



Where Have All the Students Gone? COVID and the College Enrollment Shortfall

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Abstract:	<p>This paper analyzes data on enrollment trends for undergraduates, distinguishing longer-term declines due to shifting student demographics from the recent influence of the COVID crisis. We juxtapose figures drawn from national IPEDS data with a more detailed investigation of pre- and post-COVID enrollment at one of the nation's largest multi-campus state systems to identify which kinds of students have recently reduced their college-going. We find that the most consequential impact of the pandemic on college enrollments has occurred where recent high school graduates have postponed or abandoned plans for college entry. This is most common among less academically-prepared and low-income students. Already-enrolled undergraduates have largely weathered the COVID disruptions, despite considerable psychological and financial stresses. We consider the implications of these changes for higher education institutions and their students.</p>

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13 declines due to shifting student demographics from the recent influence of the COVID crisis. We
14 juxtapose figures drawn from national IPEDS data with a more detailed investigation of pre- and
15 post-COVID enrollment at one of the nation's largest multi-campus state systems to identify
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17 consequential impact of the pandemic on college enrollments has occurred where recent high
18 school graduates have postponed or abandoned plans for college entry. This is most common
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40 **Keywords:** COVID, college enrollment, retention, undergraduates, public university
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INTRODUCTION

In March of 2020, as the number of COVID cases in the US surged, the federal government declared a national health emergency, soon followed by restriction orders in several states and cities. In mid-semester, universities across the country sent students home and shifted to online instruction. At the end of that challenging Spring 2020 semester, when course enrollments opened for the following fall, some institutions noticed substantial shortfalls in student registration. Months later, as national enrollment statistics were tallied for Fall 2020, it became evident that this was a general trend (National Student Clearinghouse 2020, 2021a).

Enrollments at many less-selective colleges have declined for several consecutive semesters since Fall 2019, and some college leaders are girding themselves for the possibility of more bad news in the future. For the Spring 2021 semester, total undergraduate enrollment nationwide is 7.8% lower than it was in Fall 2019 (National Student Clearinghouse 2021c). This shortfall is the reverse of the pattern observed after previous economic downturns such as the 2008 Great Recession, when college enrollments boomed (Barrow and Davis 2012; Schmidt 2018). Instead, large sectors of academia are currently encountering steep declines in undergraduate enrollment.

In this paper, we analyze data on undergraduate enrollment trends, parsing out longer-term declines due to shifting student demographics as distinct from the recent disruption from the COVID crisis. To summarize a complex picture that is documented more fully below, the COVID crisis has so far impacted the inflow of new students into higher education much more strongly than it has affected ongoing students. Already-enrolled students have largely weathered the COVID disruptions, despite considerable psychological and financial stresses. Their retention

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3 or re-enrollment rates have held steady, and in some places even improved since the shift to
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5 remote instruction.
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8 In contrast, the drop in enrollments of newly entering students has been dramatic,
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10 especially at two-year community colleges, where a post-COVID shortfall has compounded a
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12 prior decade-long enrollment decline. Incoming student enrollments at some four-year
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14 institutions have also shrunk, but to a smaller extent. Finally, incoming student transfers have
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16 declined (National Student Clearinghouse 2021a).
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20 The most consequential among these shifts is that fewer freshly-graduated high-school
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22 students have entered college since COVID, a behavioral shift evident in just one year. This
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24 recent cutback is not attributable to changes in the size of youth birth cohorts or to geographical
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26 shifts in the college-age population. Those important demographic changes are indeed in the
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28 offing (Grawe 2018, 2021), but are mainly a few years away. Today's problem is that, since the
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30 onset of COVID, youths who would previously have entered college shortly after high-school
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32 graduation have instead stayed away from college. How many are delaying their entry until in-
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34 person classes resume, and how many have abandoned their college plans altogether, has yet to
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36 be seen. This is not a matter of students who might have entered a community college deciding
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38 that they would start at a public four-year institution instead. That dynamic was indeed occurring
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40 in the decade prior to the pandemic. Since COVID, however, there has been a decline in total
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42 enrollment numbers in higher education, not just a redirection of students from one institutional
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44 sector to another.
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50 Comparing the demographics of the final pre-COVID entering cohort (in Fall 2019) with
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52 the first entering cohort following COVID (in Fall 2020) at one large multicampus system – the
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54 City University of New York, known as CUNY – reveals what kinds of students have paused
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3 their college plans. We find that the shortfall has been much more common among young men
4 than among young women. Racial differences in enrollment reductions have been minor. Most
5 strikingly, the students who have failed to start college in the last year are distinctive in terms of
6 their class background and academic preparation. There has been a disproportionate decline in
7 the entry of Pell-eligible students, and those who were classified as poor. In addition, by
8 comparing the percentage of incoming students who passed skills placement tests in the Fall
9 2019 cohort to those who entered in Fall 2020, we can tell that academically less-well-prepared
10 students are over-represented among those who have stayed away from college.
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22 In sum, those who have postponed or abandoned their transition to college are
23 disproportionately lower-income and academically less-well-prepared students, most of whom in
24 the past would have headed to community colleges. Delaying enrollment has been shown to
25 reduce students' chances to complete their degree in pre-COVID years. In that period, delayed
26 enrollment was associated with a low SES family background and low academic preparation
27 (Andrews 2018). Even in pre-COVID years, scholars found that low-income students' plans to
28 attend colleges were easily disrupted by "urgent and immediate consideration," such as family
29 arrangements, housing, and financial setbacks (Cox 2016). Rodriguez et al. (2021) reported
30 similar findings from the disruption of college plans following the 2020 Hurricane Maria in
31 Florida. In addition, Niu and Tienda (2013) documented that delaying college entry a year or
32 more significantly lowers the odds of attending a four-year college. Thus, the current COVID
33 disruption has intensified pre-existing class-related hurdles in the transition between high school
34 and college entry. By contrast, academically well-prepared middle-class students have applied in
35 unprecedented numbers to selective private colleges and to flagship public universities, possibly
36 encouraged by the suspension of the SAT during the pandemic (Jaschik 2021a, 2021b).
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3 This post-covid pattern implies a widening gulf in educational opportunity between
4 youths from affluent families and those from lower-income households. That raises some very
5 contentious issues for educational policymakers. If the high school graduates who have recently
6 stayed away from college are those least likely to complete a credential – a group Clifford
7 Adelman (1999) labeled “incidental students” – is this a beneficial development? Or is this
8 enrollment shortfall a grave setback for educational equity, a trend that may further undercut the
9 ongoing national “race between education and technology” (Goldin and Katz 2008) and a
10 harbinger of future shortages of skilled labor in America? Moreover, are the recent enrollment
11 shortfalls reversible? Should those who postponed college be encouraged to start college once
12 institutions revert to in-person instruction?
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26 Our goal in this paper is to present empirical evidence about recent trends and immediate
27 post-covid shifts in enrollment that are needed to inform those policy debates. We begin with an
28 overview of enrollment changes nationwide during the decade prior to COVID, based on our
29 analyses of IPEDS data, followed by a summary of figures from the National Student
30 Clearinghouse regarding recent post-covid enrollment. We then analyze tracking data for the
31 entire undergraduate body at the City University of New York (CUNY), an urban multicampus
32 system that enrolled over 240,000 undergraduates each semester prior to COVID. Individual-
33 level analyses of undergraduate retention and enrollment reveal which kinds of students have
34 held back from entering college as well as documenting how already-enrolled students have
35 fared academically during the pandemic.
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51 **THE LONGER-TERM NATIONAL PICTURE**

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3 Table 1 presents our calculations using the federal government's Integrated Postsecondary
4 Education Data System (IPEDS). The table reports changes in the numbers of degree- and
5 certificate-seeking undergraduates who enrolled for the first-time during each Fall semester, a
6 measure we call 'FTFDS enrollment¹.' This metric quantifies the **inflow of new students** (both
7 full- and part-time) into higher education each Fall semester.
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15 **[Table 1 About Here]**
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17 Table 1 reports the percentage change in enrollment for first-time entering
18 undergraduates at degree-granting institutions between Fall 2010 and Fall 2019 (the decade
19 immediately prior to the pandemic). The public four-year sector expanded its inflow of FTFDS
20 enrollment by 17.7% over that decade. First-time enrollment in the private non-profit four-year
21 institutions declined by very small amount: 0.6 percent. Over the same period, however, there
22 were huge drops in the numbers of first-time students entering both public two-year community
23 colleges (-27.1%) and at for-profit institutions (-70.1%). These declines represented an
24 unprecedented movement of students away from community colleges and away from for-profits,
25 occurring before the pandemic began.
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37 Changes in the racial and ethnic composition of the undergraduate population occurring
38 between 2010 and 2019 accompanied these sectoral shifts in enrollment. The number of Black
39 first-time students entering higher education dropped by 22.8% over that decade. The decline in
40 first-time non-Hispanic white students was also large (-20.6 %). Those drops were offset by large
41 increases during those years in the numbers of incoming Hispanic/Latino undergraduates
42 (+28.1%) and Asian undergraduates (+19.5%).
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56 ¹ First Time Fall Degree-Seeking students. The large majority of new students start in the Fall each year. The time
57 trends for Spring entrants mirror those of the much more numerous Fall entrants discussed here.
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3 These large pre-pandemic changes in the numbers of entering undergraduates from
4 different racial and ethnic groups are partly but not fully accounted for by changes in each racial
5 group's birthrates over time. For example, the 22.8% decline in entering Black undergraduates
6 from 2010 to 2019 corresponds to an approximately 9% decrease in the number of Black births
7 for those college-age cohorts. Similarly, the 20.6% decrease in white undergraduates corresponds
8 to a roughly 10% decrease in non-Hispanic white births². In other words, for both these racial
9 groups, the decline in college-going between 2010 and 2019 exceeded the shrinkage in the size
10 of corresponding birth cohorts, implying that over time smaller proportions of college-age
11 individuals within each of those groups were entering college. This decline in college-going
12 occurred despite improvements in Black and white high school graduation rates over those years
13 (de Brey et al. 2019), and despite a steep decline in incarceration rates (Carson 2020).
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28 One plausible explanation for the pre-COVID decreases in Black and white college-going
29 is that more jobs for young people opened in the expanding economy after 2010, encouraging
30 some high school graduates to opt for work rather than going to college³. However, a logic
31 highlighting expanding job opportunities for youth – even though true – fails to explain why
32 rapidly increasing proportions of Hispanic high school graduates were entering college between
33 2010 and 2019, just when the Black and non-Hispanic white college-going trends were moving
34 in the opposite direction. The same expanding job opportunities should also have drawn Hispanic
35 students away from college, but instead, there was a Hispanic upsurge in college-going between
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51 ² Authors' calculations from government data at <https://www.census.gov/prod/2011pubs/12statab/vitstat.pdf>
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53 ³ Evidence of more jobs opening up for youth is best seen in substantial declines between 2020 and 2019 in the
54 proportions of youth ages 18 to 24 who are neither in education nor in employment. See: Fry (2019), Lewis (2020),
55 and https://nces.ed.gov/programs/digest/d20/tables/dt20_501.30.asp?current=yes
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3 2010 and 2019, a 28.1% increase that exceeded the Hispanic rate of population growth (Bauman
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6 2017; Krogstad 2016).

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8 One contributing factor to the upswing in Hispanic college enrollment is that the
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10 proportion of young Hispanics who were US-born increased substantially during that decade.
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12 Other things being equal, US-born Latinos are more likely than their foreign-born counterparts to
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14 complete high school and proceed to college (Alba 2020; Alba, Beck, and Basaran Sahin 2018;
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16 de Brey et al. 2019). In part this reflects the fact that US-born Hispanic youth can access federal
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18 student loans and qualify for in-state tuition while undocumented foreign born youth typically
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20 cannot. Among high school graduates, the rate at which young Hispanics head immediately from
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22 high school to college caught up with that of non-Hispanic whites during that pre-COVID decade
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24 (de Brey et al. 2019; McFarland et al. 2020).

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28 The educational attainment of older generations of Hispanic Americans in the US has
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30 climbed since the 1970s, and this has had a knock-on effect on the attainment and assimilation of
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32 their children and grandchildren (Leach, Hook, and Bachmeier 2018; Tran and Valdez 2017), a
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34 second factor contributing to the pre-COVID college boom. Finally, the educational attainment
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36 of Mexican-American *immigrants* also increased in recent decades, making them and their
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38 children more likely to enter college after time in the US (Garip 2012; Noe-Bustamante 2020).

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42 In combination, these factors contributed towards the upsurge in Latino college-going in
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44 the decade immediately prior to the pandemic, an increase which (along with increased numbers
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46 of Asian undergraduates) saved higher education from what would otherwise have been a very
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48 dramatic decline in undergraduate enrollment. However, as O'Connor (2009) noted, Hispanics
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50 continued to be over representative in community colleges during this period.
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NATIONAL ENROLLMENT CHANGES SINCE THE PANDEMIC

The National Student Clearinghouse (NSC) collects student enrollment data contributed each semester by some 3,600 participating colleges nationwide. In Spring 2020 most colleges responded to the pandemic by shifting to remote instruction. The following semester (Fall 2020) was therefore the first time when most students knew they would be having remote instruction if they enrolled.

In December 2020, NSC reported data for the Fall 2020 semester (National Student Clearinghouse 2020) showing a large enrollment drop, relative to the pre-COVID Fall 2019 semester. Across higher education as a whole enrollment declined by 4.4%. The enrollment declines were larger at public community colleges (-21%) and at four-year public institutions (-8.1%). Enrollment decreases were particularly steep for international undergraduates (-14.9%) and for incoming freshmen (-13.1%). Enrollment went down for all racial groups (-7.5% among Black students, -6.6% among whites, -5.4% among Hispanic, and -3.1% among Asian students). The post-COVID reduction among Hispanic undergraduates was especially noteworthy because it reversed the prior years of rapid growth in college-going.

In June 2021, NSC (2021b) reported on enrollment for the next semester (Spring 2021), compared to enrollment in the prior Spring 2020. The Spring-to-Spring one-year drop was 3.5% for undergraduates. Community Colleges again lost more enrollment (-9.5%). Differences between racial groups were not large, except for Native Americans whose enrollment shrank by 13%. Transfers into community colleges also dropped by 15.2% compared to the prior Spring, but transfers into four-year colleges did not change significantly (National Student Clearinghouse 2021a).

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3 An additional analysis of enrollment changes was undertaken by several researchers at
4 the College Board (Howell et al. 2021). They linked demographic information that the College
5 Board collected from students who took the SAT, PSAT or AP tests to their NSC enrollment
6 records, and used regression adjustment to predict which kinds of students did not attend a
7 college in Fall 2020. Their analyses confirmed that enrollment declines were greatest at two-year
8 colleges, but they also found lower enrollment in some four-year institutions, with considerable
9 state and regional variation in enrollment shortfalls and growth.
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19 Howell et al's (2021) models indicated that undergraduate retention did not change at
20 four year-colleges but had worsened at community colleges during the pandemic. They also
21 highlighted a phenomenon whereby some students who had high grades while at high school had
22 delayed their entry to college, taking a covid-inspired "gap year." At two-year institutions,
23 models showed a greater pandemic impact on the enrollment of first-generation students, and on
24 underrepresented minorities and academically lower-achieving students from high-poverty high
25 schools.
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35 These national data provide an important picture of changes in total higher education
36 enrollment pre-and post-COVID, with breakdowns by college type, gender and race. To relate
37 other dimensions of student background to pandemic shifts in undergraduate enrollment, we next
38 turn to a very large case study, analyzing institutional databases that track undergraduates from
39 all 18 undergraduate campuses of the City University of New York.
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49 **SHIFTS IN ENROLLMENT AND RETENTION WITHIN THE CUNY SYSTEM**

50 Table 2 provides descriptive statistics for CUNY undergraduates aged 18 and above and
51 compares the enrollment profile in Fall 2019 with that in Fall 2020 (before and after COVID).
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3 The CUNY system enrolled 205,353 degree-seeking undergraduates in Fall 2019 and
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5 enrollments then dropped by 4.5% in one year by Fall 2020. However, the enrollment declines
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7 were much larger at certain types of college and among different kinds of students. For example,
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9 CUNY community college enrollments decreased by 10.6%, the number of incoming freshmen
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11 declined by 11% and the number of transfers by nearly 18%. Among students pursuing associate
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13 degrees – the most strongly affected group – the enrollment decline among men was double the
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15 size of that among women (-15% and -7.2% respectively). The enrollment shrinkage among
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17 continuing students in associate’s programs was not negligible (-3.2%) but was far smaller than
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19 the falloff among entering freshmen at community colleges (-18.2%). In addition, the number of
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21 transfers into associate programs dropped by 33%.
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26 **[Table 2 About Here]**
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31 **THE ENROLLMENT DECLINE FOR ENTERING FRESHMEN**

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33 Given the large decrease in entering freshmen between Fall 2019 and Fall 2020, we pooled data
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35 for entering freshmen for those two semesters and estimated a linear probability model, where
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37 the dependent variable had a value of 1 for freshmen entering in Fall 2020 and zero for freshmen
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39 entering in Fall 2019. The predictors included various academic and demographic characteristics
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41 of those students starting at CUNY.
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45 Table 3 reports a predictive model solely for entrants into an associate’s program (Model
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47 A) and a separate model for those entering a bachelor’s programs (Model B). The coefficients
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49 represent the probability of a new student entering CUNY in the Fall 2020 post-covid semester
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51 rather than Fall 2019, relative to the omitted or reference category for that predictor. For
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53 example, the male coefficient in Model A of -.035 may be interpreted as indicating that a male
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3 associate degree-seeking freshmen had a probability of enrolling in Fall 2020 (compared to their
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5 Fall 2019 baseline) that was 3.5 percentage points lower than an otherwise similar female
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7 associate degree-seeking freshman, controlling for their pre-COVID Fall 2019 enrollment levels.
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10 There was a similar gender effect for entering students at the bachelor's level: male freshmen
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12 were significantly less likely to enroll than women post-COVID.
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15 **[Table 3 About Here]**
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17 Among associate degree students, the coefficients for two kinds of financial aid were
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19 significant and negative – the federal Pell grant (-.086) and the New York State Tuition
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21 Assistance Program, known as TAP (-.119). The probability of students with these kinds of grant
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23 aid enrolling in the post-covid Fall 2020 semester was much lower than the probability of
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25 students who filled out a FAFSA financial aid application but did not receive such aid,
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27 controlling for their enrollment numbers in the prior pre-covid Fall semester. Furthermore,
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29 students who did not apply for aid and did not submit the FAFSA were much more likely to
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31 enroll post-COVID, compared to aid recipients. This implies that the enrollment gap between
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33 lower-income students (those with grant aid) and those who either did not apply for or who
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35 entered without aid was significantly larger in Fall 2020. This pattern was largely similar for
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37 entering freshmen at four-year baccalaureate programs.
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42 There were large negative coefficients for foreign freshmen and for freshmen who were
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44 undocumented, compared to US citizens, at both the associate's and baccalaureate programs. By
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46 implication, both undocumented and foreign students were much more likely than US citizens to
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48 avoid starting at CUNY in Fall 2020, compared to their pre-COVID levels.
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51 The coefficient of -.032 for proficiency in math implies that the probability of new
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53 students who were not proficient in math starting at an associate degree program in Fall 2020
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3 relative to Fall 2019 was 3.2 percentage points lower than someone who was proficient, net of
4 the other controls. Similar though smaller proficiency effects were evident for proficiency in
5 writing.
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10 In these multivariate models, after controls for financial aid, academic proficiency and
11 other covariates, racial minorities were somewhat *more likely* to enroll post-covid than otherwise
12 similar non-Hispanic whites. (Native Americans were the exception; however, they are few in
13 number at CUNY.) Particularly noteworthy were the substantial positive coefficients for Asians,
14 indicating that Asian undergraduates did not reduce their entry either into community colleges or
15 four-year colleges in Fall 2020, compared to non-Hispanic whites, net of controls.
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26 **COVID AND THE RETENTION OF ALREADY-ENROLLED UNDERGRADUATES**

27 Undergraduate retention (or its opposite – “dropping out” or attrition) has been considered a
28 problem for over 50 years (Newman 1971:1). Many undergraduates do not return after their first
29 semester of college and yet more complete one year but do not come back for their second year.
30 Although some “stop outs” do later return to college, and roughly 25% of those re-enrolling do
31 complete degrees (National Student Clearinghouse 2019), dropping-out or stopping-out are the
32 main reason that 6-year degree completion rates in the US are so low: currently about 33%
33 completion for community college students and 63% for bachelor’s students (Irwin et al. 2021).
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44 When the pandemic started and colleges pivoted to remote instruction, one concern was
45 that pandemic-fueled disruptions in undergraduates’ financial and family lives might lead to
46 increased dropping or stopping out. To examine whether retention had been affected in this way
47 at CUNY, we compiled data not only for two post-covid semesters (Spring 2020 and Fall 2020)
48 but also for earlier semesters, to identify recent deviations from the longer pattern.
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3 Figure 1 illustrates retention for semesters from Spring 2017 to Spring 2020, based on
4 college records for approximately 200,000 students each semester. The numbers report the
5 percent of students who attended that semester and came back and enrolled for the following
6 semester (with an adjustment for those who had just graduated). The figure for Spring 2017
7 means that 84.9% of non-graduating bachelor's degree-seeking students re-enrolled the
8 following Fall 2017 semester. The 87.2 figure for Spring 2020 – when CUNY moved to remote
9 instruction – means that 87.2% of those undergraduates came back and re-enrolled in Fall 2020,
10 for a second remote-instruction semester.
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21 The underlying pattern zig-zags up and down between Fall and Spring because retention
22 typically declines more immediately after a spring semester, when retention measures who
23 comes back after a long summer break. After a fall semester, retention means returning to
24 college after the short winter break and attrition then is usually less than over the summer. This
25 zig zag pattern is observed nationwide pre-covid. Our interest in this paper is on whether this
26 long-standing pattern has changed since the pandemic began.
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35 **[Figure 1 About Here]**
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37 Figure 1 indicates that retention in CUNY's baccalaureate institutions is always
38 substantially higher than at its community colleges or associate's programs. It also shows that
39 there was **not** a substantial drop in retention among previously-enrolled bachelors students
40 immediately after the pandemic emerged in Spring 2020. If anything, retention improved at the
41 end of that semester, compared to the drop-off typical in prior years. For BA students after Fall
42 2020, there was about a one percent decrease in the return rate compared to previous Fall
43 semesters. None of these numbers indicate a major impact on retention rates for continuing
44 undergraduates in baccalaureate programs.
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[Figure 2 About Here]

Figure 2 illustrates retention only for associate's programs, and further distinguishes between retention among continuing students, among students who had just completed their first semester (i.e., freshmen), and for transfers, and for students who were returning to school after stopping out of college in the prior semester (re-entry students). Consistently, re-entry students at CUNY community colleges have the lowest retention rate: under 60% of them stay for a second semester after returning. Freshmen have the next lowest retention: around three-quarters stay after their first Fall semester till the following Spring, and roughly two-thirds are retained after completing their first spring semester, returning for the following fall. Transfer students have somewhat better retention than first time or freshmen students. Continuing students, those who are not in their first year of community college, have the highest retention rates: roughly 76-78% return after each semester.

The most important feature of Figure 2, however, is that retention did not drop noticeably immediately after the Spring 2020 semester. Retention after the next semester, Fall 2020, is a more complicated picture, with declines in retention compared to prior fall semesters among continuing and freshmen students. We need to wait for more semesters of data before being certain about the longer-term retention pattern.

These analyses suggest that the impact of the covid pandemic and the switch to remote instruction did not have a substantial immediate effect on retention among continuing students. Instead, as we have shown, considerable enrollment shortfalls occurred immediately due to a reduction of new students entering the system and of reduced transfers into colleges, a trend that has persisted until the present. We next turn to data that speaks to why so many students have postponed or canceled entering college in the post-pandemic period.

WHY HAVE SOME STUDENTS STAYED AWAY?

In the wake of the COVID pandemic, the US Census Bureau began a series of surveys to document the impact of the pandemic and its attendant economic recession on US households. Known as the Pulse Household Surveys, these occurred every two weeks from Spring 2020 on⁴. One set of questions asked whether anyone in the household had changed their plans to attend higher education, and asked how those plans changed, including whether household members had canceled their plans to attend. The survey also asked for reasons behind changing plans. The survey questionnaires allowed respondents to check multiple reasons.

Table 4 reports those reasons, solely for households which reported members canceling their college plans. They show a mix of motivations. Concerns about catching COVID were common, as were concerns or uncertainty about the changing format of classes. But a sizeable minority (42%) reported they were unable to pay for classes because of the pandemic's effect on their household's income.

Two other possibilities were not included as choices in the Household Pulse questionnaire but may be additional contributing factors. In 2020, many high schools shifted to remote learning in the spring semester of their students' senior year. We do not have data about how badly this affected counseling and advisement for high school seniors, but it seems likely that various activities may have been disrupted or discontinued which in normal years are undertaken by school staff to encourage seniors to prepare for college, from providing feedback on application essays, to urging students to prepare lists of potential schools, to reminders about submitting FAFSA forms. Beyond that, in normal years, there is often peer group pressure among high school seniors about college plans with peers. In the absence of that peer interaction

⁴ See <https://www.census.gov/programs-surveys/household-pulse-survey/technical-documentation.html>

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3 about college when high schools were closed, it is possible that some high school seniors either
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5 lost motivation or did not complete the various bureaucratic steps needed for college entry. In
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7 normal years, “summer melt” – high school graduates who plan to start college in the Fall but
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9 who fail to follow through on their plan – is a problem that especially impacts lower-income
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11 high-school students (Castleman and Page 2014). When high schools were closed in senior year,
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13 it is likely that summer melt issues were exacerbated.
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17 **[Table 4 About Here]**
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20 21 **DISCUSSION AND CONCLUSION**

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23 Our analyses have shown that the COVID pandemic had its greatest impact in the short-term on
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25 enrollment at those higher education institutions that had already been experiencing major
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27 enrollment shifts pre-COVID. Community colleges and for-profit colleges had been losing
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29 enrollment throughout the prior decade. The numbers of non-Hispanic white and Black entrants
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31 had declined and demographic projections by Grawe (2018, 2021) indicate that additional
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33 enrollment declines are likely to emerge in the near future.
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37 The pandemic exacerbated those pre-existing enrollment difficulties primarily among the
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39 less selective institutions. Some highly-selective public and private colleges have experienced
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41 the opposite – a boom in applications following the pandemic – but those institutions account for
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43 at most 23% of total undergraduate enrollment⁵ in the US. Most higher education institutions are
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45 experiencing enrollment declines.
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49 The main group of students who have changed their college-going behavior during the
50
51 pandemic are recent high school graduates. Many of them – especially less academically-
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55 ⁵ Authors’ calculations using IPEDS enrollment data and Chetty et al’s (2020) classification of colleges by
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57 selectivity.

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3 prepared students from lower-SES families – have held back during the pandemic rather than
4 starting college. Lewis (2020) has warned that these young people may remain unconnected
5 from both employment and higher education and has presented alarming projections as to their
6 possible numbers. In the past, this combination, known to demographers as NEETs (Neither in
7 Employment nor Education nor Training), has been at higher risk for long-term unemployment,
8 poverty, and incarceration. Policymakers are therefore daunted by the possibility that the
9 pandemic has swelled the ranks of NEETS, after a decade in which the size of that disadvantaged
10 group had been shrinking.
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22 It is possible that the youth cohorts who avoided the transition to college over the last
23 year or two will soon enroll in large numbers, now that instruction and other aspects of college
24 life are returning to normal. That would greatly help colleges that have been coping with the
25 financial stresses of reduced enrollment. But that is the best-case scenario, and by no means a
26 sure thing.
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33 Our analyses suggest that the pandemic has not resulted in increased attrition of ongoing
34 students, at least in our multi- institutional study. There may be more subtle educational scarring,
35 however, if some undergraduates reduce their course load or have lower GPAs or take longer to
36 complete their degrees. Those effects would only become evident in the longer term, and we will
37 track pre- and post-COVID cohorts to determine the extent of educational scarring in the years
38 ahead.
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47 The pandemic disruptions may also affect higher education in other less direct ways.
48 More employees may be working remotely in the years ahead, and that may make it easier for
49 working adults to pursue degrees while employed. Colleges may decide to continue to offer more
50 courses in remote-instruction formats to facilitate that population and to serve on-campus
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3 students who have found online formats convenient. Class sizes have sometimes changed with
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5 online instruction, and this may change college staffing patterns. In short, the pandemic has
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7 turned the academic world upside down and its aftermath may still be felt well after the
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9 immediate public health crisis recedes.
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For Peer Review

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Table 1. Percentage Change in FTFDS Enrollment between Fall 2010 and Fall 2019

	White	Black	Hispanic	Asian	Other	All Races
Public 4-year	0.2	9.5	87.1	53.2	23.2	17.7
Private 4-year nonprofit	-8.7	-1.0	33.0	23.9	-2.6	-0.6
Public 2-year	-40.2	-35.0	15.1	-15.3	-29.7	-27.1
For-profit (2-year and 4-year)	-73.7	-69.7	-62.3	-57.6	-74.2	-70.1
Total ETFDS Enrollment	-20.6	-22.8	28.1	19.5	-19.5	-11.1

Note: numbers presented above are authors' analyses of federal IPEDS data (downloaded from <https://nces.ed.gov/ipeds/datacenter/DataFiles.aspx>). Nonresident alien students and private 2-year nonprofit institutions are not included in the calculations above. Category "Other" includes Native Hawaiian or Pacific Islander, American Indian or Alaska Native, two or more races, and students with unknown race or ethnicity.

Table 2. Summary Statistics for Degree-seeking Student Enrollment at CUNY

	Associate degree		Bachelor's degree	
	Fall 2019	Fall 2020	Fall 2019	Fall 2020
<i>N</i>	86,001	76,897	119,352	119,116
Age				
Median	21.55	21.54	21.82	21.7
Status				
Freshman	19,222	15,722	12,247	12,173
Continuing	51,046	49,390	85,684	86,892
Re-entry	7,896	6,564	5,929	6,242
Transfer	7,837	5,221	15,492	13,809
Sex				
Female	48,377	44,899	67,577	68,410
Male	37,624	31,998	51,775	50,706
Race				
White	13,055	11,393	28,964	28,739
Black	27,174	24,500	26,210	25,990
Hispanic	31,037	27,555	33,234	33,024
Asian	14,377	13,110	30,597	31,019
Native	358	339	347	344
Full-time				
No	26,506	23,880	27,323	25,995
Yes	59,495	53,017	92,029	93,121
Citizenship				
US	66,323	63,362	99,321	101,938
Foreign	17,479	11,656	17,810	15,080
Undocumented	2,199	1,879	2,221	2,098
Student with disability				
No	80,927	73,046	114,844	114,781
Yes	5,074	3,851	4,508	4,335
Proficient in writing^a				
No	25,680	20,339	14,934	13,790
Yes	55,398	50,189	99,113	98,460
No info	4,923	6,369	5,305	6,866

Proficient in math^a

No	37,780	28,703	25,531	22,626
Yes	43,369	41,978	88,681	89,884
No info	4,852	6,216	5,140	6,606

Pell recipient

No	18,314	21,899	30,543	36,886
Yes	51,467	39,742	63,825	58,497
FAFSA not filed	16,220	15,256	24,984	23,733

TAP recipient

No	40,526	40,844	42,807	47,586
Yes	29,552	21,384	52,117	48,624
FAFSA not filed	15,923	14,669	24,428	22,906

Note: The statistics above only contains adult students age 18 or older at CUNY.

a. Students' initial proficiency level when entering CUNY as a first-time freshman.

Table 3. Linear Probability Model Predicting Freshman Enrollment at CUNY in Fall 2020

	Model A		Model B	
Sex				
Female	ref.		ref.	
Male	-0.035***	(0.005)	-0.026***	(0.006)
Race				
White	ref.		ref.	
Black	0.018*	(0.009)	0.029**	(0.010)
Hispanic	0.029***	(0.008)	0.023*	(0.009)
Asian	0.075***	(0.010)	0.058***	(0.009)
Native	0.058	(0.037)	0.018	(0.058)
Age				
	-0.000	(0.001)	-0.005*	(0.002)
Full-time				
No	ref.		ref.	
Yes	0.034***	(0.009)	-0.013	(0.026)
High school				
NYC public	ref.		ref.	
NYC private	-0.054***	(0.016)	0.005	(0.013)
NYS not NYC	-0.043*	(0.019)	-0.023	(0.012)
US not NYS	-0.082*	(0.035)	0.051	(0.035)
GED	-0.029*	(0.012)	0.032	(0.055)
Foreign	0.073***	(0.012)	0.115***	(0.031)
Citizenship				
US	ref.		ref.	
Foreign	-0.346***	(0.008)	-0.380***	(0.012)
Undocumented	-0.203***	(0.017)	-0.166***	(0.026)
Student with disability				
No	ref.		ref.	
Yes	-0.179***	(0.013)	-0.225***	(0.027)
Proficient in writing				
Yes	ref.		ref.	
No	-0.071***	(0.007)	-0.132***	(0.029)
No info	0.102***	(0.013)	-0.080***	(0.014)

Proficient in math

Yes	ref.		ref.	
No	-0.032***	(0.006)	-0.068**	(0.022)
No info	-0.114***	(0.014)	0.029*	(0.014)

Pell recipient

No	ref.		ref.	
Yes	-0.086***	(0.007)	-0.014	(0.008)
FAFSA not filed	0.293***	(0.026)	0.276***	(0.032)

TAP recipient

No	ref.		ref.	
Yes	-0.119***	(0.006)	-0.112***	(0.008)
FAFSA not filed	-0.323***	(0.025)	-0.296***	(0.032)

Constant

Constant	0.607***	(0.018)	0.697***	(0.050)
Observations	34,944		24,420	
R-squared	0.091		0.062	

Note: Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

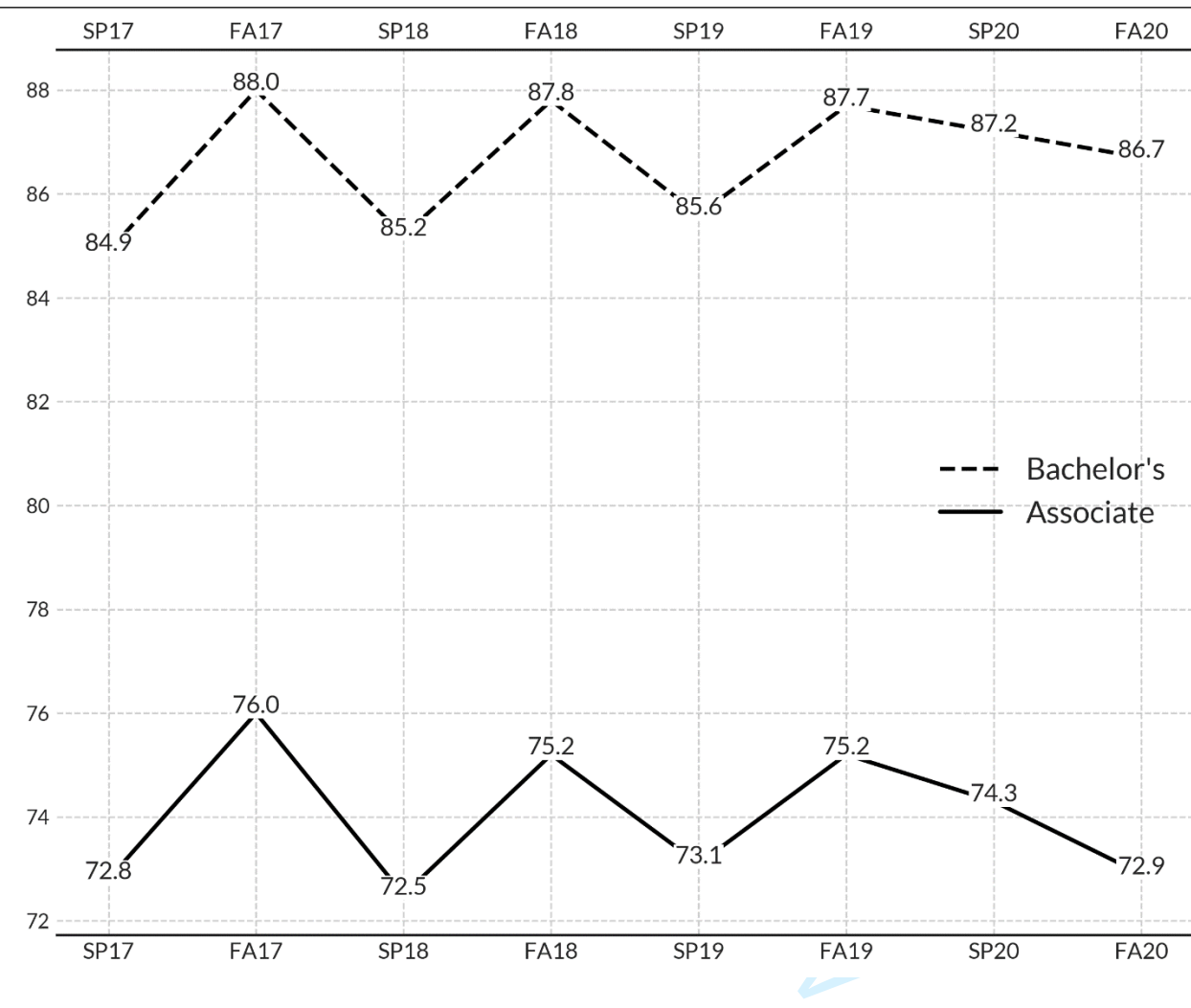
Model A: regression model among associate degree-seeking students.

Model B: regression model among bachelor's degree-seeking students.

Table 4. Reasons Given by Household that Canceled Plans for Higher Education

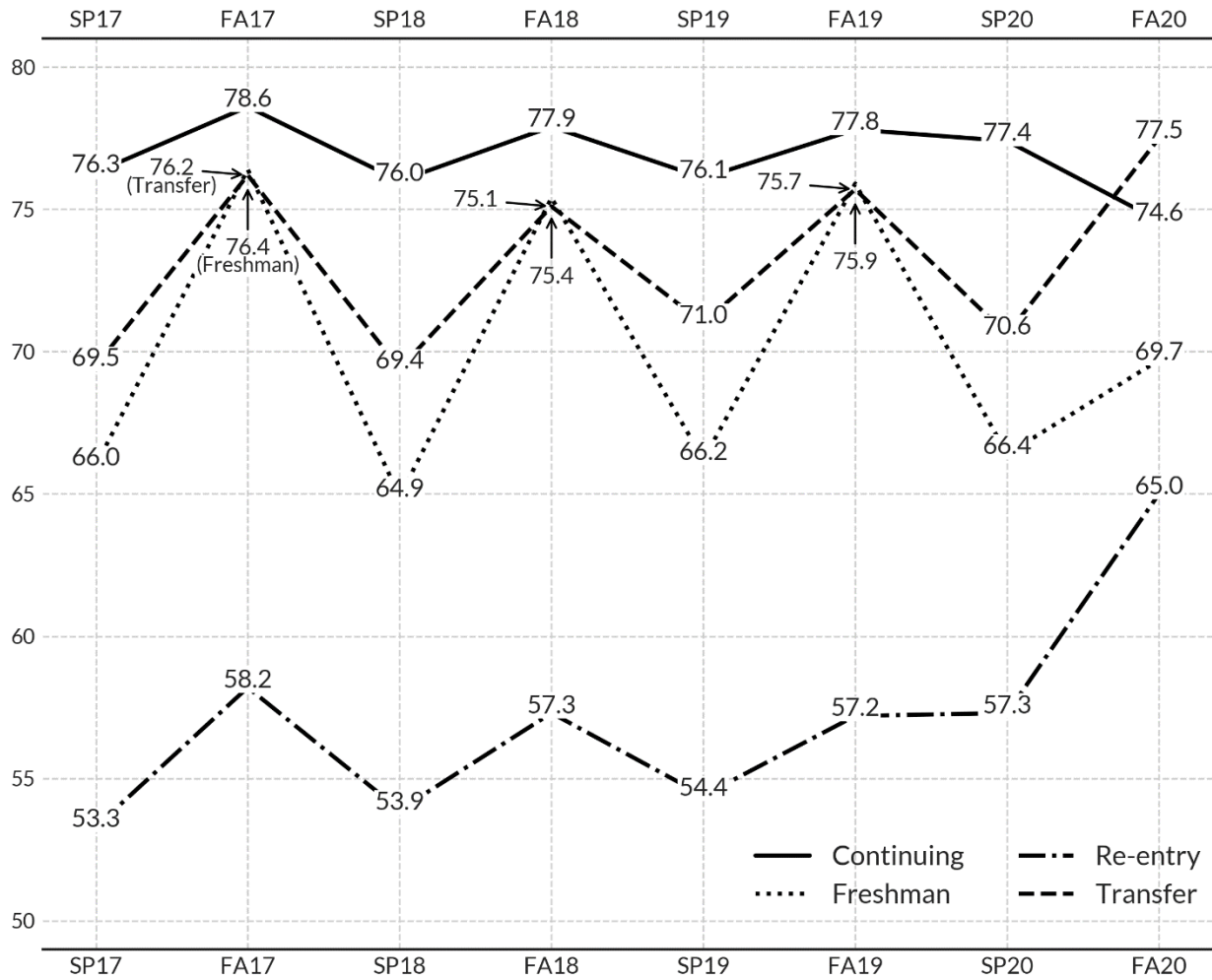
Due to COVID or concerns about getting it	41%
Caring for someone with COVID	3%
Caring for others whose care disrupted	12%
Institution changed content or format of classes	26%
Changes to financial aid	14%
Changes in campus life	8%
Uncertainty about how classes might change	28%
Not able to pay for classes because of income	42%

Note: respondents could choose multiple reasons. Source: author's analysis of US Census Pulse Household Survey (Public Use File Week 13 to 27).

Figure 1. Retention Rate (%) of Degree-seeking Students at CUNY

Note: The data sample used in the graph above only contains adult students age 18 or older at CUNY.

Figure 2. Retention Rate (%) of Associate Degree-seeking Students at CUNY



Note: The data sample used in the graph above only contains adult students age 18 or older at CUNY