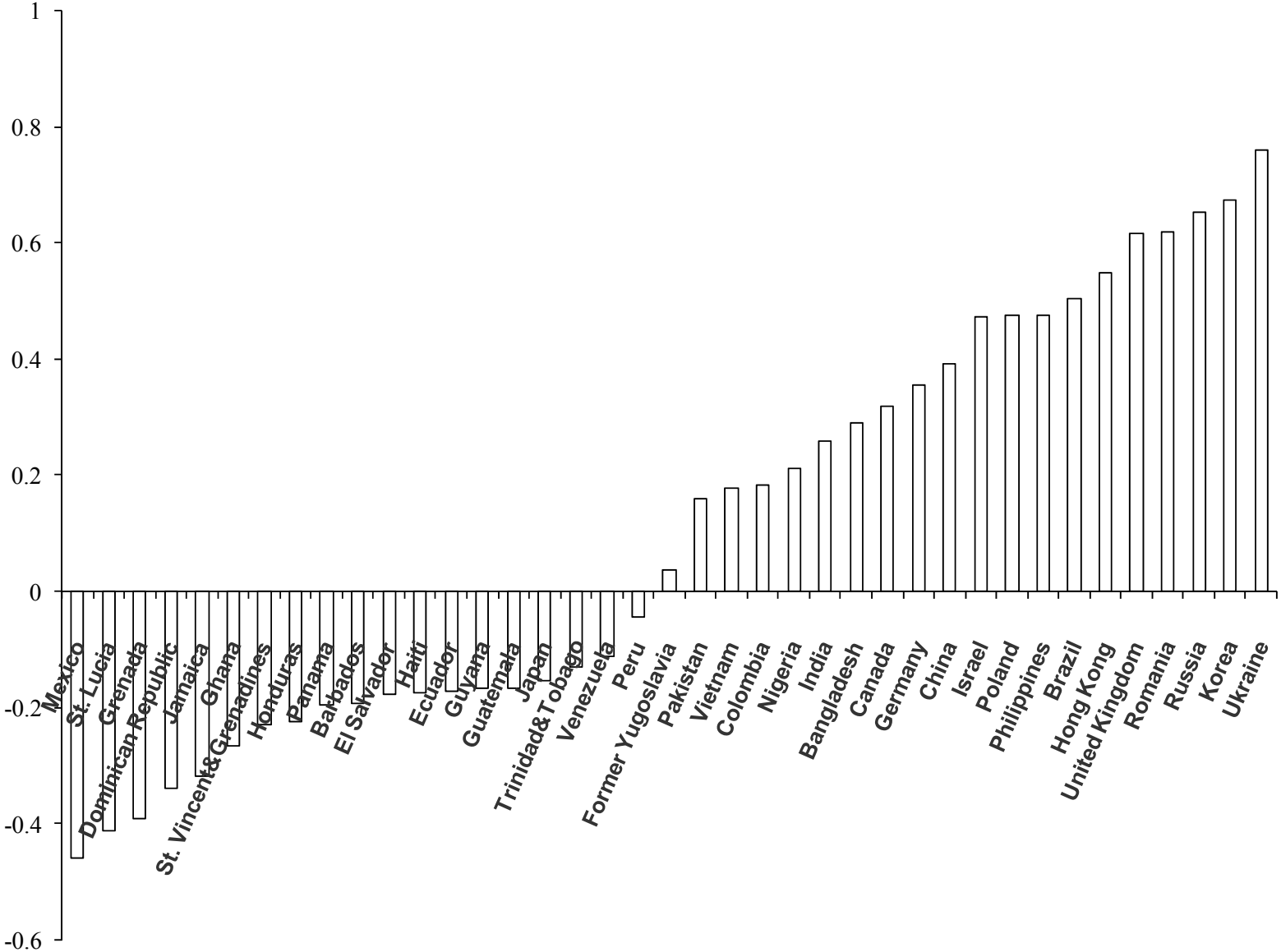
In order to provide sufficient power to the multi-level models, we include in the sample only those students from countries with a substantial number of immigrant students, at least 100 who took a reading or math exam. Such a requirement excludes only a small share of immigrant students; approximately 90% all immigrant students in the public primary schools are included in the 39

[1] Students in the 5th, 6th, and 7th grades took the McGraw Hill Test of Basic Skills (CTB) in reading, comprehension and language and the California Achievement Test (CAT) in mathematics. Students in the 4th and 8th grades took the State English Language Arts (ELA) and State Mathematics tests.

source countries. The math samples include slightly more students since fewer are exempt due to limited English skills.

Figure 1 displays the average performance of the 44,340 students from the 39 source countries on the reading exam. The scores have been standardized to a mean of zero and a standard deviation of one within each grade. Since the New York City native-born average is nearly zero, these means measure the gap between the average performance from students in each source country group and the average native-born student. The variation in performance is wide, ranging from Mexicans who score nearly 0.5 standard deviations below the average native-born to those from Ukraine who score almost 0.8 standard deviations above. The variation in math scores, not shown here in the interest of conserving space, is equally large. On both exams, students from Europe and Asia tend to score above average, while students from Latin America and the Caribbean countries perform at or below average.

Figure 1: Mean Reading Scores of Foreign-born Students by Source Country, New York City, 2000-01



In Table 1, we group source countries (and students) according to the economic conditions of the countries and the characteristics of the immigrants from the countries that settle in New York City. Specifically, we classify countries according to the World Bank's definition of high, middle, or low GNI and whether English is one of the official languages spoken.[2] The countries are further divided into quartiles on the distributions of household income, percent college graduates, and percent who speak English well for immigrants in New York City from each of the 39 countries. For instance, nine immigrant groups earn an average household income of $44,100 or less, representing the bottom quartile of the distribution in household income among the 39 immigrant groups. Over 15 thousand primary school children originated in these nine countries and took a reading exam in 2000.

Table 1: Mean Reading and Math Scores by Country and Coethnic Immigrant Characteristics

		Number of Source Countries	Number of Students	Mean Reading Score	Mean Math Score
Country	Gross National Income (per capita)				
	High: Greater than $9,300	7	2,728	0.478	0.703
	Middle: $760 to $9,300	24	34,548	-0.074	0.053
	Low: Less than $760	8	7,064	0.224	0.394
	English an Official Language				
	Yes	15	16,634	-0.076	-0.012
	No	24	27,706	0.058	0.243
Coethnic Immigrants	Household Income (quartile)				
	Greater than $59,600	10	4,022	0.353	0.532
	$49,101 to $59,600	10	11,889	-0.095	-0.038
	$44,101 to $49,100	10	12,562	0.267	0.464
	Less than or equal to $44,100	9	15,867	-0.208	-0.062
	Percent College Graduates (quartile)				
	Greater than 53.5%	10	9,089	0.534	0.724
	26.8% to 53.5%	10	5,132	0.243	0.460
	20.2% to 26.7%	10	16,187	-0.079	0.017
	Less than or equal to 20.1%	9	13,932	-0.321	-0.193
	Percent Speak English Well (quartile)				
	Greater than 93.7%	10	7,115	-0.131	-0.149
	84.6% to 93.7%	10	11,468	0.020	0.139
	63.6% to 84.5%	10	7,946	0.383	0.558
	Less than or equal to 63.5%	9	17,811	-0.112	0.088

Notes: a) Number of students is based on number of students with reading test scores; the number of students with math scores is slightly higher. b) The mean test scores are averaged across all students within each country and coethnic immigrant category. c) F-tests indicate that test scores are not equal across country and coethnic immigrant groupings at $p<0.05$.

[2] The World Bank glossary can be found at the following website: http://www.worldbank.org/depweb/english/modules/glossary.html.

Some interesting results emerge from these raw comparisons. For instance, though students from high income countries have the highest test scores, students from low income countries perform, on average, better than students from middle income countries. Students from countries where English is not an official language also test higher in reading and math than students from other countries. Turning to the characteristics of the coethnic immigrant communities, we find that students from the top and third quartiles on the income distribution score higher than those in the second and fourth quartiles. In addition, while students from more educated communities tend to earn higher scores, students from the 10 immigrant communities that are highly proficient in English (at least 93.7% speak English well) earn the lowest scores. These comparisons of means suggest that student achievement varies with both country of origin conditions and coethnic immigrant communities, but the relationships are not straightforward.

Students from these different types of countries and coethnic communities also differ in their socioeconomic and demographic characteristics as well as the schools they attend (see Table 2). Students from high income countries, for instance, are more likely to be non-poor (ineligible for subsidized meals) and English proficient. They also attend schools with slightly more experienced teachers and higher shares of students who are not poor. Some of these differences in the characteristics of the students and their schools likely explain the test score differences shown in Table 1.[3]

[3] The correlations among each of the pre- and post-migration characteristics may also explain the raw results shown in Table 1. Indeed, all 10 of the zero-order correlations between the country and coethnic characteristics of the 39 source countries—per capita GNI, English as an official language, mean household income, percentage college graduates, and percentage who speak English well—are positive. However, only half of the correlation coefficients are statistically significant and only three are above 0.6 in magnitude.

Table 2: Selected Characteristics of Students and their Schools by Country and Coethnic Immigrant Characteristics

		Student Characteristics			School Characteristics	
		Percent Non-poor	Percent White	Percent English proficient	Percent of Teachers with 5 or More Years Experience	Percent Non-poor
Country	Gross National Income (per capita)					
	High: Greater than $9,300	25.9	14.6	98.2	59.2	24.6
	Middle: $760 to $9,300	11.1	15.8	88.6	53.9	10.8
	Low: Less than $760	14.1	13.0	93.4	56.8	14.7
	English an Official Language					
	Yes	10.5	2.1	98.4	53.8	11.1
	No	13.5	23.2	84.9	55.2	12.9
Coethnic Immigrants	Household Income (quartile)					
	Greater than $59,600	24.1	11.7	96.8	58.3	20.1
	$49,101 to $59,600	10.1	6.1	98.3	53.8	11.7
	$44,101 to $49,100	20.5	37.5	94.3	57.4	16.5
	Less than or equal to $44,100	4.9	5.5	78.5	52.4	7.3
	Percent College Graduates (quartile)					
	Greater than 53.5%	33.9	55.1	97.2	59.6	22.9
	26.8% to 53.5%	11.5	10.2	93.7	56.5	15.2
	20.2% to 26.7%	9.1	4.8	96.5	54.1	10.5
	Less than or equal to 20.1%	2.9	3.3	76.2	51.6	6.3
	Percent Speak English Well (quartile)					
	Greater than 93.7%	11.4	3.7	98.9	52.0	10.0
	84.6% to 93.7%	10.2	3.2	97.3	55.3	11.9
	63.6% to 84.5%	27.2	66.4	94.6	57.9	19.8
	Less than or equal to 63.5%	7.8	4.9	79.6	54.0	9.9

Notes: A) The means are averaged across all students within each country and coethnic immigrant category. b) F-tests indicate that test scores are not equal across country and coethnic immigrant groupings at $p<0.05$.

Estimating Equation

Our estimating equation explores the effect of country and coethnic community characteristics conditioning on one another and on the differences in the student and school attributes displayed in Table 2. Correspondingly, we regress test scores onto country and coethnic community characteristics, along with a set of student covariates and school fixed effects. We use a random effects model, which treats the within and between country variation as random and models the two sources of variation with first (student) and second (country) level variables as follows:

$$T_{ijk} = \beta_0 + \beta_1 \boldsymbol{C}_j + \beta_2 \boldsymbol{I}_j + \beta_3 \boldsymbol{S}_{ijk} + \beta_4 \boldsymbol{P}_{ijk} + \beta_5 \boldsymbol{Z}_k + \upsilon_j + \varepsilon_{ijk}$$

T is the standardized reading or math score for student *i* from country *j* in school *k*. ***C*** includes the following three variables capturing the economic conditions of the student's home country: two indicators for whether the country is high income or middle income; and a third indicator for whether English is an official language. ***I*** is a vector of human capital characteristics among New York City adult immigrants from country *j*: the natural log of household income, the percentage who are college graduates, and the percentage who speak English well or very well.

Controls for student-level attributes (***S***) include gender, age, race/ethnicity, poor, near-poor, participation in the part-time special education program, whether a language other than English is spoken a home, and three variables that capture the student's English language skills and eligibility for English language instruction: whether the student took the LAB, her score on the LAB (in percentiles), and whether she scored at or below the 40^{th} percentile, indicating English Language Learner (ELL) status and eligibility for English as a Second Language or bilingual education services. ***S*** also includes the number of years that the student has been enrolled in the New York City school system and the student's grade-level.

P includes the student's prior year test score and an indicator for whether a prior year test score was recorded for the student. Controlling for prior year test scores ameliorates potential bias on β_1 and β_2 due to unobserved variables that likely correlate with prior year score and with country and coethnic conditions, such as attitudes towards school and work ethic. Prior year score does not control for unrecorded variables that change between the previous and the current year, or underlying attributes that produce gains in test scores from year to year. ***Z*** is a vector of school fixed effects, which captures the impacts of differences in schools attended. Note that the use of school fixed effects may reduce the potential bias due to unobserved neighborhood characteristics, since most elementary and middle school children attend schools in their neighborhoods.

Estimation of the equation produces two random error components, which allow for a decomposition of the variance in foreign-born student performance into the amount that can be

attributed to across-country variation versus that which can be attributed to student variation within countries. υ_j is the random error associated with the country-specific intercept such that the variation in test scores across countries can be denoted $\tau_{00} = \text{Var}(\upsilon_j)$. ε_{ijk} is the random error associated with the *i*th student in the *j*th country such that the variation in test scores across students within countries can be denoted as $\sigma^2 = \text{Var}(\varepsilon_{ijk})$. The proportion of variance in test scores that can be attributed to across-country sources is, then, measured as $\hat{\tau}_{00} / (\hat{\tau}_{00} + \hat{\sigma}^2)$ and the proportion that can be attributed to student variance within countries is measured as $\hat{\sigma}^2 / (\hat{\tau}_{00} + \hat{\sigma}^2)$.

Regression Results

Table 3 provides the results from our fully-specified models of reading and math achievement (see Appendix Table 1 for descriptive statistics on all student characteristics in both models). Interestingly, many of the findings from our parsimonious analyses in Table 1 remain, despite controls for a host of student attributes (including the students test score in the previous year) and school fixed effects. Immigrants from middle income countries and countries where English is an official language earn lower reading scores than immigrants from other countries. These country characteristics do not affect the math achievement of foreign-born students in the fully adjusted models, as indicated by statistically insignificant coefficients on these variables and insignificant joint F-tests.

Table 3: Regressions of Reading and Math Test Scores

	Reading			Math	
Independent Variable	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error
Country					
High income	-0.049	0.035		-0.000	0.063
Middle income	-0.068*	0.031		-0.050	0.056
English official language	-0.076*	0.033		-0.017	0.055
Coethnic Immigrants					
Log household income	0.147**	0.042		0.196*	0.070
Percent college graduates	0.002*	0.001		0.003*	0.001
Percent speak English well	-0.003**	0.001		-0.007**	0.002
Students					
Poor	-0.156**	0.012		-0.158**	0.013
Near-poor	-0.080**	0.016		-0.060**	0.016
Asian and other	-0.034	0.025		0.000	0.030
Black	-0.083**	0.027		-0.127**	0.031
Hispanic	-0.088**	0.027		-0.102**	0.032
Female	0.119**	0.007		-0.014*	0.007
Age	-0.017**	0.005		-0.030**	0.005
Other than English at home	0.017	0.017		0.044*	0.018
Took LAB	-1.44**	0.052		-0.848**	0.044
LAB Percentile	0.024**	0.001		0.015**	0.001
ELL	0.431**	0.042		0.305**	0.038
Part-time special education	-0.264**	0.017		-0.277**	0.017
Prior year test score	0.577**	0.004		0.571**	0.004
Years in NYC school system	-0.002	0.002		-0.033**	0.002
4th grade	0.010	0.027		-0.220**	0.025
5th grade	0.016	0.023		-0.196**	0.022
6th grade	-0.002	0.019		-0.163**	0.017
7th grade	-0.038**	0.012		-0.089**	0.011
Have subsidized meals data	0.187**	0.019		0.216**	0.019
Have prior year test score	0.498**	0.011		0.430**	0.010
Number of students	44,340			50,728	
Number of schools	896			897	
Number of countries	39			39	
Percent of within-country variation explained	48.7%			42.8%	
Percent of across-country variation explained	97.7%			94.7%	

Notes: a) Both models include school fixed effects. b) Restricted F-tests indicate that all sets of variables (country, coethnic immigrants, students, and school fixed effects) are jointly significant at $p<0.05$ in both the reading and math regressions except for the country characteristics in the math regression. c)
†significant at 10%, * significant at 5%, ** significant at 1%.

Immigrant students from communities that earn higher levels of income and have higher shares of college graduates perform better on the reading and math exams than students from communities with less human capital. Yet children from communities that report to be highly English proficient perform less well on both tests. A one percentage-point increase in the percentage of coethnic immigrants who speak English well is associated with a 0.003 decrease in reading scores and a 0.007 decrease in math scores, controlling for whether English is spoken in the home and the student's own English language abilities.

The coefficients on the student control variables are in the expected direction and consistent with prior research. For instance, the coefficients on the three English proficiency variables (took

LAB, LAB percentile, and ELL) are consistent with the results found in Schwartz and Stiefel (2006): immigrant students who take the LAB perform worse on the exams than those who do not, and among those who take the LAB, a higher percentile associates with higher performance. Moreover, among students with equal English language ability, those who are ELL score higher. Taken together, these findings indicate that students who are flagged as eligible for English language instruction, many of whom received bilingual or ESL services, perform better than other limited English speaking students who are not eligible for such services. For instance, poverty, black, Hispanic, age, and part-time special education participation all correlate negatively with reading and math achievement.

The estimated error components of both regressions allow for a decomposition of the unexplained variation of student achievement into that which can be attributed to variation across students within countries versus across countries. In the unconditional models, where no independent variables are included, the majority of the variation in foreign-born test scores is driven by differences within source countries rather than between them: 88.5% of the variation in reading and 80.5% of the variation in math is due to within-country factors (not shown in Table). With the inclusion of all the variables shown in Table 3, we are able to explain less than half of the within-country variation between students (48.7% of reading and 42.8% of math) but almost all of the across-country variation (97.7% of reading and 94.7% of math). Notably, there remain several important differences between students from the same country that we have not accounted for in our models. We return to this possibility in the discussion.

We tested for the robustness of these estimates using an alternative specification and restricted samples. These results are reported in Table 4 along with the original results for comparison. We first included region fixed effects, grouping countries into those from Asia, Africa, the Caribbean, Latin America, and Europe/Canada (Specification 2 of Table 4). To determine whether the findings are sensitive to unique source country observations, we then re-estimated the

regressions omitting the three source countries at the top and the three source countries at the bottom of the test score distribution (Specification 3 of Table 4). Finally, to further investigate the negative coefficient on the English proficiency variable, we re-estimated the regressions omitting the three sources countries at the top and bottom of the distribution of the percent of coethnic immigrants who speak English language well (Specification 4 of Table 4).

Table 4: Robustness Checks, Regressions of Reading and Math Test Scores

	Panel A. Reading Scores			
	Original Model (1)	With Region Fixed Effects (2)	Omit Extreme Test Score Countries (3)	Omit Extreme % Who Speak English Countries (4)
Country				
High Income	-0.049	-0.043	-0.053	-0.037
	(0.035)	(0.040)	(0.042)	(0.035)
Middle Income	-0.068*	-0.054	-0.073*	-0.077***
	(0.031)	(0.037)	(0.036)	(0.029)
English official language	-0.076*	-0.074†	-0.072†	-0.071**
	(0.033)	(0.042)	(0.037)	(0.032)
Coethnic Immigrants				
Log household income	0.147**	0.135**	0.155**	0.135***
	(0.042)	(0.050)	(0.048)	(0.041)
% College graduates	0.002*	0.001	0.001	0.001*
	(0.001)	(0.001)	(0.001)	(0.007)
% Speak English well	-0.003**	-0.003**	-0.003**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Number of Countries	39	39	33	33
Number of Students	44,340	44,340	35,652	30,195
	Panel B. Math Scores			
	Original Model (1)	With Region Fixed Effects (2)	Omit Extreme Test Score Countries (3)	Omit Extreme % Who Speak English Countries (4)
Country				
High Income	-0.000	-0.048	-0.129*	0.012
	(0.063)	(0.061)	(0.066)	(0.057)
Middle Income	-0.050	0.015	-0.108*	-0.064
	(0.056)	(0.057)	(0.054)	(0.047)
English official language	-0.017	0.004	-0.083	0.003
	(0.055)	(0.065)	(0.055)	(0.049)
Coethnic Immigrants				
Log household income	0.196*	0.136†	0.183**	0.187**
	(0.070)	(0.074)	(0.061)	(0.062)
% College graduates	0.003*	-0.000	0.002†	0.034*
	(0.001)	(0.001)	(0.012)	(0.017)
% Speak English well	-0.007**	-0.005**	-0.005**	-0.007**
	(0.002)	(0.001)	(0.002)	(0.002)
Number of Countries	39	39	33	33
Number of Students	50,728	50,728	46,319	32,209

Notes: a) Standard errors in parentheses. b) In spec (2), indicators for the following regions were included: Asia, Africa, Caribbean, and Latin America (Europe/Canada as the reference group). c) In reading spec (3), children from the following countries were omitted: Ukraine, Korea, Russia, Mexico, St. Lucia, Grenada. d) In math spec (3), children from the following countries were omitted: Hong Kong, Korea, Ukraine, Grenada, Haiti, Honduras. e) In spec (4), children from the following countries were omitted: Canada, Nigeria, St. Vincent & Grenadines, China, Dominican Republic, Mexico. f) All regressions include the covariates listed in Table 3. g) †significant at 10%, * significant at 5%, ** significant at 1%.

These alternative specifications and restricted samples alter some findings and uphold others. First, the addition of region fixed effects removes the statistical significance of the negative

coefficient on the middle income countries in reading, suggesting that the observed differences in the achievement of children from more and less developed countries are driven by unobserved regional differences, or that we do not have sufficient variation within regions to yield efficient estimates. Second, omitting the highest and lowest test performance source countries increases the negative influence of country GNI. Third, the small positive coefficient on the percentage of coethnic immigrants who are college graduates becomes statistically insignificant or marginally significant in several models. Yet the negative association between birth in an English speaking country and reading scores as well as the negative association between coming from a community that speaks English well and reading and math scores is robust to these checks. The large, positive influence of the household income of the immigrant communities is also insensitive to the addition of region fixed effects or restricted samples.

We estimated several other alternative specifications that we do not have space to present. For instance, we included the percentage of coethnic immigrants who are poor instead of household income and mean years of education instead of the percentage college graduates. The direction and significance of the effects of these alternate measures of human capital were the same as those presented in the paper. We also explored additional country-level variables, despite some concern for measurement error, such as the adult literacy rate and the share of youth in primary school. None of these variables were statistically significant. In another specification, we substituted the school fixed effects with observed school characteristics, such as expenditures and teacher qualifications. The coefficients on the country and coethnic immigrant characteristics in these models were qualitatively similar to those in the models using school fixed effects. All of these results can be obtained from the authors.

Discussion

Prior research on immigrant students tells us that they often perform better than native-born students but that they are heterogeneous by country of origin. In our analysis of immigrant students from 39 countries in New York City public schools, we find variation that ranges from almost 0.5 standard deviations below native-born to almost 0.8 standard deviations above native-born on reading exams, with similar variation in math exams. We go further to examine the specific contribution of the conditions in students' home countries and the human capital characteristics of their coethnic communities to this wide variation in their achievement.

We find some noteworthy results. Our simple variance decomposition reveals that the majority of the variation in foreign-born achievement turns out to be across students within countries rather than between them. An estimated 89% of the variation in foreign-born reading achievement and 81% in math achievement are due to differences between students from the same country. These results suggest that while we observe some groups of immigrants to perform better than others, much of this variation is due to the differences in the students and the same characteristics that drive achievement differences among native born students, such as poverty, race, and English proficiency.

We also find that the conditions in students' home countries shape their achievement in ways that are not always straightforward. Specifically, children from middle income nations and nations where English is an official language have lower reading scores than students from other nations, though no such effects are observed for math achievement. Thus, knowing that a child was born in a poor country or a country that does not officially acknowledge English is not a good predictor of whether he will succeed or fail in U.S. schools. In fact, many students from such countries appear to overcome these challenges.

Finally, the human capital characteristics of the broader immigrant community translate to the next generation. Children from immigrant communities with higher levels of income and educational attainment perform better in school than children from communities with less human

capital. Yet children in highly English proficient immigrant communities score slightly lower on reading and math exams than other children. The negative influence of the larger communities' English proficiency on students is conditional on the student's own ELL status and whether English is spoken in the home. It is also robust to several sensitivity checks. These findings suggest that the existence and retention of native languages and perhaps other cultural traditions may be beneficial to immigrant children in large urban districts, such as New York City. Our finding is consistent with some of the theoretical work on immigrant assimilation (e.g., Portes and Rumbaut, 2001) and suggests that school systems and cities may benefit from helping immigrants retain aspects of their cultures and languages. Another possible explanation is that English-speaking immigrant communities speak a non-standard form of English that penalizes students more than those who are less familiar with English.

We also remind the reader that our models explain less than half of the variation in foreign-born student achievement, suggesting that even though we include many controls and prior year test scores, we have not fully explained foreign-born performance. Some of the unexplained variance is no doubt simply random error across individuals but some of the estimated effects that we observe may be biased by the exclusion of characteristics, such as motivation and underlying ability that influence children's achievement from one year to the next. Thus, the negative influences of the development and English proficiency of children's source countries and the English proficiency of their communities may be due to the positive selection of such groups on these unobserved traits. Whether these country and coethnic community contexts are truly exogenous to test scores or determined by underlying motivation, these negative estimates of English exposure and country development challenge some of the preconceived views of immigrants from certain parts of the world and call for further research. For instance, an effort to quantify the attitudes, motivations, and values of foreign-born from many different countries would help us better understand the drivers of source country variation in achievement.

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Appendix Table 1: Mean Student Characteristics

	Reading Sample	Math Sample
Poor	0.797	0.806
Near-poor	0.089	0.083
Asian and other	0.264	0.249
Black	0.245	0.219
Hispanic	0.339	0.398
Female	0.498	0.497
Age	11.774	11.801
Other than English at home	0.682	0.721
Took LAB	0.133	0.241
LAB Percentile	25.635	16.250
ELL	0.100	0.207
Part-time special education	0.046	0.041
Prior year test score	0.059	0.059
Years in NYC school system	4.481	4.057
4th grade	0.161	0.161
5th grade	0.182	0.178
6th grade	0.203	0.203
7th grade	0.230	0.232
Have subsidized meals data	0.945	0.941
Have prior year test score	0.818	0.807
Number of students	44,340	50,728

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