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**IMMIGRANTS IN PUBLIC SCHOOLS: A CLOSER LOOK AT CROSS-
GENERATIONAL DIFFERENCES IN STUDENT OUTCOMES**

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IMMIGRANTS IN PUBLIC SCHOOLS: A CLOSER LOOK AT CROSS-GENERATIONAL DIFFERENCES IN STUDENT OUTCOMES

Abstract: We make use of a new data source – matched birth records and longitudinal student records in Florida – to study the degree to which student outcomes differ across successive immigrant generations. Specifically, we investigate whether first, second, and third generation Asian and Hispanic immigrants in Florida perform differently on reading and mathematics tests, and whether they are differentially likely to get into serious trouble in school, to be truant from school, and to graduate from high school. We find evidence suggesting that while late-arriving first generation immigrants perform at a lower level than do later-arriving first generation immigrants and those born in the United States, early-arriving (in the third grade or younger) first generation immigrants perform better than do second generation immigrants, and second generation immigrants perform better than third generation immigrants. These patterns of findings hold for both Asians and Hispanics, and suggest a general pattern of successively reduced achievement in the generations following the generation that immigrated to the United States. Notably, we find suggestive evidence that implies that the degree to which a student identifies with the ethnic identity of the original immigrant ancestors may explain some of these patterns across generations of Asian immigrants.

Immigrants in Public Schools: A Closer Look at Cross-Generational Differences in Student Outcomes

1. Introduction

Over the last five decades, the United States has experienced the second largest wave of immigration in its history. Triggered by the enactment of the Immigration and Nationality Act of 1965, this immigration flow gained further momentum in the 1990s and changed the demographic composition nationwide. The last thirty years have averaged more than one million documented immigrants per year, and unlike the earlier waves of immigration, the majority of these immigrants came from Latin America and Asia. Immigrants and children of immigrants currently account for nearly a quarter of all school-aged children in the United States, and are projected to account for one-third by 2050 (Passel, 2011). How this new wave of immigrant youth fare in the U.S. public education system, therefore, has significant short-term and long-term welfare implications.

There exists an extensive literature on immigrants and their educational attainment compared to natives in the U.S., but comparatively little is known about how well immigrant students perform while in school, primarily due to data limitations.¹ These “intermediate” educational outcomes, which might help explain the discrepancies in educational attainment and labor market outcomes, constitute the main focus of this project. Two streams of research dominate the literature in this context, with most of the earlier studies relying on survey data

¹ Some examples in the earlier sociological and anthropological literature are Carter and Segura (1979), Trueba (1987), Perlmann (1988), Ogbu (1978, 1987), and Ogbu and Matute-Bianchi (1986). See Chiswick and DebBurman (2004) for an overview of this literature. There are several key emerging findings in the recent literature. First, first generation immigrants tend to attain fewer years of schooling compared to natives. For instance, using Current Population Data (CPS), Chiswick and DebBurman (2004) show that first generation immigrants, on average, obtain two years less schooling compared to natives. Further, this schooling gap depends heavily on age at immigration, with immigrant adults who entered the U.S. early in childhood acquiring years of schooling comparable to native adults (Gonzalez (2003) and Chiswick and DebBurman (2004)). Also see Dustmann (2011) and Lüdemann and Schwerdt (2010) for a brief overview of the literature on the educational experiences of immigrants in European countries.

(e.g. Kao and Tienda (1995), Kao (1999), Glick and White (2003), Portes and MacLeod (1996), and Cortes (2006)) whereas the more recent literature utilizes large administrative datasets (e.g. Schwartz and Stiefel (2006), Conger et al. (2007), Stiefel (2010)).²

Several overarching conclusions emerge from the extant literature. First, immigrant students, especially those who migrate early in childhood, have been shown to perform comparable to or even better than their native peers on elementary and middle school tests (Schwartz and Stiefel (2006), Kao (1999), Portes and MacLeod (1996), Kao and Tienda (1995), Cortes (2006)). Teen immigrants who enter during high school years, however, do not perform as well (Chiswick and DebBurman (2004); Ruiz-de-Velasco et al. (2002)).³ Second, there appears to be significant heterogeneity in immigrant achievement by country of origin. For instance, immigrant students from Central America and the Caribbean usually lag behind, while Asian immigrants tend to outperform, their native peers in standardized tests.

Administrative data and survey data each present different benefits and challenges in this context. For instance, using survey data to investigate “nativity gaps” allows comparisons between first, second, and third (and higher) generation immigrants as these data typically provide detailed information about the children’s families (such as parental education and parents’ countries of origin). However, most of these datasets contain a limited number of student outcomes (and no high-stakes outcomes), and no information about the schools these students attend. Further, studies that rely on survey data commonly suffer from small sample

² A related strain of research examines the effect of immigrant students on their native peers. Recent examples in this context include Conger (2012); Cortes (2006); Crosnoe and Lopez-Gonzalez (2005); Schwartz and Stiefel (2009); and Gould, Lavy and Paserman (2009). The overarching conclusion of these studies is that immigrant students have either small or no effect on the achievement levels of their native peers.

³ A recent study by Stiefel et al. (2010) takes one step further and isolates the effect of immigration on student outcomes from that of student mobility in a difference-in-differences framework. Their findings indicate that teen immigrants outperform observationally comparable native migrants in terms of high school graduation and test scores.

sizes, which hinder subgroup analysis and further complicate understanding potential mechanisms through which the relationships may be operating. On the other hand, large administrative datasets sometimes present very detailed information about student experiences in the public school system, yet they lack detailed information on family characteristics, and studies making use of administrative data are unable to identify second versus third generation immigrants⁴, and hence present comparisons between first generation immigrants and all other U.S. born students.

We make use of a unique dataset from Florida, in which student records are matched with birth certificate data for all children born between 1992 and 2002, in order to overcome the limitations of the prior literature and address a set of heretofore unanswered questions. Linking school records to birth retake advantage of the positive benefits of both administrative data and survey data in an environment in which we can observe outcomes for the entire population, and Florida is the only major immigrant-receiving state in the United States where it has proven feasible to match birth and school records to date. First, the birth certificate data allow us to identify second-generation immigrants, and offer the chance to observe a large range of variables (e.g., parental education and marital status) not observed in school records. They also enable us to contrast maternal ethnic identities and children's ethnic identities, permitting us to more thoroughly compare across generations in an environment in which ethnic identities may change over generations. Second, because we can follow approximately two million individual students over more than a decade, we are able to examine the progress of immigrant students after they enter Florida public schools, and look within subgroups of interest (e.g. by country of origin). Finally, using our administrative data, we can examine not only high-stakes outcomes like

⁴ We classify all children whose parents are U.S.-born as “third generation” immigrants.

student test scores and high school graduation, but also non-cognitive outcomes such as disciplinary incidents and truancy.

Florida is an ideal location to study this question both because of its outstanding student longitudinal data system and also because of its position as one of the major destinations for the recent wave of immigration. Currently, foreign born individuals constitute one-fifth of the population in Florida, and 9.2 percent of all foreign-born individuals and 8.5 percent of all foreign-born children in the United States reside in Florida. Further, the composition of these immigrants closely resemble the new wave of immigrants nationwide: 85 percent of the current immigrant population in Florida was born in Latin America or Asia. In the 2009-10 school year, one-tenth of all Florida K-12 public school students were born outside of the U.S, and another quarter of Florida's students have foreign-born parents.

Using these data, we first investigate the gaps in student achievement, misbehavior, truancy, and persistence in high school between first, second and third generation immigrant students, explore how these gaps evolve across grades, and check for heterogeneities by various subgroups of interest (e.g. by country of origin). We then examine the extent to which these gaps are driven by education production function inputs that are typically out of the control of school system such as socioeconomic differences, and malleable factors such as differences in school quality.

We find evidence suggesting that while late-arriving first generation immigrants perform at a lower level than do later-arriving first generation immigrants and those born in the United States, early-arriving (in the third grade or younger) first generation immigrants perform better than do second generation immigrants, and second generation immigrants perform better than third generation immigrants. These patterns hold for both Asians and Hispanics, and remain

unchanged even after controlling for a wide array of student, family and school attributes, suggesting a general pattern of successively reduced achievement across immigrant generations that is mostly unexplained by observed characteristics. These findings contradict the traditional straight-line assimilation theory of immigrant integration, which predicts steady improvement in outcomes across generations, and present evidence supporting recent immigrant optimism dissipating across generations. Another mechanism that might lead to these patterns is differential attrition from the ethnic identity of the original immigrant ancestors, an explanation we find evidence for across generations of Asian immigrants.

2. Theoretical Considerations

For almost a century, many social scientists have relied on the theoretical framework introduced by Park (1914), and later extended by Gordon (1964) to explain the immigrant integration process. This framework, known as *straight-line assimilation*, predicts that immigrants will inevitably blend into the mainstream culture over time in four stages. First, immigrants will come into contact with one another, followed by a period of conflict. The mainstream will eventually accommodate the immigrant group, who will then culturally and structurally assimilate into the native population. This assimilation is primarily driven by the wealth and education accumulation of second and higher generations, which helps eliminate discrimination by the native population (Kao and Tienda, 1995).

This theoretical framework implies several mechanisms that might trigger better educational outcomes for second and higher generation immigrants. First, cultural assimilation would suggest higher rates of English proficiency among second and higher generation immigrants. Aside from its negative effect on student ability to learn course content in English,

limited English proficiency among recent immigrants might hinder parental involvement in home learning (e.g. assistance with homework) or school activities (e.g. PTA meetings). English deficiencies combined with lack of social networks might also increase the cost of information about school and/or teacher quality within schools for recent immigrants, leading to disparities in school and teacher inputs in the education production function.

Second, cross-generational differences in socioeconomic status might lead to differences in student outcomes. As implied by structural assimilation, if immigrant families are able to accumulate wealth and education across generations and go up the socioeconomic ladder, cross-generational differences in school quality might arise as recent immigrants are less likely to afford to reside in neighborhoods with higher quality schooling options. Further, second and third generation immigrants might experience better learning opportunities outside the school either through private tutoring or through higher quality home learning activities with their better educated parents.

However, the extent to which this theoretical framework, which was developed based on the immigrant experiences at the turn of the 19th century, can be applied to the new wave of immigration is highly debated. For instance, Suarez-Orozco (2000) argues that integration into the mainstream is no longer inevitable and the experiences of recent immigrants diverge from the straight-line assimilation framework in three important ways. First, recent immigrants are less likely to break ties with their origins due to the relative ease and accessibility of mass transportation and the new communication technologies. Further, these ties are refreshed with continuous migratory flow from their countries of origin. Second, unlike the immigrants of the last century, new immigrants face an increasingly diverse, multicultural and multilingual mainstream. Finally, the declining demand for low-skilled labor in the U.S. workforce might

inhibit upward social mobility for low-skilled new immigrants. All these factors might hinder immigrant integration into the middle-class, white, English-speaking mainstream upon which the traditional public school system was built, and thus lead to no meaningful differences in educational outcomes across immigrant generations.

Another mechanism that might drive relatively better educational outcomes for first generation immigrants (and, potentially, the children of immigrants) is a decline in educational motivation in more established generations. This might arise, for instance, due to immigrant optimism – recent immigrants believing that they will eventually experience upward social mobility through education even though they typically start at the bottom of the socioeconomic ladder (Kao and Tienda, 1995). On the other hand, second or higher generation immigrants might pass their leveled educational aspirations to their children, having experienced prejudgement and discrimination. Overall, the implications of the prior theoretical literature on immigration is ambiguous as to how well recent immigrants would fare in the U.S. public school system compared to their second and third generation peers, the main question we address in this study.

3. Data and Empirical Strategy

3.1. Data

In this project, we use detailed individual-level administrative data that cover all K-12 students in Florida for years between 2002-03 and 2011-12. These longitudinal data contain reading and math scores of all students between grades three and ten in two statewide tests, along with a wealth of student characteristics including student demographics, poverty, measures of English proficiency (limited English proficiency indicator and language spoken at home,

reported by parents), attendance, disciplinary incidents, and, most importantly, the country of birth for all students. This variable enables us to identify first generation immigrants in the sample and their countries of origin.

More importantly for the purposes of this project, we are able to make use of student-level administrative data that have been matched with student birth records for every child born in Florida between 1992 and 2002 and who subsequently attended public school in Florida. This unique linked data source is crucial for allowing us to carry out this analysis because it marries the benefits of survey data with the benefits of population-level longitudinal administrative data. Birth records are crucial for the purposes of this project as they contain information about the mother's country of birth, which allows us to identify second generation immigrants (i.e. those who were born in the U.S. to immigrant mothers) and their countries of origin, and they also offer background information not typically seen in school records.⁵ Because of the unique circumstances of Florida – especially the fact that social security numbers are linked to both birth and school records – the birth and school records are nearly perfectly matched (Figlio et al., forthcoming), and we have match rates that far surpass those observed in other settings in which birth and school or later programmatic participation records have been matched.⁶ A high match rate is especially important when considering a Hispanic population, given the higher concentration of Hispanic surnames relative to names from other origins. Because we can

⁵ Throughout the analysis, we identify second generation immigrants as those who were born in the U.S. to foreign born mothers. Another commonly used approach in this context is to define second generation as those who were born in the U.S. with at least one immigrant parent. In this study, we cannot utilize this alternative definition as we do not observe father's birth place in the birth records. Therefore, it is important to note that some students who would be identified as second generation under the alternative are categorized as third generation in our analysis. However, this should not be a great concern, since, based on the recent Census estimates, among the households with a native wife, only 3 percent have a foreign-born husband in the U.S. (<http://www.census.gov/prod/2013pubs/acsbr11-16.pdf>, accessed 4/18/2014).

⁶ Birth and school records have not yet been successfully matched, to our knowledge, in any of the other high-immigration states in the United States.

determine second versus third generation immigrant status only for Florida-born children born between 1992 and 2002, we restrict the non-Florida-born data to those years of birth as well.

Figure 1 presents the distribution of immigrant generations by major race/ethnicities in Florida. In this graph, the first category represents the foreign born students, the second category identifies students born in Florida to foreign born mothers, the third category represents Florida born students with U.S. born mothers, and the fourth category denotes students born in another state in the U.S. Overall, 71 percent of children in Florida public schools were born either abroad or in Florida – a necessary condition for understanding second versus third generation immigrant status. Of those for whom it is possible to divine immigrant generation, about 14 percent are first generation immigrants, 21 percent are second generation, and 66 percent are third generation (or longer ago) immigrants. The distribution among Hispanic and Asian students, on the other hand, reflect the recent wave of immigration into the U.S., with the majority of Hispanic and Asian students being first or second generation immigrants. For instance, among Hispanics born either in Florida or abroad, 33 percent of the students are foreign born and 47 percent have an immigrant mother. Among Asians born either in Florida or abroad, 43 percent of the students are foreign born and 54 percent have an immigrant mother. One-fifth of Hispanics and three percent of Asians for whom we can determine generation status are in the third or higher generation. In our main analysis, we exclude the students born in another state as we cannot identify their immigrant generation. This leaves us with approximately 13 million student-year observations for roughly 2 million unique students.

In any analysis of Hispanic immigrants, especially in a location such as Florida, there is the question of how to characterize those who were born (or whose parents were born) in Puerto Rico. Just over 9 percent of first generation Hispanic immigrants and 11 percent of second

generation Hispanic immigrants in Florida are of Puerto Rican origin, so this is a meaningful decision in the present analysis. Puerto Ricans are U.S. citizens, so have different access to social services, etc. than do non-Puerto Rican Hispanic immigrants, but they also come from a location that is culturally and linguistically very distinct from most of Florida. In this paper, we follow the lead of the Florida Department of Education and treat those born in Puerto Rico as immigrants to the United States. That said, all of our results reported below are virtually unchanged regardless of whether we consider those born in Puerto Rico or those born to Puerto Rico-born mothers to be first or second generation immigrants or to be third generation immigrants.⁷

Table 1 presents the descriptive statistics for our five outcomes of interest by race/ethnicity. For achievement measures, we use Florida Curriculum Assessment Test (FCAT-SSS) scores in reading and math, standardized to zero mean and unit variance at the grade-year level. We focus on the test scores of students in tested grades in elementary and middle school (i.e. grades 3 through 8). For the non-cognitive outcomes, we use the disciplinary incident indicator (i.e. whether the student was involved in a disciplinary incident) and the attendance rate (i.e. percent days absent) for all K-12 grades. For high school persistence, our primary measure is an indicator of receiving standard diploma within four years after entering the 9th grade for the first time.⁸ We conduct this persistence analysis using our older cohorts (those born before 1995) whom we observe for at least four years after they start high school.

Racial gaps in Florida resemble the documented gaps in the literature, with Hispanic and black students performing significantly worse and Asians performing significantly better than

⁷ Results of analyses in which we consider children born in Puerto Rico and those born to Puerto Rican mothers to be third generation immigrants are available in Appendix C.

⁸ We also examined differences in terms of students getting either a standard or a special diploma, or whether the student had not graduated after four years. The patterns of findings are very similar to those reported herein, and these results are available upon request.

whites in standardized tests. Hispanics have comparable incident and attendance rates to whites, whereas Asians are significantly less likely to be involved in a disciplinary incident, and have higher attendance rates. High school graduation rates also follow a similar pattern, with Blacks having the lowest 4-year graduation rates, followed by Hispanics, whites and Asians. In the analysis that follow, we focus on the cross-generational differences among Hispanic and Asian immigrants, the two largest sources of immigration in the U.S. in recent years, using third generation white students as the baseline group.

3.2. Empirical Strategy

We start the analysis by exploring the differences in student outcomes across immigrant generations among Hispanic and Asian students in our sample. Aside from comparisons of raw means across immigrant generations, we also present findings from simple OLS regressions where we control for grade and year fixed effects to account for differences across grades and years in some specifications. To investigate heterogeneity within immigrant populations, we repeat the same analysis for different subgroups of interest; for instance, by the age at entry into the school system, and by the country of origin.

We then investigate the mechanisms that contribute to gaps in student outcomes across immigrant generations. We consider two education production function inputs. First, we explore how much differences in student and family attributes (e.g. poverty, parental English proficiency, special education status, parental education, and mother's marital status) explain differences in outcomes. Second, we ask whether differences in schools attended (along, for instance, measures of integration and peer performance) explain these gaps in outcomes.

To address these questions, we first present simple comparisons between the observed student and school attributes across immigrant generations. We then control for these covariates in the regressions and examine how much the estimated gaps in outcomes across generations change. In some specifications, we include school-by-year fixed effects to see how whether within-school differences across generations differ significantly from the overall differences in outcomes. Regardless of whether we include the school by year fixed effects in a particular specification, we cluster all standard errors at the school by year level.

4. Results

4.1. Raw Differences in Outcomes Across Generations

The top panel in Table 2 presents the average student outcomes for first, second, and third generation Hispanic immigrants, along with third generation white students. We observe that outcomes differ, sometimes dramatically, across generations. With respect to test scores, first generation Hispanic immigrants score substantially worse than do either second generation or third generation Hispanic immigrants, and that second generation immigrants score modestly better than do third generation immigrants in math (though third generation Hispanic immigrants outperform second generation Hispanic immigrants in reading). Second generation Hispanic immigrants have fewer behavioral problems than do either first or third generation Hispanic immigrants (as well as third generation whites), and there exist modest differences in absenteeism, with second generation Hispanic immigrants having the lowest absenteeism rates, as well. Second generation Hispanic immigrants have substantially higher rates of high school graduation than either first generation (with the lowest graduation rates) or third generation Hispanic immigrants.

The bottom panel of Table 2 presents the first-second-third generation comparison for Asian immigrants. The U-shaped relationships observed with Hispanic immigrant generations are even more pronounced in the case of Asian immigrants. Second generation Asian immigrants dramatically outperform both first and third generation Asian immigrants on test scores, and, indeed, third generation Asian immigrants score worse in math than do first generation Asian immigrants. Second generation Asian students have the lowest rates of disciplinary incidents and absenteeism rates as well, and they have by far the highest rates of high school graduation.

In summary, the descriptive evidence indicates that U.S.-born children of Asian and Hispanic immigrants perform better in several schooling dimensions than do others who self-identify with the same ethnicity from different immigrant generations. The next question, then, is what explains these differences. Do children from different immigrant generations attend different schools? Do they have different family backgrounds in other dimensions? Or are there factors that are fundamentally related to immigrant generation that are at play here?

Tables 3 and 4 present descriptive differences between first, second, and third generation Hispanic and Asian students and third generation white students. Table 3 shows cross-generational differences in student characteristics while Table 4 shows cross-generational differences in school attributes. Some variables – those recorded on birth records -- are only observed for second and third generation students.

There are several findings worth highlighting on Table 3. First, As can be seen in the first two columns of Table 3, first and second generation Hispanic and Asian immigrants have reasonably similar poverty rates that are higher than their third generation peers, as evidenced by free or reduced price lunch (FRPL) eligibility. Second, there are considerable cross-generational differences along measures of English proficiency and special education. For instance, first

generation immigrants are significantly less likely to declare English as their native language compared to second and third generation immigrants (5 percent for first generation, 16 percent for second generation, and 54 percent for third generation among Hispanics; 32 percent for first generation, 42 percent for second generation, and 87 percent for third generation among Asians), more likely to be currently identified as limited English proficient (45, 23 and 9 percent for first, second, and third generation respectively among Hispanics; 28, 10 and 2 percent for first, second, and third generation respectively among Asians) or to have ever been identified as an LEP student. On the other hand, second generation Hispanics are more likely to be identified as special education students, primarily due to higher rates of students with language and learning disabilities among this group. Finally, second generation Hispanics have comparable maternal attributes as third generation, with slightly younger, single mothers at the time of delivery. For Asians, on the other hand, we observe significant differences in maternal characteristics. Third generation Asian immigrants have less educated mothers (22 versus 36 percent with college degree, 18 versus 14 percent with less than high school), who were younger (26 versus 30 years old) and more likely to be single (32 versus 12 percent) at the time of delivery.

Aside from student attributes, another mechanism that might drive the gaps in student outcomes is the differences in schools attended, which might arise for several reasons. For instance, if immigrants accumulate wealth and education over time across generations as implied by structural assimilation hypotheses, differences in residential choice might lead to cross-generational differences in schools attended. Further, holding socio-economic status constant, students who recently immigrated to the U.S. might attend different schools because they are less informed about school quality (or the schooling choices available to them) and/or they might prefer less integrated schools with larger proportions of students with the same race/ethnicity or

the same country of origin. Table 4 explores these possibilities and show that the first and second generation Hispanic immigrants attend similar schools along measures of peer performance in standardized tests and demographic composition. The only significant divergence is that the former student group attend schools with higher incident rates, and schools with slightly higher foreign born population. Similar gaps are observed for Asian immigrants, with the exception that the second generation seem to attend schools with slightly better performing peers. Compared to their second generation peers, third generation Hispanics attend more racially integrated schools with slightly more affluent and better performing peers. Third generation Asians also attend more integrated schools, yet their peers perform worse in reading and math tests compared to second generation Asians.

4.2. First versus Second Generation Immigrants

We now turn to observing the degree to which differences across generations can be explained by observable factors. Table 5 presents the gaps in student outcomes between second and first generation immigrants in a regression framework, where the top panel compares second to first generation Hispanic students and the bottom panel does the same for Asian students. All regressions include grade and year fixed effects, and the first column provides the estimates in models with no additional covariates, yielding analogous findings to those seen in the descriptive Table 2. For instance, second generation immigrants outperform first generation Hispanics by 22 percent of the standard variation in reading, and 14 percent in math (0.21σ in reading, and 0.14σ in math for Asians).

Columns (2) through (5) introduce different student and school-level covariates into the regression, starting with FRPL eligibility in (2) and followed by special education status in (3),

school-by-year fixed-effects in (4), and measures of home language (an indicator for whether the family reports speaking English at home) in (5).⁹ When we carry out this exercise, we observe that none of the family or school factors appear to substantially explain test scores. The gaps in test scores for Hispanics vary between 0.21σ and 0.25σ in reading and between 0.13σ and 0.17σ in math, and the gaps in test scores for Asians vary between 0.16σ and 0.21σ in reading and between 0.10σ and 0.14σ in math, depending on specification. Differences in disciplinary incidents and absenteeism rates are precisely measured, but consistently very small in magnitude across all specifications for both Hispanic and Asian immigrants. However, model specification does make a substantial difference in the estimated magnitude of the differences in the likelihood of high school graduation, for both Hispanic and Asian immigrants: The inclusion of school by year fixed effects nearly halves the estimated difference in graduation rates for Hispanic immigrants and more than halves the difference in graduation rates for Asian immigrants, suggesting that a sizeable fraction of the observed cross-generational gaps in graduation rates is due to the fact that first and second generation Hispanic and Asian immigrants tend to attend different schools.¹⁰

⁹ Several studies in the literature use limited English proficiency as a covariate in this context (e.g. Schwartz and Stiefel (2006), and Kao and Tienda (1995)). We choose not to follow this approach for the following reason. In Florida, an LEP student is defined as “a student whose home language is one other than English and whose English aural comprehension, speaking, reading, or writing proficiency is below the average English proficiency level of English speaking”. Therefore, once native language is controlled for, LEP status captures the differences between the language skills of students, which are likely correlated with differences in their cognitive developments. Therefore, regressions controlling for the LEP status might understate the underlying cognitive differences across immigrant generations.

¹⁰ We also conduct separate analyses for Hispanic immigrants by country of origin. We are able in the birth records to differentiate between those from Cuba, Mexico, Puerto Rico, and other Latin America. The results broken down by place of origin are presented in Appendix A. For all these student subgroups, second generation outperform first generation in both reading and math, and cross-generational discrepancies in observed student and school characteristics once again fail to explain these gaps in achievement.

Second, gaps in student and school attributes are considerably different for the former group than the latter (Tables A3 and A4). For instance, first generation Cuban and Puerto Rican immigrants are significantly more likely to be FRPL eligible than their second generation peers. Further, compared to the second generation, first generation immigrants from these countries attend schools with higher incident rates and lower achieving peers who are less affluent and more likely to be foreign born. On the contrary, first generation Hispanic immigrants from Mexico and other Latin American countries are slightly more affluent than second generation immigrants from the same countries, and attend more racially integrated schools with higher performing and more affluent students, and lower incident rates.

4.3. Are the Differences Between First and Second Generation Immigrants Explained by Age at Entry?

An overarching conclusion in the immigration literature is that the age at entry into the school system has a large effect on the future achievement of first generation immigrants. To see how achievement gaps between first and second generation immigrants change when account for this factor, we repeat our previous analysis, but this time excluding the “late entering” students who enter the Florida public school system after the third grade. These late entrants constitute about one-third of the first generation immigrant students. In this analysis, we restrict the sample to the cohorts born after 1993 for whom we can identify early entry.

The results of this restriction are reported in Table 6. We observe that when we compare relatively early-entering immigrant children with Florida-born children of immigrant parents, the estimated achievement gaps decline substantially. Consider our most preferred specification, column (5): Test score gaps decline from 0.23σ to 0.05σ in reading and from 0.16σ to 0.03σ in math for Hispanics, and from 0.16σ to 0.02σ in reading and from 0.11σ to 0.02σ in math for

Asians. High school graduation gaps decline from 7.6 percentage points to 2.0 percentage points for Hispanics, and from 5.6 percentage points to 1.6 percentage points for Asians. (Note that the sizeable share of the cross-generational gaps in graduation rates are still explained by cross-school differences in the schools that early-arriving first and second generation immigrants attend.) Taken together, these findings make clear that much, though not all, of the observed differences between first generation and second generation immigrant outcomes are driven by late-arriving foreign-born students who experience increased difficulty in catching up to their native-born peers.

Beyond cross-sectional comparisons between first and second generation immigrants, another interesting question is how achievement gaps in student outcomes evolve across grades. The primary challenge in the cross-sectional analysis is that first generation immigrants have significantly higher attrition rates than do second generation immigrants. For instance, of all first generation Hispanic immigrants who start kindergarten in a Florida public school, 27 percent leave the school system before the end of fifth grade, in stark contrast to 10 percent for second generation Hispanics. We construct a balanced panel of students whom we follow from third through eighth grades. The observable differences between these students and the ones who leave Florida public schooling are similar for both the first and second generation immigrants, with ‘stable’ students outperforming ‘movers’ on the 3rd grade standardized tests, being less likely to be FRPL eligible and identified as limited English proficient for both immigrant generations. Nevertheless, we recognize that there is the chance that cross-generational differences observed in this panel (e.g., with regard to speed of growth over time) may be due to differential selection across generations along unobservable attributes. This leaves us with 28,830 unique first generation Hispanics, 52,952 second generation Hispanics, 23,484 third

generation Hispanics; 2,975 first generation Asians, 5,713 second generation Asians, 628 third generation Asians, and 191,565 third generation white students.

Figure 1 presents the average test scores of these students by grade. First generation Hispanic and Asians students seem to improve dramatically over time, starting well below their second (and third generation peers for Hispanics) in the third grade, surpassing them within a year or two, and performing significantly better in middle school (roughly 0.1σ in reading and math). Further, first generation Hispanic immigrants close the gaps with their white peers considerably, from 0.55σ to 0.1σ in reading, and from 0.4σ to 0.15σ in math. On the other hand, the test scores of second and third generation Hispanics remain almost unchanged in both reading and math. This is in contrast to Asian second generation immigrants, who continue to improve significantly over time in their reading and math scores.

Figure 2 breaks down these trends in first generation immigrants by grade of entry into the Florida public school system.¹¹ There are several findings worth highlighting. First, first generation immigrants who enter a Florida public school at kindergarten outperform their second generation peers in the third grade reading and math tests. Second, the later the first generation immigrants enter the school system, the more they start out behind their second generation peers. Finally, regardless of the grade of entry, first generation immigrants close these initial achievement gaps considerably over time. The one outlier is the third grade-entering Asian students, whose reading remains far behind earlier-arriving first generation Asian students and second generation Asian students even as late as eighth grade. (Their math performance approaches that of second generation Asians by eighth grade but remains well behind that of earlier-entering first generation Asian students.) These findings further support the notion that

¹¹ For this analysis, we only include the cohorts for whom we can identify the exact grade of entry (students born between 1997 and 2002).

the achievement gaps observed in Table 2 are primarily driven by the transitional costs endured by the late-entering first generation immigrants (e.g. English deficiencies) after their initial entry into the school system. Oaxaca-Blinder decomposition, the results of which are available upon request, also indicate that the observed differences in student and school attributes fail to explain achievement gaps between first and second generation beyond these transitional years.

4.4. Second versus Third Generation Immigrants

We next turn to a comparison of second and third generation immigrants. As seen in the descriptive table (Table 2), second generation immigrants appear to outperform third generation immigrants, most notably among Asian students. How much of these differences are due to family and school characteristics?

To investigate this question, Table 7 repeats the analysis in Table 5, this time comparing third generation immigrants to those from the second generation, so a negative coefficient indicates that third generation immigrants have lower values than do second generation immigrants. Three results in the table are most noteworthy: First, while the results for Asian immigrants are broadly consistent as we begin to introduce controls for family background, but for Hispanic immigrants, the gap between third and second generation test scores is more negative after controlling for background characteristics than it is without these controls. Second, as in the case of the comparisons between second and first generation immigrants, we observe that the estimated differences in graduation rates decline substantially – and very dramatically in the case of Asians – when we further control for school by year fixed effects, suggesting that differences across schools attended by third and second generation Asian students explain a fair amount of the generational differences in graduation rates (test score gaps for Asians are also

smaller after controlling for school by year fixed effects.). Third, when we compare between third and second generation immigrants, we can control for maternal attributes (education levels and marital status) and we find that controlling for maternal attributes makes more of a difference for the Asian student test score comparisons than it does for the Hispanic student test score comparisons. Finally, controlling for language spoken at home has little effect on third versus second generation Asian comparisons, but it does influence the comparisons between third and second generation Hispanics: After controlling for language spoken at home, the estimated test score gap between third and second generation Hispanic students opens substantially, with third generation Hispanic students performing worse than second generation students. These differences are not observed for Asian students.

The takeaway message from these comparisons is that after controlling for a set of family and maternal characteristics and looking within schools, third generation Asian and Hispanic immigrants appear to perform worse than do their second generation counterparts. They score worse on tests, are more likely to be disciplined and absent, and are less likely to graduate from high school (though this difference loses statistical significance in the case of Asians once we control for school by year fixed effects). In summary, the weight of the evidence indicates that early-arriving first generation immigrants and second generation immigrants perform the best, and that later-arriving first generation immigrants and third generation immigrants are less successful in school.

4.5. Third Generation Immigrants versus Whites

Finally, we examine the differences between third generation immigrants and white students, and explore the mechanisms behind these differences. This is an important exercise to

better understand the “chronic” racial differences in student outcomes as these gaps are expected to be more stagnant than the gaps between recent immigrants and whites, which might change as immigrants become more acquainted to the public life in the U.S. Table 8 presents comparisons that run parallel to the previous tables. There are several findings that are worth highlighting. First, on average, Hispanics and Asians seem to be on the opposite sides of whites along both cognitive and non-cognitive outcomes, with third generation Hispanics performing worse in both reading and math, less likely to graduate from high school, more likely to be involved in disciplinary incidents, and have higher absence rates than third generation whites, with the reverse patterns being true for third generation Asians versus third generation whites. Second, controlling for poverty status halves the Hispanic-white test score gap and causes signs to flip regarding the behavioral and graduation variables, while it does little to the general pattern of results for the third generation Asian-white comparison. Third, while controlling for school by year fixed effects does not affect Hispanic-white test score comparisons, it does somewhat affect Asian-white test score comparisons. On the other hand, looking within a given school restores the finding that third generation Hispanics have more disciplinary incidents, all else equal, than do third generation whites. Finally, while controlling for language spoken at home does not have a large effect on the third generation Asian-white gap, doing so substantially reduces the third generation Hispanic-white test score gap.

In summary, when controlling for observables and looking within schools, we observe that third generation Hispanics perform worse on tests and have greater rates of disciplinary infractions, but graduate from high school at higher levels and are absent less than are third generation whites. All else equal, third generation Asians have higher test scores, fewer disciplinary incidents and less absenteeism than do third generation whites. The test score gaps

are somewhat lower in the case of Asians and dramatically lower in the case of Hispanics when controlling for observables than when not controlling for observables.

So far, beyond a transition period for first generation immigrants after their initial entry into the school system, our findings have shown a steady decline in student performance across generations even after controlling for observed student and school traits, with early-arriving first generation immigrants outperforming those born in the United States, and those born in the United States to foreign-born mothers outperforming those born in the United States to American-born mothers. Table 9 summarizes these findings and compares the middle and high school outcomes across immigrant generations, highlighting this general pattern.¹²

4.6. *Changing Ethnic Identities across Immigrant Generations*

One possible explanation behind these findings is that unobserved attributes such as educational motivation and parental involvement fade over time across generations. Another possibility that does not involve such a change in immigrant families' educational preferences across generations is differential departures from ancestral ethnic identities within families across generations. For instance, achievement gaps among Asian immigrants across generations might arise if educationally motivated Asian immigrants are more likely to be involved in interracial marriages, and their children are thus less likely to identify themselves as Asian.

To examine this hypothesis, we investigate how the differences in student outcomes change when we identify racial groups using *mother's* race/ethnicity, as reported on the birth

¹² In this table, we report the differences in middle and high school outcomes (middle school test scores; middle and high school disciplinary incidents attendance; and high school graduation) between late-entering first generation, early-entering first generation, and second generation Hispanic and Asian immigrants, with third generation as the baseline group. In the first four columns, we use the students born after 1993 for whom we can identify the grade of entry into the FL public school system. For high school graduation, the sample includes only the 1994 cohort for whom we observe both grade of entry and high school graduation. Each regression includes FRPL eligibility, special education indicators, English non-native indicator, grade fixed-effects, and school-by-year fixed-effects.

certificate.¹³ In particular, we compare second versus third generation outcomes when race/ethnicity is defined based on (1) student's declared race/ethnicity; (2) mother's declared race/ethnicity; and (3) both. If differential attrition indeed exists, we would expect to see significant differences in results between the three scenarios. With regard to Hispanic immigrants, changes between maternal ethnic identity and children's ethnic identity are the same across generations: Among children of mothers who self-identify as Hispanic, 74 percent of second generation immigrants identify as Hispanic and 74 percent of third generation immigrants identify as Hispanic. But there are large cross-generational differences with regard to Asians: Among children of mothers who self-identify as Asian, 71 percent of second generation immigrants identify as Asian but only 33 percent of third generation immigrants identify as Asian. This suggests that Asian immigrants have integrated across generations in a different manner than have Hispanic immigrants.

Appendix Table B1 compares the gaps in student outcomes between second and third generation immigrants under the three definitions of racial identity. Hispanic gaps remain almost unchanged, with slightly larger differences in achievement between third and second generation (third generation performing worse) when we restrict the sample to Hispanic students with Hispanic mothers. Appendix Table B2 reaches a similar conclusion, comparing gaps in student attributes across definitions.

For Asians, on the other hand, cross-generational differences in ethnic identity seem to be an important factor driving cross-generational gaps. When we incorporate maternal race in the definition of racial identity, achievement gaps between second and third generation Asians decline considerably. For instance, when we use maternal race instead of identified student race,

¹³ Because we observe maternal race/ethnicity on the birth certificate only, we are unable to carry out any comparisons between first and second generation immigrants.

the reading gap drops from 0.18σ to 0.04σ (0.35σ to 0.17σ in math). This gap further declines to 0.004σ when we restrict the sample to Asian students with Asian mothers (0.09σ in math). Differences in disciplinary problems and truancy also decline significantly, from 2 to 3 percentage points to less than one. The findings in the bottom panel of Appendix Table B3 provide further support for this differential integration hypothesis among Asians, indicating that third generation students with Asian mothers who identify themselves as non-Asian are more affluent and have better educated mothers. However, the direction of this pattern changes when we look at second generation Asians. In particular, second generation immigrants who abandon the Asian identity tend to be lower achieving students with less educated mothers. A further exploration of these patterns is a topic for future research.

5. Conclusion

This paper presents the first comprehensive look at the relative performance of early-arriving first generation immigrants, late-arriving first generation immigrants, second generation immigrants, and third generation immigrants using population-level data in the United States. A clear pattern of results emerges, at least for the Florida public school students identified as Asian or Hispanic whom we study: We observe that while first generation immigrants who arrive in Florida in fourth grade or later consistently perform at a level that is lower than other students, those first generation students who arrive in Florida in third grade or earlier generally perform better than any other generation of students who share their same ethnicity. Second generation Asian and Hispanic students in turn tend to perform better than do third generation students of the same ethnicity. That said, suggestive evidence indicates that in the case of Asian students, the

differences between second and third generation students may be due to differences in who self-identifies with an Asian ethnicity.

These results have potential implications for immigration policy and how one perceives the role immigrants play in American schools and beyond. They suggest that while it appears that newly-arrived immigrant children perform very poorly and require considerable resources, not only do these children catch up very quickly to their native-born co-ethnic peers, but for those who arrived before the age of nine or so, they tend to exceed the performance of their native-born co-ethnic peers. And the U.S.-born children of foreign-born individuals, regardless of when they arrived in the United States, tend to outperform others from the same ethnicity whose families have lived longer in the country. Moreover, after controlling for observable factors, third generation Asian and Hispanic students tend to perform at levels that are in the same ballpark as third generation white students – suggesting that long-run outcomes for the descendants of immigrants appear to be quite similar across the board.

We find some suggestive evidence that indicates that, among students of Asian descent, there are differences in outcomes depending on whether children of Asian mothers self-identify as Asian. And we find that a sizeable fraction of the difference in test scores between third generation Hispanic students and third generation white students can be explained by the language spoken at home. While a study of culture and ethnic integration is beyond the scope of the present paper, this is a topic that we will investigate in detail in forthcoming work.

References

- Abdulkadiroglu, A., Angrist, J.D., Dynarski, S.M., Kane, T.J., & Pathak, P.A. (2011). Accountability and flexibility in public schools: Evidence from Boston's charters and pilots. *Quarterly Journal of Economics*, 126(2), pp. 699–748.
- Anderson, T. W., & Hsiao, C. (1981). Estimation of Dynamic Models with Error Components. *Journal of the American Statistical Association* , 76, 598-606.
- Anderson, T. W., & Hsiao, C. (1982). Formulation and Estimation of Dynamic Models Using Panel Data. *Journal of Econometrics* , 18, 47-82.
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies* , 58, 277-297.
- Arellano, M., & Bover, O. (1995). Another Look at the Instrumental Variable Estimation of Error-Components Model. *Journal of Econometrics* , 68, 29-51.
- Baker, Eva L., Paul E. Barton, Linda Darling-Hammond, Edward Haertel, Helen F. Ladd, Robert L. Linn, Diane Ravitch, Richard Rothstein, Richard J. Shavelson, and Lorrie A. Shepard, (2010). Problems with the Use of Student Test Scores to Evaluate Teachers. Economic Policy Institute Briefing Paper #278. Retrieved from the Economic Policy Institute Web site.
- Blundell, R., Bond, S., & Windmeijer, F. (2000). Estimation in Dynamic Panel Data Models: Improving on the Performance of the Standard GMM Estimator. In B. H. Baltagi, *Nonstationary Panels, Cointegrating Panels and Dynamic Panels* (pp. 53-92). New York: Elsevier.
- Burke, Mary A. and Tim Sass, (2008). Classroom Peer Effects and Student Achievement. Working Paper 18, National Center for Analysis of Longitudinal Data in Education Research.
- Camarota, Steven A. (2012). Immigrants in the United States: A Profile of America's Foreign-Born Population. Center for Immigration Studies.
- Carter, Thomas P. and Roberto D. Segura (1979). Mexican Americans in School: A Decade of Change. New York: College Entrance Examination Board.
- Chetty, R., Friedman, J.N., & Rockoff, J.E. (2011). The long-term impacts of teachers: Teacher value-added and student outcomes in adulthood. Working Paper No. 17699, National Bureau of Economic Research, Cambridge, MA.
- Chiswick, Barry R., DebBurman, Noyna (2004). Educational attainment: analysis by immigrant generation. *Economics of Education Review* 23, 361–379.

- LiCalsi-Labelle, Christina and David Figlio (2013). “Unequal implementation and effects of a universal education policy. Northwestern University Working Paper.
- Conger, Dylan (2012). Immigrant Peers and Academic Performance in High School. George Washington University Working Paper.
- Conger, Dylan, Amy E. Schwartz and Leanna Stiefel (2007). Immigrant and Native-born Differences in School Stability and Special Education: Evidence from New York City. *International Migration Review* 41(2), 402-431.
- Cortes, Kalena E. (2006). The effects of age of arrival and enclave schools on the academic performance of immigrant children. *Economics of Education Review* 25, 121–132.
- Dee, Thomas (2005). A teacher like me: Does race, ethnicity or gender matter?. *American Economic Review*, 95(2), pp. 158-165. 2005.
- Dobbie, W., & Fryer, R.G. (2011). Are high quality schools enough to close the achievement gap among the poor? Evidence from the Harlem children’s zone. *American Economic Journal: Applied Economics*, 3, pp. 158–187.
- Dustmann, Christian, Tomasso Frattini and Gianandrea Lanzara (2011). Educational Achievement of Second Generation Immigrants: An International Comparison. NORFACE MIGRATION Discussion Paper No. 25.
- Figlio, David, Jonathan Guryan, Krzysztof Karbownik, and Jeffrey Roth (forthcoming). The Effect of Poor Neonatal Health on Children’s Cognitive Development. *American Economic Review*.
- Figlio, David and Cassandra Hart (2014). Competitive Effects of Means-Tested School Vouchers. *American Economic Journal: Applied Economics*.
- Figlio, David and Lawrence Kenny (2007). Individual Teacher Incentives and Student Performance. *Journal of Public Economics* 91(5-6), 901–914.
- Glazerman, Steven, Dan Goldhaber, Susanna Loeb, Stephen Raudenbush, Douglas O. Staiger, and Grover J. Whitehurst (2010). Evaluating Teachers: The Important Role of Value-Added. Washington, DC: Brown Center on Education Policy at Brookings.
- Glick, Jennifer E., White, Michael J., (2003). The academic trajectories of immigrant youths: analysis within and across cohorts. *Demography* 40 (4), 759–783.
- Gonzalez, Arturo., (2003). The education and wages of immigrant children: the impact of age at arrival. *Economics of Education Review* 22, 203–212.

- Gould, Eric D., Victor Lavy and M. Daniele Paserman (2011). Sixty Years after the Magic Carpet Ride: The Long-Run Effect of the Early Childhood Environment on Social and Economic Outcomes. *Review of Economic Studies*, 78(3), 938-973.
- Hanushek, Eric A., John F. Kain and Steven G. Rivkin (2009). New Evidence about Brown v. Board of Education: The Complex Effects of School Racial Composition on Achievement. *Journal of Labor Economics*, 27(3), 349-383.
- Harris, Douglas N. and Tim R. Sass, "Value-Added Models and the Measurement of Teacher Quality," April 2006. Unpublished manuscript.
- Hoxby, C. M., & Murarka, S. (2009). Charter schools in New York City: Who enrolls and how they affect their students' achievement. Working Paper No. 14852, National Bureau of Economic Research, Cambridge, MA.
- Kao, Grace (1999). Psychological well-being and educational achievement among immigrant youth. In *Children of immigrants: Health, adjustment, and public assistance*, edited by D. J. Hernandez. Washington, DC: National Academy Press, 410–77.
- Kao, G., Tienda, M. (1995). Optimism and achievement: the educational performance of immigrant youth. *Social Science Quarterly* 76, 1–19.
- Kane, T. J., & Staiger, D. O. (2008). Estimating teacher impacts on student achievement: An experimental evaluation. Working Paper No. 14607, National Bureau of Economic Research, Cambridge, MA.
- Kane, Thomas J., and Douglas O. Staiger, 2002. The Promise and the Pitfalls of Using Imprecise School Accountability Measures. *Journal of Economic Perspectives*, 16(4), 91-114.
- Koedel, Cory and Julian R. Betts (2011). Does Student Sorting Invalidate Value-Added Models of Teacher Effectiveness? An Extended Analysis of the Rothstein Critique. *Education Finance and Policy*, 6(1), 18-42.
- Lüdemann, Elke and Guido Schwerdt, 2010. Migration Background and Educational Tracking: Is there a Double Disadvantage for Second-Generation Immigrants?. CESifo Working Paper Series 3256, CESifo Group Munich.
- McCaffrey, Daniel F., J. R. Lockwood, Daniel Koretz, Thomas A. Louis, and Laura S. Hamilton, (2004). Models for Value-Added Modeling of Teacher Effects. *Journal of Educational and Behavioral Statistics* 29(1), 67-101.
- Ogbu, John U. (1978). *Minority Education and Caste: The American System in Cross-Cultural Perspective*. New York: Academic Press.
- Ogbu, John U. (1987). Variability in Minority School performance: A Problem in Search of an Explanation. *Anthropology and Education Quarterly*. 18 (4); 313-

- Ogbu, John U. and Maria E. Matute-Bianchi (1986). Understanding Sociocultural Factors: Knowledge, Identity, and School Adjustment. In *Beyond Language: Social and Cultural Factors in Schooling Language Minority Students*. Los Angeles: Office of Bilingual Bicultural Education, pp. 73-142.
- Ozek, Umut (2013). "Hold Back to Move Forward? Early Grade Retention and Student Misbehavior". CALDER Working Paper No: 100.
- Ozek, Umut (2012). "One Day Too Late? Mobile Students in an Era of Accountability". CALDER Working Paper No: 82.
- Passel, Jeffrey S. (2011). "Demography of Immigrant Youth: Past, Present, and Future". *The Future of Children*, 21(1), 19-41.
- Perlmann, Joel (1988). *Ethnic Differences*. Cambridge: Cambridge University Press.
- Portes, Alejandro, and MacLeod Dag (1996). Educational progress of children of immigrants: The roles of class, ethnicity, and school context. *Sociology of Education* 69, 255–75.
- Rothstein, Jesse, 2010. Teacher Quality in Educational Production: Tracking, Decay, and Student Achievement. *Quarterly Journal of Economics*, 125(1), 175-214.
- Rothstein, Jesse. 2009. Student Sorting and Bias in Value Added Estimation: Selection on Observables and Unobservables. *Education Finance and Policy*, 4(4): 537–71.
- Rouse, Cecilia Elena, Jane Hannaway, Dan Goldhaber, and David Figlio, 2013. Feeling the Florida Heat? How Low-Performing Schools Respond to Voucher and Accountability Pressure. *American Economic Journal: Economic Policy*, 5(2): 251-81.
- Ruiz-de-Velasco, Fix, Michael E., Clewell, Beatriz (2002). *Overlooked and Underserved: Immigrant Students in U.S. Secondary Schools*. The Urban Institute, Washington, DC.
- Sass, Tim, Jane Hannaway, Zeyu Xu, David N. Figlio, and Li Feng, 2011. Value-Added of Teachers in High Poverty Schools and Low Poverty Schools. Working Paper 52, National Center for Analysis of Longitudinal Data in Education Research.
- Schwartz, Amy Ellen and Leanna Stiefel (2004). Immigrants and the distribution of resources within an urban school district. *Educational Evaluation and Policy Analysis* 26 (4), 303–327.
- Schwartz, Amy Ellen and Leanna Stiefel(2006). Is there a nativity gap? New evidence on the academic performance of immigrant students. *Education Finance and Policy* 1 (1), 17–49.

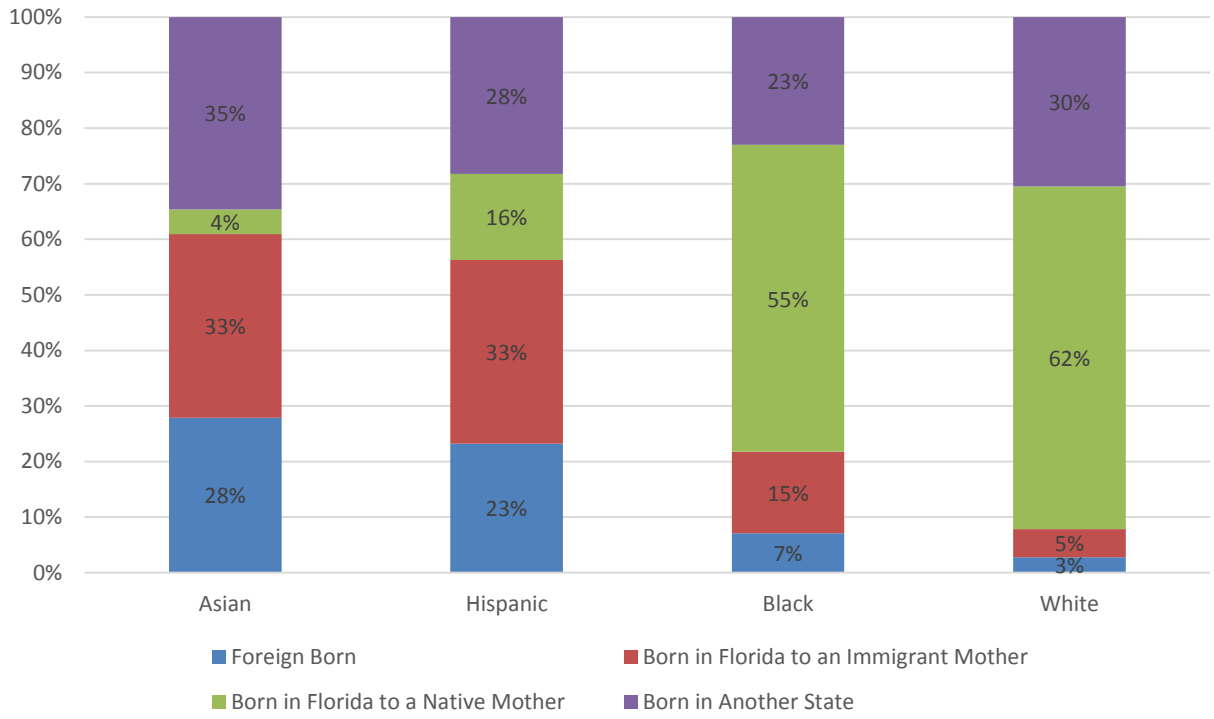
Schwartz, Amy Ellen and Leanna Stiefel (2009). Immigrants and Inequality in Public Schools.
Prepared for the project on Social Inequality and Educational Disadvantage.

Stiefel, Leanna, Amy E. Schwartz and Dylan Conger (2010). Age of Entry and the High School Performance of Immigrant Youth. *Journal of Urban Economics* 67 (3), 303-14.

Trueba, Henry (1987). *Success or Failure? Learning and the Language Minority Student*.
Cambridge, MA: Newbury House.

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Figure 1
Student Distribution in Four Major Race/Ethnicity Categories by Immigrant Generation



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Table 1
Differences in Student Outcomes across Races/Ethnicities in Florida

	Asian	Black	Hispanic	White
Reading Score	0.440 (0.984) [231,049]	-0.396 (0.932) [2,189,977]	-0.159 (0.998) [2,426,364]	0.282 (0.931) [4,514,931]
Math Score	0.638 (0.970) [231,267]	-0.431 (0.969) [2,189,944]	-0.101 (0.983) [2,427,351]	0.263 (0.916) [4,514,743]
Disciplinary Incident	0.0430 (0.203) [445,528]	0.219 (0.414) [4,256,984]	0.106 (0.308) [4,681,476]	0.0979 (0.297) [8,573,740]
% Days Absent	0.0358 (0.0573) [443,625]	0.0566 (0.0798) [4,240,778]	0.0564 (0.0696) [4,667,545]	0.0572 (0.0716) [8,531,150]
Graduated from HS	0.792 (0.406) [12,471]	0.585 (0.493) [104,911]	0.622 (0.485) [118,074]	0.687 (0.464) [244,888]

Table 2
 Cross-generational Differences in Student Outcomes - Hispanic and Asian Students

	Hispanic Students			
	1st Hispanic	2nd Hispanic	3rd Hispanic	3rd White
Reading Score	-0.300 (1.135)	-0.0692 (0.924)	-0.0411 (0.938)	0.271 (0.925)
Math Score	-0.162 (1.078)	-0.00800 (0.925)	-0.0339 (0.933)	0.253 (0.908)
Disciplinary Incident	0.107 (0.309)	0.0826 (0.275)	0.104 (0.305)	0.0965 (0.295)
% Days Absent	0.0527 (0.0677)	0.0506 (0.0618)	0.0616 (0.0707)	0.0572 (0.0690)
Graduated from HS	0.593 (0.491)	0.713 (0.452)	0.664 (0.472)	0.715 (0.451)
	Asian Students			
	1st Asian	2nd Asian	3rd Asian	3rd White
Reading Score	0.316 (1.100)	0.525 (0.920)	0.343 (0.908)	0.271 (0.925)
Math Score	0.585 (1.032)	0.718 (0.934)	0.369 (0.932)	0.253 (0.908)
Disciplinary Incident	0.0421 (0.201)	0.0360 (0.186)	0.0683 (0.252)	0.0965 (0.295)
% Days Absent	0.0343 (0.0579)	0.0330 (0.0511)	0.0512 (0.0657)	0.0572 (0.0690)
Graduated from HS	0.744 (0.437)	0.885 (0.319)	0.741 (0.438)	0.715 (0.451)

Table 3
 Cross-generational Differences in Student Characteristics – Hispanic and Asian Students

	Hispanic Students			
	1st Hispanic	2nd Hispanic	3rd Hispanic	3rd White
FRPL Eligible	0.745 (0.436)	0.722 (0.448)	0.613 (0.487)	0.335 (0.472)
LEP	0.447 (0.497)	0.226 (0.418)	0.092 (0.289)	0.001 (0.031)
LEP Ever	0.821 (0.384)	0.596 (0.491)	0.259 (0.438)	0.004 (0.059)
English Non-Native	0.948 (0.222)	0.840 (0.367)	0.464 (0.499)	0.011 (0.105)
SPED	0.0813 (0.273)	0.129 (0.335)	0.143 (0.350)	0.148 (0.355)
Disability-Language	0.0140 (0.117)	0.0313 (0.174)	0.038 (0.190)	0.048 (0.214)
Disability-Learning	0.0490 (0.216)	0.0680 (0.252)	0.070 (0.255)	0.064 (0.244)
Disability-Mental	0.0032 (0.056)	0.004 (0.061)	0.004 (0.061)	0.004 (0.065)
Disability-Physical	0.003 (0.054)	0.003 (0.054)	0.003 (0.057)	0.004 (0.060)
Disability-Emotional	0.002 (0.049)	0.005 (0.073)	0.008 (0.090)	0.009 (0.095)
Disability-Other	0.010 (0.099)	0.018 (0.132)	0.020 (0.140)	0.019 (0.138)
Country of Origin-Mexico	0.174 (0.379)	0.218 (0.413)		
Country of Origin-Pto. Rico	0.093 (0.290)	0.111 (0.314)		
Country of Origin-Cuba	0.242 (0.429)	0.231 (0.422)		
Country of Origin-Other Latin America	0.465 (0.499)	0.438 (0.496)		
Maternal age		27.381 (6.016)	24.762 (5.807)	27.537 (6.001)
Mother college graduate		0.124 (0.330)	0.119 (0.324)	0.205 (0.404)
Mother some college		0.173 (0.378)	0.228 (0.420)	0.258 (0.438)
Mother high school graduate		0.353 (0.478)	0.345 (0.475)	0.374 (0.484)
Mother married		0.649 (0.477)	0.582 (0.493)	0.757 (0.429)

(Table 3 continued)

	Asian Students			
	1st Asian	2nd Asian	3rd Asian	3rd White
FRPL Eligible	0.373 (0.484)	0.337 (0.473)	0.380 (0.485)	0.335 (0.472)
LEP	0.280 (0.449)	0.103 (0.304)	0.0199 (0.140)	0.001 (0.031)
LEP Ever	0.509 (0.500)	0.303 (0.460)	0.0587 (0.235)	0.004 (0.059)
English Non-Native	0.683 (0.465)	0.577 (0.494)	0.134 (0.341)	0.011 (0.105)
SPED	0.046 (0.209)	0.073 (0.260)	0.106 (0.308)	0.148 (0.355)
Disability-Language	0.020 (0.139)	0.0349 (0.184)	0.0439 (0.205)	0.048 (0.214)
Disability-Learning	0.012 (0.107)	0.019 (0.135)	0.0394 (0.195)	0.064 (0.244)
Disability-Mental	0.002 (0.048)	0.003 (0.054)	0.00276 (0.0525)	0.004 (0.065)
Disability-Physical	0.004 (0.063)	0.003 (0.053)	0.003 (0.051)	0.004 (0.060)
Disability-Emotional	0.001 (0.023)	0.001 (0.030)	0.004 (0.062)	0.009 (0.095)
Disability-Other	0.008 (0.087)	0.013 (0.113)	0.0136 (0.116)	0.019 (0.138)
Maternal age		29.717 (5.362)	26.163 (6.377)	27.537 (6.001)
Mother college graduate		0.357 (0.479)	0.224 (0.417)	0.205 (0.404)
Mother some college		0.196 (0.397)	0.290 (0.454)	0.258 (0.438)
Mother high school graduate		0.311 (0.463)	0.306 (0.461)	0.374 (0.484)
Mother married		0.881 (0.324)	0.678 (0.467)	0.757 (0.429)

Table 4

Cross-generational Differences in School Attributes – Hispanic and Asian Students

	Hispanic Students			
	1st Hispanic	2nd Hispanic	3rd Hispanic	3rd White
Peer Reading Score	-0.0707 (0.333)	-0.0730 (0.333)	-0.021 (0.335)	0.123 (0.308)
Peer Math Score	-0.0268 (0.349)	-0.0333 (0.344)	0.001 (0.349)	0.104 (0.335)
Peer Incident	0.130 (0.126)	0.0977 (0.112)	0.102 (0.116)	0.118 (0.120)
Peer FRPL Eligible	0.620 (0.236)	0.647 (0.231)	0.590 (0.239)	0.452 (0.214)
Peer LEP	0.166 (0.135)	0.180 (0.140)	0.141 (0.127)	0.049 (0.066)
Peer SPED	0.123 (0.057)	0.125 (0.061)	0.133 (0.065)	0.148 (0.067)
Peer Foreign Born	0.199 (0.127)	0.166 (0.110)	0.127 (0.094)	0.060 (0.055)
Peer English Non-Native	0.514 (0.262)	0.525 (0.255)	0.413 (0.247)	0.156 (0.145)
Peer White	0.266 (0.229)	0.241 (0.222)	0.330 (0.243)	0.626 (0.198)
Peer Hispanic	0.522 (0.293)	0.547 (0.289)	0.438 (0.277)	0.156 (0.142)
Peer Black	0.162 (0.173)	0.164 (0.182)	0.173 (0.171)	0.149 (0.131)
Peer Asian	0.0203 (0.0197)	0.0181 (0.0191)	0.0217 (0.0206)	0.0241 (0.0211)
	Asian Students			
	1st Asian	2nd Asian	3rd Asian	3rd White
Peer Reading Score	0.123 (0.337)	0.162 (0.331)	0.128 (0.339)	0.123 (0.308)
Peer Math Score	0.133 (0.360)	0.176 (0.360)	0.118 (0.366)	0.104 (0.335)
Peer Incident	0.134 (0.128)	0.106 (0.118)	0.103 (0.114)	0.118 (0.120)
Peer FRPL Eligible	0.462 (0.225)	0.444 (0.227)	0.464 (0.232)	0.452 (0.214)
Peer LEP	0.0837 (0.0918)	0.0831 (0.0924)	0.0647 (0.0831)	0.0492 (0.0661)
Peer SPED	0.129 (0.0542)	0.128 (0.0576)	0.140 (0.0640)	0.148 (0.0665)
Peer 1st Gen Immigrant	0.112 (0.0817)	0.0984 (0.0745)	0.0733 (0.0638)	0.0597 (0.0548)

(Table 4 continued)

Peer English Non-Native	0.265 (0.191)	0.270 (0.188)	0.204 (0.178)	0.156 (0.145)
Peer White	0.464 (0.227)	0.462 (0.225)	0.520 (0.231)	0.626 (0.198)
Peer Hispanic	0.235 (0.195)	0.241 (0.200)	0.193 (0.182)	0.156 (0.142)
Peer Black	0.213 (0.179)	0.204 (0.172)	0.203 (0.179)	0.149 (0.131)
Peer Asian	0.0424 (0.0323)	0.0460 (0.0333)	0.0352 (0.0287)	0.0241 (0.0211)

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Table 5
Regression Adjusted Differences in Student Outcomes between Second and First Generation Hispanic and Asian Students

	Hispanic Students				
	(1)	(2)	(3)	(4)	(5)
Reading Score	0.235*** (0.005)	0.212*** (0.004)	0.247*** (0.004)	0.250*** (0.003)	0.234*** (0.003)
Math Score	0.156** (0.004)	0.134** (0.003)	0.168*** (0.004)	0.174** (0.003)	0.162** (0.003)
Disciplinary Incidents	0.005*** (0.001)	0.006*** (0.001)	0.003*** (0.001)	0.007*** (0.0004)	0.007*** (0.0004)
% Absent Days	-0.0004** (0.0001)	-0.0001 (0.0001)	-0.001*** (0.0001)	0.0003* (0.0001)	0.0002*** (0.0001)
Graduated from HS	0.119*** (0.006)	0.120*** (0.007)	0.133*** (0.007)	0.079*** (0.004)	0.076** (0.004)
Number of test scores	1,375,863	1,375,863	1,375,863	1,375,863	1,375,863
Number of student obs.	2,633,382	2,633,382	2,633,382	2,633,382	2,633,382
Number of graduation obs.	65,415	65,415	65,415	65,415	65,415
	Asian Students				
Reading Score	0.213*** (0.007)	0.192*** (0.007)	0.207*** (0.007)	0.178*** (0.007)	0.164** (0.007)
Math Score	0.140*** (0.007)	0.120*** (0.006)	0.134*** (0.006)	0.104*** (0.006)	0.106** (0.006)
Disciplinary Incidents	0.003*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
% Absent Days	0.003*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.003*** (0.0002)
Graduated from HS	0.139*** (0.010)	0.137*** (0.010)	0.142*** (0.009)	0.059*** (0.009)	0.056** (0.010)
FRPL Eligibility	No	Yes	Yes	Yes	Yes
SPED status	No	No	Yes	Yes	Yes
School-Year FE	No	No	No	Yes	Yes
Native language	No	No	No	No	Yes
Number of test scores	140,074	140,074	140,074	140,074	140,074
Number of student obs.	271,347	271,347	271,347	271,347	271,347
Number of graduation obs.	7,464	7,464	7,464	7,464	7,464

Coefficient is on second generation students. Standard errors clustered at the school by year level in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models

control for year and grade fixed effects.

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Table 6
Regression Adjusted Differences in Student Outcomes between Early Entering First and Second Generation Hispanic and Asian Students

	Hispanic Students				
	(1)	(2)	(3)	(4)	(5)
Reading Score	0.045*** (0.004)	0.029*** (0.003)	0.052*** (0.003)	0.061*** (0.003)	0.046*** (0.003)
Math Score	0.019*** (0.004)	0.004 (0.003)	0.025*** (0.003)	0.036*** (0.003)	0.026*** (0.003)
Disciplinary Incidents	0.002*** (0.001)	0.003*** (0.001)	0.001* (0.001)	0.003*** (0.0004)	0.003*** (0.0004)
% Absent Days	0.00004 (0.0001)	0.0002 (0.0001)	-0.0003* (0.0001)	0.0007*** (0.0001)	0.0001*** (0.0001)
Graduated from HS	0.032*** (0.006)	0.032*** (0.006)	0.042*** (0.006)	0.023*** (0.004)	0.020*** (0.004)
Number of test scores	1,042,943	1,042,943	1,042,943	1,042,943	1,042,943
Number of student obs.	1,956,746	1,956,746	1,956,746	1,956,746	1,956,746
Number of graduation obs.	52,316	52,316	52,316	52,316	52,316
	Asian Students				
Reading Score	0.033*** (0.007)	0.025*** (0.007)	0.034*** (0.007)	0.024*** (0.007)	0.018*** (0.007)
Math Score	0.033*** (0.007)	0.025*** (0.007)	0.033*** (0.007)	0.017* (0.007)	0.022*** (0.007)
Disciplinary Incidents	0.001 (0.001)	0.001 (0.001)	0.0003 (0.001)	-0.00001 (0.001)	0.0003 (0.001)
% Absent Days	-0.001*** (0.0002)	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.002*** (0.0003)	0.002*** (0.0002)
Graduated from HS	0.045*** (0.009)	0.044*** (0.010)	0.048*** (0.009)	0.018* (0.009)	0.016 (0.009)
FRPL Eligibility	No	Yes	Yes	Yes	Yes
SPED status	No	No	Yes	Yes	Yes
School-Year FE	No	No	No	Yes	Yes

(Table 6 continued)

Native language	No	No	No	No	Yes
Number of test scores	105,295	105,295	105,295	105,295	105,295
Number of student obs.	194,740	194,740	194,740	194,740	194,740
Number of graduation obs.	5,605	5,605	5,605	5,605	5,605

Coefficient is on early entering first generation students. Standard errors clustered at the school by year level in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models control for year and grade fixed effects.

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Table 7

Regression Adjusted Differences in Student Outcomes between Third and Second Generation Hispanic and Asian Students

	Hispanic Students					
	(1)	(2)	(3)	(4)	(5)	(6)
Reading Score	0.028*** (0.003)	-0.028*** (0.002)	-0.010*** (0.002)	-0.007*** (0.002)	0.006*** (0.002)	-0.082*** (0.002)
Math Score	-0.026*** (0.003)	-0.078*** (0.002)	-0.062*** (0.002)	-0.049*** (0.002)	-0.040*** (0.002)	-0.107*** (0.002)
Disciplinary Incidents	0.021*** (0.001)	0.025*** (0.001)	0.024*** (0.001)	0.020*** (0.001)	0.017*** (0.001)	0.017*** (0.001)
% Absent Days	0.011*** (0.0002)	0.012*** (0.0002)	0.012*** (0.0002)	0.010*** (0.0001)	0.010*** (0.0001)	0.009*** (0.0001)
Graduated from HS	-0.050*** (0.005)	-0.067*** (0.005)	-0.063*** (0.005)	-0.050*** (0.006)	-0.043*** (0.006)	-0.049*** (0.006)
Number of test scores	1,195,055	1,195,055	1,195,055	1,195,055	1,195,055	1,195,055
Number of student obs.	2,273,904	2,273,904	2,273,904	2,273,904	2,273,904	2,273,904
Number of graduation obs.	42,867	42,867	42,867	42,867	42,867	42,867
	Asian Students					
Reading Score	-0.183*** (0.010)	-0.162*** (0.010)	-0.138*** (0.010)	-0.088*** (0.012)	-0.029** (0.011)	-0.065*** (0.012)
Math Score	-0.349*** (0.010)	-0.327*** (0.010)	-0.305*** (0.009)	-0.226*** (0.012)	-0.163*** (0.012)	-0.157*** (0.012)
Disciplinary Incidents	0.032*** (0.002)	0.031*** (0.002)	0.030*** (0.002)	0.026*** (0.002)	0.020*** (0.002)	0.018*** (0.002)
% Absent Days	0.018*** (0.001)	0.018*** (0.001)	0.018*** (0.001)	0.016*** (0.001)	0.013*** (0.001)	0.011*** (0.001)
Graduated from HS	-0.144*** (0.023)	-0.146*** (0.023)	-0.141*** (0.022)	-0.067 (0.063)	-0.048 (0.062)	-0.041 (0.063)
FRPL Eligibility	No	Yes	Yes	Yes	Yes	Yes
SPED status	No	No	Yes	Yes	Yes	Yes
School-Year FE	No	No	No	Yes	Yes	Yes

(Table 7 continued)

Maternal attributes	No	No	No	No	Yes	Yes
Native language	No	No	No	No	No	Yes
Number of test scores	89,566	89,566	89,566	89,566	89,566	89,566
Number of student obs.	167,230	167,230	167,230	167,230	167,230	167,230
Number of graduation obs.	3,824	3,824	3,824	3,824	3,824	3,824

Coefficient is on third generation students. Standard errors clustered at the school by year level in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models control for year and grade fixed effects.

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Table 8

Regression Adjusted Differences in Student Outcomes between Third Generation Hispanic, Asian and White Students

	Hispanic Students					
	(1)	(2)	(3)	(4)	(5)	(6)
Reading Score	-0.312*** (0.004)	-0.169*** (0.003)	-0.185*** (0.003)	-0.182*** (0.002)	-0.140*** (0.002)	-0.067*** (0.002)
Math Score	-0.286*** (0.004)	-0.140*** (0.003)	-0.155*** (0.003)	-0.178*** (0.002)	-0.136*** (0.002)	-0.078*** (0.002)
Disciplinary Incidents	0.007*** (0.001)	-0.012*** (0.001)	-0.011*** (0.001)	0.009*** (0.001)	0.0019*** (0.0005)	0.0011* (0.0005)
% Absent Days	0.004*** (0.0002)	-0.003*** (0.0002)	-0.002*** (0.0002)	0.0002 (0.0001)	-0.002*** (0.0001)	-0.001*** (0.0001)
Graduated from HS	-0.051*** (0.005)	0.013*** (0.005)	0.010*** (0.004)	-0.004 (0.005)	0.021*** (0.005)	0.028*** (0.006)
Number of test scores	3,211,593	3,211,593	3,211,593	3,211,593	3,211,593	3,211,593
Number of student obs.	6,010,558	6,010,558	6,010,558	6,010,558	6,010,558	6,010,558
Number of graduation obs.	153,468	153,468	153,468	153,468	153,468	153,468
	Asian Students					
Reading Score	0.071*** (0.009)	0.097*** (0.009)	0.052*** (0.009)	0.019* (0.008)	0.025*** (0.008)	0.043*** (0.008)
Math Score	0.117*** (0.009)	0.143*** (0.009)	0.102*** (0.009)	0.063*** (0.008)	0.068*** (0.008)	0.085*** (0.008)
Disciplinary Incidents	-0.028*** (0.002)	-0.031*** (0.002)	-0.029*** (0.002)	-0.016*** (0.002)	-0.018*** (0.002)	-0.019*** (0.002)
% Absent Days	-0.006*** (0.0004)	-0.007*** (0.0004)	-0.007*** (0.0005)	-0.005*** (0.0005)	-0.005*** (0.0005)	-0.005*** (0.0005)
Graduated from HS	0.026 (0.022)	0.031 (0.022)	0.020 (0.021)	0.002 (0.023)	0.016 (0.022)	0.017 (0.022)
FRPL Eligibility	No	Yes	Yes	Yes	Yes	Yes
SPED status	No	No	Yes	Yes	Yes	Yes
School-Year FE	No	No	No	Yes	Yes	Yes

(Table 8 continued)

Maternal attributes	No	No	No	No	Yes	Yes
Native language	No	No	No	No	No	Yes
Number of test scores	2,842,440	2,842,440	2,842,440	2,842,440	2,842,440	2,842,440
Number of student obs.	5,304,653	5,304,653	5,304,653	5,304,653	5,304,653	5,304,653
Number of graduation obs.	140,674	140,674	140,674	140,674	140,674	140,674

Coefficient is on third generation students. Standard errors clustered at the school by year level in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models control for year and grade fixed effects.

Table 9

Regression Adjusted Differences in Student Outcomes in Middle and High School across Immigrant Generations

		Hispanic Students				
		Reading Score	Math Score	Incidents	% Absent Days	Graduated from HS
Late Entering First Gen.		-0.836*** (0.011)	-0.542*** (0.008)	-0.062*** (0.002)	-0.010*** (0.0004)	-0.144*** (0.005)
Early Entering First Gen.		0.137*** (0.005)	0.133*** (0.004)	-0.046*** (0.002)	-0.0123*** (0.0003)	0.0261*** (0.004)
Second Generation		0.079*** (0.004)	0.095*** (0.003)	-0.037*** (0.001)	-0.011*** (0.0002)	0.033*** (0.003)
	N	557,214	557,102	870,336	868,836	138,502
		Asian Students				
Late Entering First Gen.		-0.490*** (0.026)	-0.123*** (0.023)	-0.075*** (0.006)	-0.015*** (0.001)	-0.047* (0.021)
Early Entering First Gen.		0.230*** (0.021)	0.271*** (0.019)	-0.056*** (0.006)	-0.015*** (0.001)	0.0331 (0.021)
Second Generation		0.185*** (0.020)	0.259*** (0.019)	-0.058*** (0.006)	-0.018*** (0.001)	0.0401* (0.019)
	N	50,249	50,301	82,927	82,643	14,991
FRPL Eligibility	Yes		Yes	Yes	Yes	Yes
SPED status	Yes		Yes	Yes	Yes	Yes
School-Year FE	Yes		Yes	Yes	Yes	Yes
Native language	Yes		Yes	Yes	Yes	Yes

Standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 1 - Cross-generational Differences in Student Achievement by Grade - Early Entering Hispanic and Asian Immigrants

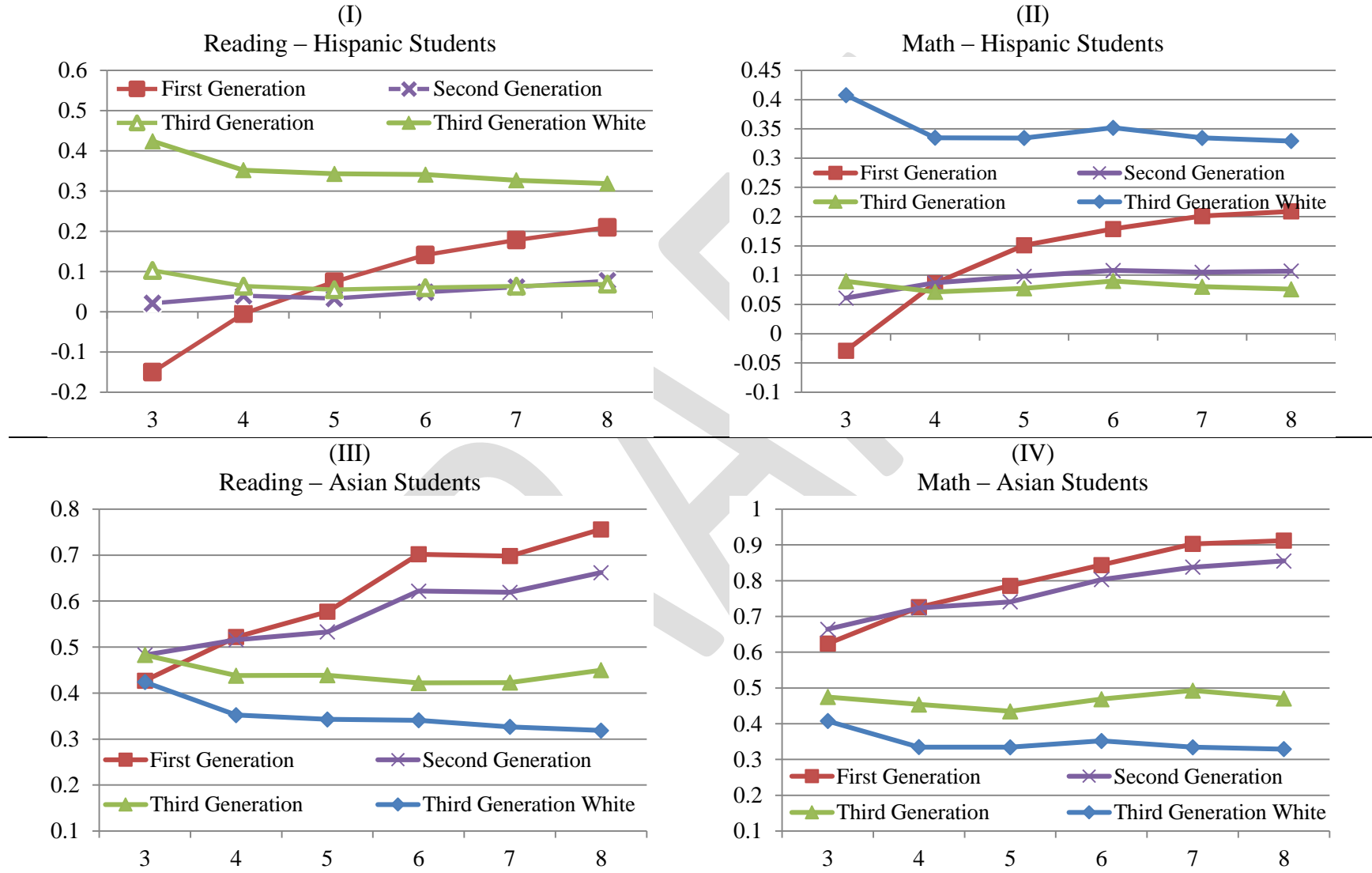
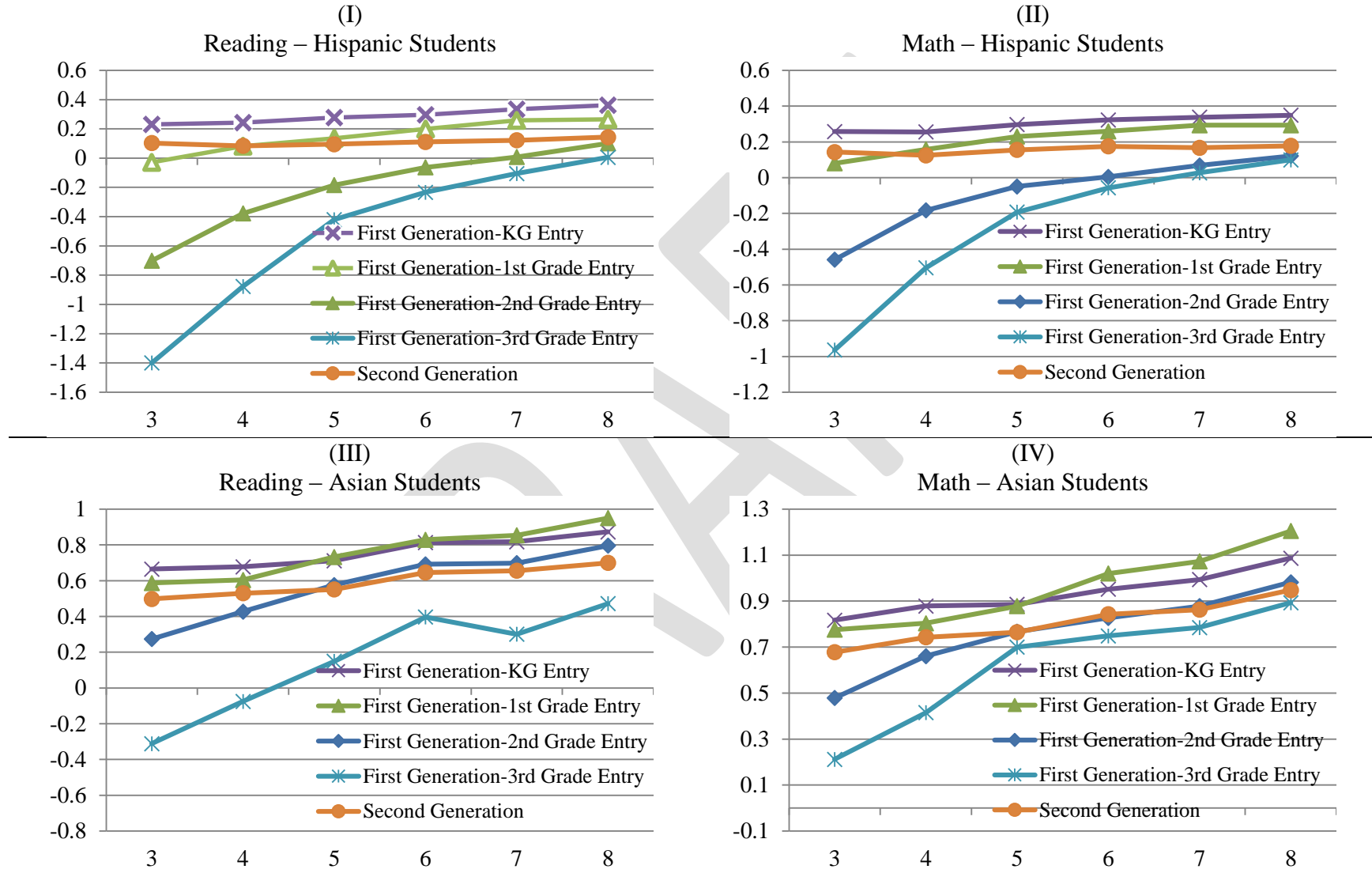


Figure 2 - Cross-generational Differences in Student Achievement by Grade - Hispanic and Asian Immigrants, by Grade of Entry



Appendix A – Differences by Country of Origin

Table A1 – Differences in Student Outcomes – Hispanic Immigrants by Country of Origin

	Puerto Rico		Cuba		Mexico		Other Latin America	
	First Generation	Second Generation	First Generation	Second Generation	First Generation	Second Generation	First Generation	Second Generation
Reading Score	-0.529 (1.110)	-0.147 (0.935)	-0.446 (1.182)	0.070 (0.926)	-0.571 (1.085)	-0.347 (0.882)	-0.099 (1.097)	0.006 (0.910)
Math Score	-0.495 (1.100)	-0.145 (0.948)	-0.308 (1.092)	0.105 (0.920)	-0.384 (1.040)	-0.215 (0.891)	0.046 (1.039)	0.063 (0.917)
Incident	0.140 (0.347)	0.110 (0.313)	0.110 (0.313)	0.080 (0.272)	0.113 (0.317)	0.083 (0.276)	0.097 (0.296)	0.077 (0.266)
% Absent Days	0.071 (0.082)	0.062 (0.068)	0.049 (0.058)	0.052 (0.061)	0.051 (0.075)	0.047 (0.063)	0.051 (0.066)	0.049 (0.059)
Grad. from HS	0.497 (0.500)	0.656 (0.475)	0.624 (0.485)	0.741 (0.438)	0.453 (0.498)	0.629 (0.483)	0.635 (0.481)	0.738 (0.439)

Table A2 – Differences in Student Characteristics – Hispanic Immigrants by Country of Origin

	Puerto Rico		Cuba		Mexico		Other Latin America	
	First Generation	Second Generation	First Generation	Second Generation	First Generation	Second Generation	First Generation	Second Generation
FRPL Eligible	0.770 (0.421)	0.668 (0.471)	0.849 (0.358)	0.631 (0.483)	0.857 (0.350)	0.896 (0.306)	0.654 (0.476)	0.699 (0.459)
LEP	0.451 (0.498)	0.190 (0.393)	0.495 (0.500)	0.168 (0.374)	0.518 (0.500)	0.360 (0.480)	0.406 (0.491)	0.198 (0.399)
LEP Ever	0.723 (0.447)	0.459 (0.498)	0.895 (0.306)	0.563 (0.496)	0.866 (0.340)	0.726 (0.446)	0.801 (0.399)	0.584 (0.493)
English Non-Native	0.876 (0.330)	0.693 (0.461)	0.985 (0.121)	0.830 (0.376)	0.962 (0.190)	0.913 (0.282)	0.950 (0.218)	0.848 (0.359)
SPED	0.168 (0.373)	0.158 (0.365)	0.077 (0.267)	0.129 (0.335)	0.100 (0.300)	0.138 (0.344)	0.0587 (0.235)	0.118 (0.322)
Disability- Language	0.028 (0.166)	0.0400 (0.195)	0.008 (0.089)	0.0193 (0.137)	0.017 (0.131)	0.043 (0.202)	0.0126 (0.112)	0.0298 (0.170)
Disability-Learning	0.092 (0.288)	0.081 (0.273)	0.053 (0.223)	0.071 (0.256)	0.068 (0.251)	0.076 (0.264)	0.0321 (0.176)	0.0597 (0.237)
Disability-Physical	0.007 (0.085)	0.003 (0.057)	0.002 (0.042)	0.003 (0.053)	0.003 (0.053)	0.003 (0.056)	0.00261 (0.0511)	0.00277 (0.0526)
Disability- Emotional	0.008 (0.091)	0.008 (0.087)	0.003 (0.055)	0.009 (0.096)	0.001 (0.032)	0.001 (0.037)	0.00141 (0.0376)	0.00460 (0.0676)
Disability-Mental	0.007 (0.086)	0.005 (0.073)	0.002 (0.045)	0.003 (0.056)	0.005 (0.068)	0.004 (0.065)	0.00239 (0.0489)	0.00329 (0.0572)
Disability-Other	0.025 (0.156)	0.021 (0.143)	0.010 (0.099)	0.024 (0.152)	0.007 (0.081)	0.010 (0.102)	0.00762 (0.0870)	0.0174 (0.131)

Table A3 – Differences in School Attributes – Hispanic First and Second Generation Immigrants by Country of Origin

	Puerto Rico		Cuba		Mexico		Other Latin America	
	First Generation	Second Generation	First Generation	Second Generation	First Generation	Second Generation	First Generation	Second Generation
Peer Reading Score	-0.110 (0.349)	-0.056 (0.328)	-0.160 (0.272)	-0.022 (0.308)	-0.185 (0.307)	-0.215 (0.291)	0.020 (0.340)	-0.038 (0.347)
Peer Math Score	-0.093 (0.364)	-0.053 (0.351)	-0.101 (0.280)	0.028 (0.316)	-0.158 (0.316)	-0.183 (0.293)	0.068 (0.363)	0.009 (0.357)
Peer Incident	0.146 (0.140)	0.110 (0.118)	0.129 (0.122)	0.085 (0.105)	0.146 (0.132)	0.114 (0.117)	0.122 (0.122)	0.093 (0.111)
Peer FRPL Eligible	0.622 (0.223)	0.599 (0.230)	0.732 (0.172)	0.649 (0.222)	0.664 (0.214)	0.712 (0.200)	0.549 (0.248)	0.625 (0.243)
Peer LEP	0.133 (0.117)	0.153 (0.129)	0.214 (0.139)	0.198 (0.138)	0.156 (0.141)	0.179 (0.151)	0.154 (0.128)	0.177 (0.137)
Peer SPED	0.138 (0.079)	0.134 (0.067)	0.119 (0.050)	0.116 (0.063)	0.145 (0.053)	0.146 (0.053)	0.114 (0.052)	0.117 (0.059)
Peer Foreign Born	0.138 (0.096)	0.116 (0.085)	0.267 (0.124)	0.215 (0.113)	0.129 (0.090)	0.107 (0.070)	0.204 (0.127)	0.183 (0.112)
Peer Non-Native	0.360 (0.230)	0.387 (0.225)	0.695 (0.232)	0.652 (0.238)	0.385 (0.212)	0.409 (0.206)	0.504 (0.244)	0.551 (0.252)
Peer White	0.336 (0.227)	0.325 (0.227)	0.131 (0.170)	0.157 (0.186)	0.366 (0.227)	0.340 (0.222)	0.280 (0.223)	0.214 (0.214)
Peer Hispanic	0.386 (0.248)	0.411 (0.248)	0.741 (0.257)	0.712 (0.266)	0.380 (0.223)	0.415 (0.222)	0.494 (0.277)	0.561 (0.293)
Peer Black	0.211 (0.179)	0.194 (0.181)	0.099 (0.136)	0.097 (0.137)	0.202 (0.169)	0.194 (0.166)	0.169 (0.179)	0.176 (0.200)
Peer Asian	0.024 (0.022)	0.027 (0.024)	0.012 (0.014)	0.014 (0.016)	0.016 (0.017)	0.014 (0.015)	0.025 (0.021)	0.020 (0.020)
Peer Origin-Mexico	0.032 (0.052)	0.028 (0.047)	0.023 (0.042)	0.020 (0.038)	0.121 (0.119)	0.155 (0.131)	0.026 (0.045)	0.028 (0.053)
Peer Origin-PR	0.042 (0.031)	0.038 (0.032)	0.025 (0.019)	0.025 (0.016)	0.017 (0.020)	0.016 (0.018)	0.024 (0.020)	0.024 (0.019)
Peer Origin-Cuba	0.061 (0.109)	0.055 (0.107)	0.308 (0.205)	0.272 (0.193)	0.027 (0.065)	0.025 (0.060)	0.095 (0.136)	0.141 (0.163)

Table A4 – Regression Adjusted Differences in Student Outcomes between Second and First Generation Mexican and Other Latin American Immigrants

	Mexican Immigrants				
	(1)	(2)	(3)	(4)	(5)
Reading Score	0.220*** (0.005)	0.224*** (0.005)	0.246*** (0.005)	0.250*** (0.005)	0.240*** (0.005)
Math Score	0.166*** (0.005)	0.169*** (0.005)	0.188*** (0.005)	0.190*** (0.005)	0.183*** (0.005)
Disciplinary Incidents	0.003* (0.001)	0.002 (0.001)	0.0002 (0.001)	0.001 (0.0007)	0.002** (0.001)
% Absent Days	-0.001** (0.0003)	-0.001** (0.0003)	-0.001*** (0.0003)	-0.001*** (0.0002)	-0.001** (0.0002)
Graduated from HS	0.173*** (0.012)	0.169*** (0.012)	0.177*** (0.012)	0.121*** (0.012)	0.120*** (0.012)
Number of test scores	266,497	266,497	266,497	266,497	266,497
Number of student obs.	526,900	526,900	526,900	526,900	526,900
Number of graduation obs.	9,927	9,927	9,927	9,927	9,927
	Other Latin American Immigrants				
Reading Score	0.106*** (0.005)	0.120*** (0.004)	0.164*** (0.004)	0.188*** (0.004)	0.171*** (0.004)
Math Score	0.017** (0.005)	0.029*** (0.004)	0.071*** (0.004)	0.100*** (0.003)	0.089*** (0.004)
Disciplinary Incidents	0.007*** (0.001)	0.006*** (0.001)	0.003** (0.001)	0.007*** (0.001)	0.007*** (0.001)
% Absent Days	-0.001*** (0.0002)	-0.001*** (0.0002)	-0.002*** (0.0002)	-0.001*** (0.0002)	-0.001 (0.0001)
Graduated from HS	0.102*** (0.010)	0.099*** (0.009)	0.112*** (0.009)	0.063*** (0.006)	0.060*** (0.006)
FRPL Eligibility	No	Yes	Yes	Yes	Yes
SPED status	No	No	Yes	Yes	Yes
School-Year FE	No	No	No	Yes	Yes
Native language	No	No	No	No	Yes

(Table A6 continued)

Number of test scores	621,213	621,213	621,213	621,213	621,213
Number of student obs.	1,182,632	1,182,632	1,182,632	1,182,632	1,182,632
Number of graduation obs.	31,283	31,283	31,283	31,283	31,283

Standard errors clustered at the school by year level in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models control for grade and year fixed effects.

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Appendix B – Alternative Definitions of Asian and Hispanic Immigrants

Table B1 - Cross-generational Differences in Student Outcomes – 2nd and 3rd Generation Immigrants, Alternative Definitions

	Student Hispanic		Mother Hispanic		Both Hispanic	
	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen
Reading Score	-0.0692 (0.924)	-0.0411 (0.938)	-0.0766 (0.923)	-0.0436 (0.933)	-0.0732 (0.923)	-0.0906 (0.932)
Math Score	-0.00800 (0.925)	-0.0339 (0.933)	-0.0299 (0.932)	-0.0452 (0.930)	-0.0120 (0.924)	-0.0810 (0.930)
Disciplinary Incident	0.0826 (0.275)	0.104 (0.305)	0.0949 (0.293)	0.104 (0.306)	0.0823 (0.275)	0.103 (0.304)
% Days Absent	0.0506 (0.0618)	0.0616 (0.0707)	0.0479 (0.0616)	0.0606 (0.0701)	0.0507 (0.0617)	0.0617 (0.0705)
	Student Asian		Mother Asian		Both Asian	
	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen
Reading Score	0.525 (0.920)	0.343 (0.908)	0.486 (0.911)	0.444 (0.896)	0.501 (0.913)	0.497 (0.875)
Math Score	0.718 (0.934)	0.369 (0.932)	0.653 (0.924)	0.481 (0.923)	0.709 (0.924)	0.611 (0.906)
Disciplinary Incident	0.0360 (0.186)	0.0683 (0.252)	0.0407 (0.197)	0.0547 (0.227)	0.0342 (0.182)	0.0354 (0.185)
% Days Absent	0.0330 (0.0511)	0.0512 (0.0657)	0.0358 (0.0538)	0.0462 (0.0567)	0.0340 (0.0536)	0.0408 (0.0512)

Table B2 - Cross-generational Differences in Student Attributes – 2nd and 3rd Generation Immigrants, Alternative Definitions

	Student Hispanic		Mother Hispanic		Both Hispanic	
	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen
FRPL Eligible	0.722 (0.448)	0.613 (0.487)	0.720 (0.449)	0.609 (0.488)	0.727 (0.446)	0.645 (0.479)
LEP	0.226 (0.418)	0.092 (0.289)	0.208 (0.406)	0.0900 (0.286)	0.228 (0.419)	0.112 (0.315)
LEP Ever	0.596 (0.491)	0.259 (0.438)	0.548 (0.498)	0.246 (0.431)	0.602 (0.490)	0.304 (0.460)
English Non-Native	0.840 (0.367)	0.464 (0.499)	0.793 (0.405)	0.432 (0.495)	0.847 (0.360)	0.520 (0.500)
SPED	0.129 (0.335)	0.143 (0.350)	0.126 (0.332)	0.142 (0.349)	0.129 (0.335)	0.143 (0.350)
Maternal age	27.381 (6.016)	24.762 (5.807)	27.849 (6.122)	24.711 (5.788)	27.374 (6.011)	24.511 (5.696)
Mother college graduate	0.124 (0.330)	0.119 (0.234)	0.123 (0.328)	0.120 (0.325)	0.122 (0.328)	0.110 (0.313)
Mother some college	0.173 (0.378)	0.228 (0.420)	0.177 (0.381)	0.238 (0.426)	0.172 (0.377)	0.226 (0.418)
Mother high school grad	0.353 (0.478)	0.345 (0.475)	0.352 (0.478)	0.336 (0.472)	0.354 (0.478)	0.333 (0.471)
Mother married	0.649 (0.477)	0.582 (0.493)	0.644 (0.479)	0.574 (0.494)	0.650 (0.477)	0.574 (0.495)
	Student Asian		Mother Asian		Both Asian	
	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen	2 nd Gen	3 rd Gen
FRPL Eligible	0.337 (0.473)	0.380 (0.485)	0.342 (0.474)	0.357 (0.479)	0.346 (0.476)	0.308 (0.462)
LEP	0.103 (0.304)	0.0199 (0.140)	0.0956 (0.294)	0.0238 (0.153)	0.119 (0.324)	0.0442 (0.206)
LEP Ever	0.303 (0.460)	0.0587 (0.235)	0.269 (0.443)	0.0595 (0.237)	0.333 (0.471)	0.111 (0.314)
English Non-Native	0.577 (0.494)	0.134 (0.341)	0.503 (0.500)	0.131 (0.337)	0.618 (0.486)	0.237 (0.425)
SPED	0.073 (0.260)	0.106 (0.308)	0.0739 (0.262)	0.0962 (0.295)	0.0698 (0.255)	0.0704 (0.256)

(Table B2 continued)

Maternal age	29.717 (5.362)	26.163 (6.377)	29.198 (5.368)	25.264 (6.031)	29.277 (5.248)	25.520 (6.318)
Mother college graduate	0.357 (0.479)	0.224 (0.417)	0.316 (0.465)	0.288 (0.453)	0.328 (0.470)	0.350 (0.477)
Mother some college	0.196 (0.397)	0.290 (0.454)	0.213 (0.410)	0.267 (0.443)	0.193 (0.394)	0.242 (0.428)
Mother high school grad	0.311 (0.463)	0.306 (0.461)	0.325 (0.468)	0.287 (0.452)	0.317 (0.465)	0.259 (0.438)
Mother married	0.881 (0.324)	0.678 (0.467)	0.860 (0.347)	0.633 (0.482)	0.873 (0.333)	0.663 (0.473)

Appendix C – Excluding Puerto Ricans

Table C1: Regression Adjusted Differences in Student Outcomes between Second and First Generation Hispanic Students

	Hispanic Students				
	(1)	(2)	(3)	(4)	(5)
Reading Score	0.223*** (0.005)	0.204*** (0.004)	0.242*** (0.004)	0.252*** (0.004)	0.236*** (0.004)
Math Score	0.140*** (0.004)	0.123*** (0.004)	0.159*** (0.004)	0.170*** (0.003)	0.159*** (0.003)
Disciplinary Incidents	0.005*** (0.001)	0.006*** (0.0006)	0.002*** (0.001)	0.006*** (0.0004)	0.007*** (0.001)
% Absent Days	0.0002 (0.0001)	0.0004** (0.0001)	0.0004** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)
Graduated from HS	0.116*** (0.007)	0.117*** (0.007)	0.131*** (0.007)	0.082*** (0.005)	0.079*** (0.005)
FRPL Eligibility	No	Yes	Yes	Yes	Yes
SPED status	No	No	Yes	Yes	Yes
School-Year FE	No	No	No	Yes	Yes
Native language	No	No	No	No	Yes
Number of test scores	1,237,186	1,237,186	1,237,186	1,237,186	1,237,186
Number of student obs.	2,361,548	2,361,548	2,361,548	2,361,548	2,361,548
Number of graduation obs.	59,250	59,250	59,250	59,250	59,250

Standard errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$