Selective Admissions and School Segregation

MITili Learning Effectiveness Research Grant

Final Report

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June 2021

Summary

70 years after *Brown v. Board of Education*, US school districts are still economically and racially segregated. School segregation is especially apparent in New York City, the largest US school district. A 2012 analysis revealed that more than half of NYC's public schools enrolled student populations consisting of 90 percent or more Black and Hispanic students (Fessenden (2012)). The contemporary public debate over segregation in NYC often focuses on supply side factors and, in particular, on the practice of screened admissions. Selective enrollment schools are often accused to perpetuate racial and economic segregation, by allowing white and upper income families to bypass mostly-minority and low-income public schools (Hu and Harris (2018)).[1] Nonetheless, the importance of screened admission, as opposed to families' preferences or residential sorting, is not clear.

In this project, we studied the contribution of selective admissions to the observed pattern of segregation in NYC middle schools. Specifically, we analyzed the impact of two integration plans which reduced the role of screens in admission in two local NYC school districts. In 2019, the Brooklyn Northwest district (district 15) eliminated traditional screening criteria and started setting aside 52 percent of the seats in each school for students who are low-income, English language learners, or homeless. At the same time, the Manhattan Upper West Side district (district 3) kept screened admission but started setting aside 25 percent of

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[1]This viewpoint is reflected in the New York Times' widely-followed 2020 podcast, Nice White Parents.

seats in each school for students who come from low-income families and earned low grades in elementary school.

In a first step of the analysis, we considered the overall effect of the integration plans on school diversity. We found that Northwest Brooklyn's integration plan substantially decreased economic and racial segregation at the district's schools. Applicants residing in the district attended middle schools that were 24 % less economically segregated and 16 % less racially segregated. On the other hand, Manhattan Upper West Side's integration plan was less successful and only decreased economic segregation by 9 %. The more substantial impact of Northwest Brooklyn's plan is consistent with the more far-reaching nature of its plan. On the other hand, the larger decline in economic segregation than in racial segregation is consistent with the fact that both integration plans targeted directly low-income students.

In a second step of the analysis, we took advantage of student-level application and enrollment administrative data to disentangle the channels through which the two integration plans affect school segregation. This comprehensive data allowed us to analyze how applicants adapt their application and enrollment behaviors to changes in selective admissions, and how applicants' behavioral responses amplify or diminish the plans' effects on school segregation. We found evidence that reducing the role of admission screens lead to White and high-income enrollment losses, which halved the effect of the plans. We showed that the increase in White and higher-income applicants' exit from public school could be explained by the the fact that these students were assigned to schools enrolling, on average, lower achieving students after the implementation of the integration plans. On the other hand, the changes in application behavior in response to the reforms resulted in a three times more diverse students' assignment to schools. Hence, applicants' behavioral responses at the enrollment and application phases essentially cancelled out.

Taken as a whole, these analyses suggest that reducing the role of selective admissions can increase school diversity. Nonetheless, the impact on segregation of any admission policy will depend partly on students' behavioral response. This implies that it is fundamental to model changes in students' application and enrollment behavioral when trying to forecast the effect of a change in admission criteria.

Background and method

Residential and school segregation is substantial in NYC.

We measure residential and school segregation using isolation indexes, which capture the likelihood students interact with other students of their same race or their same socio-economic background within a given local area.

The isolation index answers the question: for a representative NYC middle school student in a demographic group, what is the share of students from the same group in a local area? The isolation index can be computed for different geographic units: census tract, school district, or schools. For instance, the census tract or school isolation index for Black students is the expected share of Black students in a representative Black student's census tract or school.

To assess the level of integration, the isolation index has to be compared to the marginal distribution of the groups in the population studied. If the isolation index is larger than the group share in the population, it is evidence of segregation as students interact disproportionately more with students of the same demographic group. To compare school segregation across NYC school districts, we standardize the school isolation index at the district level. This standardized school isolation index corresponds to the divergence from perfect school integration at the district level. A value of zero corresponds to perfect integration, students attend schools that are as diverse as the district. A value of 1 corresponds to full segregation, students attend schools only with students from their demographic group.

NYC is residentially segregated. NYC middle schools achieve some integration but fail to reach the potential level of integration allowed by school districts' boundaries.

Table 1 documents residential and middle school segregation in NYC in 2018. To this end, the table compares the isolation indexes at different geographic levels for different groups of applicants to the city-wide representation of these groups. It appears that residential segregation measured as the census tract level is substantial in NYC. For instance, 22% of NYC middle school students are Black but more than 50% of a Black student's census tract neighbors are Black. Nonetheless, residential segregation falls when computed at the school district level. Down from 50%, 40% of students living in Black student's school district are of the same race. Finally, NYC middle schools are less segregated than NYC census tracts but more segregated than NYC school districts. Column 4 of the table shows that 48% of a

Table 1: NYC Segregation in 2018

		Isolation index for different geographical units		
	Marginal dist. NYC	Census tract	School district	Middle school
	(1)	(2)	(3)	(4)
Black	0.22	0.54	0.40	0.48
Hispanic	0.41	0.59	0.52	0.57
Black + Hispanic	0.64	0.80	0.73	0.78
Asian	0.18	0.47	0.32	0.40
White	0.16	0.48	0.28	0.40
Low-income	0.75	0.81	0.77	0.80
Nb Obs	78,723	78,723	78,723	78,723

Note: This table reports isolation indexes for different demographic groups and different geographic units in NYC in 2018. The isolation index corresponds to the probability that a student's peer in a given geographical unit is of the same group as hers. Columns 1, 2 and 3 report the probability that this happens at the scale of the city, the census tract and school district, and column 4 at the scale of the middle school. The sample is restricted to 6th grade students offered a seat or enrolled in a NYC public school who have non-missing demographic information.

Black middle school student's classmate are Black, which is comprised between the census track and the school district values.

To diminish school segregation, Two NYC school district launched integration plans.

In 2019, The Northwest Brooklyn school district and the Upper West side school district adopted "Diversity in Admission" initiatives which reduced the role of selective admissions in the districts' middle schools.

In 2019, Northwest Brooklyn district eliminated screening criteria at all its middle schools, and started reserving 52 percent of seats in each school for low-income, English language learners, and homeless students. Contemporaneously, Manhattan Upper West side adopted a plan which compromised between the traditional screened system and Northwest Brooklyn new policy; students were still screened, but some schools set aside 25 percent of seats for

students who came from low-income families, struggled on state tests, or earned low report card grades. Although the details of the plans differed across districts, their aim was similar: limit the extent of screening to promote integration by expanding access to most selective schools, especially for low income and minority students.

Such integration plans were likely to be effective in these two districts as admission screens were particularly prevalent in both districts before the reforms. Prior to 2019, 57% of Upper West side schools and 80% of Northwest Brooklyn schools selected their applicants based on grades and behavioral measures, while only 33% of NYC schools did so. Moreover, the two districts also served one of the most diverse population of students in NYC, while their schools were amongst the most racially and economically segregated.

The integration plans affected school diversity by changing students' assignment to the district schools. A change in applicants' application and enrollment behaviors might have affected the impact of the integration plans.

Both integration plans aimed at increasing school diversity by changing schools' admission criteria. As shown in the flow chart of Figure 1, schools' admission criteria affect which students enroll in each school through the schools' offers made during the assignment process. The extent to which both plans increase diversity at districts' schools depended not only on the plans themselves but also on students' application and enrollment behaviors. It is important to understand the role played by students' responses in the effectiveness of the integration plans as alternative policies could elicit different reactions.

As NYC assigns students to schools based on applicants' ranking of schools and schools' admission criteria, students' application behaviors affect which offers are made. By changing the ranking of schools they submit, students can thus affect the extent to which a change in schools' admission criteria may translate into more diverse offers.

In addition, students might impact the effect of the plans on school diversity through their decision of taking-up their offer or enrolling in a school outside the public school system. Students' take up decisions affect which schools' offers get translated into enrollment and thus whether offers are more or less diverse than actual enrollment. As such, a change in applicants' take up in response to the diversity plans will affect the plans' final effects on school diversity.

Depending on the nature and extent of applicants' behavioral responses to the integration plans, the effect of a change in admission criteria on school diversity could be amplified or diminished. For instance, if high income applicants assigned to schools enrolling a majority

of low income applicants systematically reject their offer and exit the public school system, then the change in admission criteria will not result in an increase in school diversity. On contrary, school diversity could even decrease as fewer high income applicants attend public schools. On the other hand, if low income applicants start listing competitive schools because they anticipate a higher probability of admission or a more welcoming environment, then the effect of the plans on diversity will be reinforced.

Figure 1: From admission criteria to final enrollment
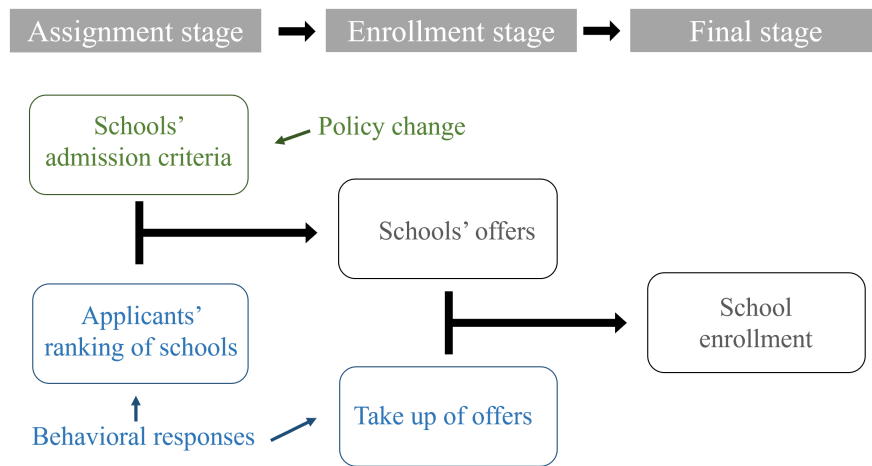
Aims of the study

The study aimed at understanding the contribution of selective admissions to the observed pattern of segregation in NYC middle schools by analyzing the impact of the Northwest Brooklyn and Upper West side integration plans. In particular, we wanted to answer the following questions:

- Did the plans lead to a decrease in racial segregation at each district's middle schools?

- Did the plans lead to a decrease in economic segregation at each district's middle schools?

- Which plan was most effective?

The study also aimed at disentangling the mechanisms through which the two integration plans affected school segregation by uncovering the contribution of students' behavioral responses to the plans' impact. In particular, we wanted to answer the following questions:

- Did students change their enrollment behavior in response to the integration plans?

- Did this change in enrollment behavior reinforce or diminish the impact of the integration plans?

- Did students change their application behavior in response to the integration plans?

- Did the change in students' application behavior reinforce or diminish the impact of the integration plans?

Summary of the findings

Finding 1: The Northwest Brooklyn integration plan substantially decreased economic and racial segregation at the district's schools. The Upper West side integration plan was less successful in reducing segregation than the Northwest Brooklyn plan.

As shown in Figure 2, Middle school students residing in Northwest Brooklyn attended middle schools that were 24% less economically segregated and 16% less racially segregated after the implementation of the plan. On the other hand, the Upper West side integration plan decreased economic segregation by 9% but did not affect racial segregation.

The more substantial impact in Northwest Brooklyn is consistent with its more far-reaching plan, which abolished selective admissions. While the larger decline in economic segregation than in racial segregation is consistent with the fact that both integration plans targeted low-income students.

The figure also shows other NYC districts that did not adopt any integration plans as a comparison group. These districts experienced no notable change in segregation over the period, which tends to indicate that the changes observed in the two districts which reformed their admissions did not happen by chance.

Overall, these results are consistent with the study of the same reform with different data by Margolis et al. (2020), although much smaller in magnitude. The difference in magnitude compared to their study arises from the fact that our measure of economic and

racial segregation takes into account exits of White and high-income students from the public-school system.

Figure 2: Evolution of Stand. School Isolation Indexes for Low-income and Minority Students

(a) Free and reduced price lunch students

(b) Minority students
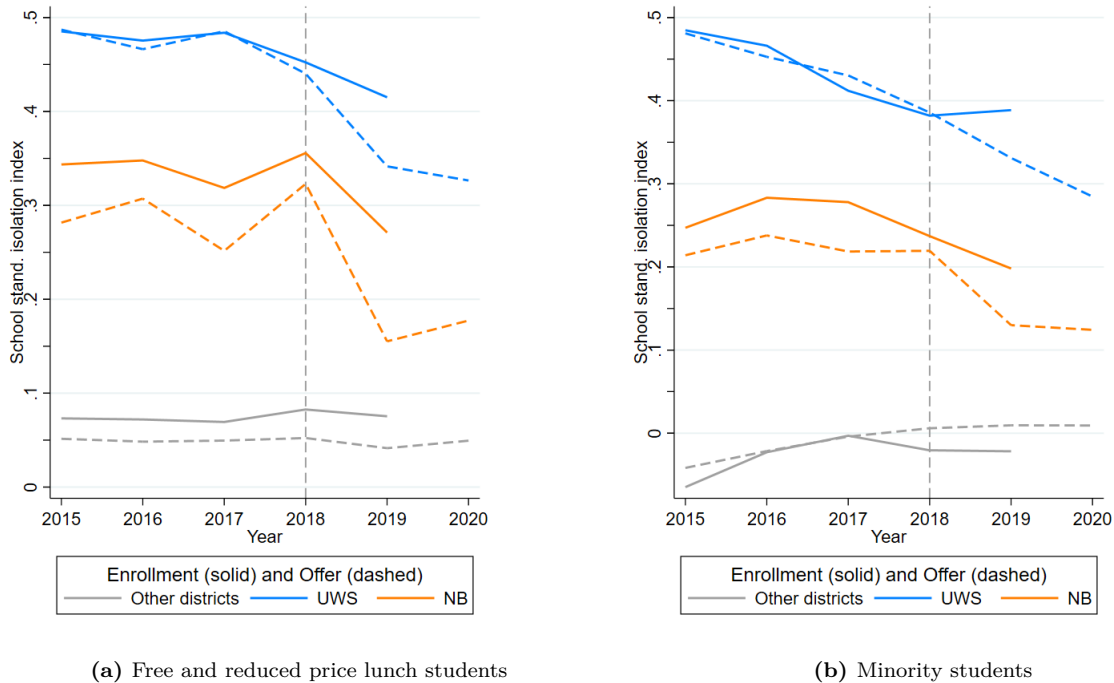
Note: These figures plot the evolution of school standardized isolation indexes for the Upper West side district, The Northwest Brooklyn district and other NYC districts between 2015 and 2020. Panel A displays the standardized index for students classified as low-income. Panel B displays the standardized index for Black, Hispanic, Native American and multi-racial students. The standardized school isolation index for other NYC districts correspond to the weighted average of district level standardized indexes, with weights equal to the shares of NYC students belonging to the group considered residing in each district. Dashed lines give the value of the standardized school isolation index at the offer stage, that is if all students were to enroll in the school they are offered in the match. Solid lines correspond to the value of the index after enrollment.

White students and high-income students residing in district 3 and district 15 were more likely to enroll in a school outside the NYC public school system after the implementation of the diversity plans.

As displayed in table 2, the integration plans affected the decision of students to enroll a middle school outside the public school system. In particular, White students and high-income students were 60% more likely to enroll outside the public-school system in the Upper West side district and 40% more likely to enroll outside the public-school system in the Northwest Brooklyn district, after the implementation of the integration plans.

Table 2: Estimates of Changes in Out of Public School Enrollment

	All	Black	Hispanic	Asian	White	low-income	high-income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mean share of students enrolling out of public school before the plans						
Upper West side	0.10	0.13	0.07	0.12	0.10	0.09	0.11
Northwest Brooklyn	0.12	0.18	0.09	0.07	0.18	0.09	0.17
	Change in share of students enrolling out of public school after the plans						
Upper West side	0.04***	-0.01	0.04*	0.09**	0.06***	0.00	0.07***
	(0.01)	(0.03)	(0.02)	(0.05)	(0.02)	(0.02)	(0.02)
Northwest Brooklyn	0.03***	-0.07**	0.01	-0.00	0.08***	-0.01	0.08***
	(0.01)	(0.03)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Nb of obs	332,491	73,261	136,303	60,515	56,173	239,494	92,997

Note: The first panel of this table shows the mean shares of students enrolling in a school outside the public school system before the implementation of the integration plans. The second panel of this table shows estimates of the changes in the shares of students enrolling in a school outside the public school system after the implementation of the integration plans. These estimates are generated using a differences-in-differences specification - see academic paper for more details. Robust standard errors on year are reported in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. .

Table 3 shows that the changes in public-school enrollment are mediated through changes in potential peer achievement. White and high-income applicants were more likely to turn down their offer since their assigned school would have, on average, lower-achieving potential peers after the implementation of the integration plans. Overall, White and higher-income

student enrollment losses halved the impact of the integration plans' effects on racial and economic segregation in both districts.

Table 3: Estimates of Changes Potential peers achievement

	All	Black	Hispanic	Asian	White	low-income	high-income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mean baseline math scores of potential peers before the plans						
Upper West side	0.37	-0.16	0.05	0.81	0.77	-0.11	0.72
Northwest Brooklyn	0.31	0.19	0.11	0.36	0.550	0.15	0.51
	Change in baseline math scores of potential peers after the plans						
Upper West side	-0.11***	-0.04	-0.01	-0.24***	-0.23***	0.07**	-0.23***
	(0.02)	(0.05)	(0.04)	(0.07)	(0.02)	(0.03)	(0.02)
Northwest Brooklyn	-0.10***	-0.01	0.02**	-0.05***	-0.25***	0.03***	-0.24***
	(0.01)	(0.03)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
N	396,958	85,967	163,110	72,553	67,453	286,690	110,268

Note: The first panel of this table shows the mean standardized 5th grade math test score of students offered the same school before the implementation of the integration plans. The second panel of this table shows estimates of the changes in the mean standardized 5th grade math test score of students offered the same school after the implementation of the integration plans. These estimates are generated using a differences-in-differences specification - see academic paper for more details. Robust standard errors on year are reported in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. .

The integration plans affected the inclusion and ordering of schools in the lists families submitted to the NYC Department of Education during the middle school application process.

In both districts, applicants applied to more schools after the implementation of the integration plans. This increase in the number of applications indicates that applicants attempted to mitigate the uncertainty created by the change in admission regime. In addition, low-income applicants with below-median test scores listed more competitive programs after the implementation of the plans. This behavior resulted logically from the increase in low-income applicants' odds of admission at more demanded schools due to the plans.

These changes in application behavior reinforced the effect of the plans on diversity. Figure 3 compares the simulated effects, absence any student response, of the integration

plans on school isolation indexes to the observed effects of the plans. The integration plans would have been three times less effective if applicants had not adapted their lists to the changes in admission criteria.

Figure 3: Changes in Stand. Isolation Indexes With and Without Students' responses
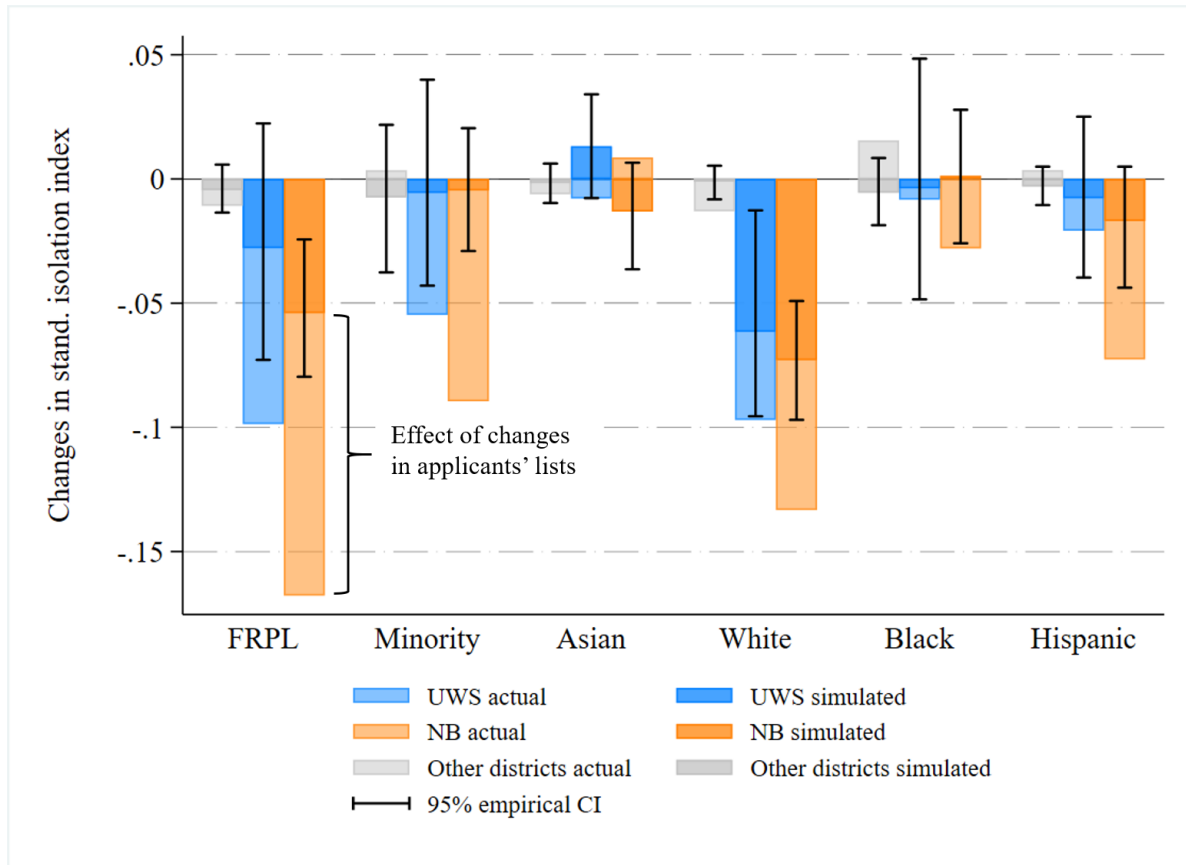
Conclusion

Taken as a whole, these analyses suggest that reducing the role of selective admissions can increase school diversity. Nonetheless, the impact on segregation of any admission policy will depend partly on students' behavioral response. This suggests that it is fundamental to model changes in students' application and enrollment behavioral when trying to forecast the effect of a change in admission criteria.

Acknowledgments

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