

Parental Resources and College Major Choice

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Abstract

This paper examines how unexpected increases in housing prices affect children's college major choices using a large survey of United States first-year undergraduates. Using three-digit zip code-level variation in the size of the structural break in house prices during the 2000s as an instrument for price changes, we find that house price increases induce students to choose higher-paying majors. These effects are concentrated among students from low home-ownership areas, consistent with higher expected cost-of-living for these students. Students from high home-ownership areas respond to the wealth increase by enrolling in majors associated with lower-paying careers but potentially better amenities.

JEL codes: I23, I24, J24

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1. Introduction

Parental resources can play a large role in influencing the labor market decisions of their children. Beyond directly investing in their children’s human capital (e.g., Caucutt and Lochner, 2020), parents can informally insure children against future labor market shocks. Parents might use their assets to help children weather adverse shocks (Boar, 2021; Kaila, Nix, and Riukula, 2021) or finance large asset purchases (Fagereng, Mogstad, and Rønning, 2021). If children are aware that their parents can provide a safety net, it might affect their decisions about what to study in college or what occupations to pursue. Given that financial constraints can prevent individuals from pursuing low-paying but rewarding jobs (Coffman et al., 2019; Luo and Mongey, 2019), more generous informal safety nets might push children to prioritize non-monetary factors in their career decisions, or choose occupations associated with greater earnings risk.

While previous work has studied how parental wealth plays an important role in whether a student attends college or the types of institutions that they attend (Lovenheim, 2011; Lovenheim and Reynolds, 2013), there is limited causal evidence on the role of parental wealth in the *types* of human capital that children invest in. While we have descriptive evidence that children from rich backgrounds are more likely to work in occupations with high non-pecuniary qualities and take more labor market risks (Ma, 2009; Berg and Hebous, 2021; Boar and Lashkari, 2021; Haeck and Laliberté, 2025), we have little causal evidence.¹ Given the large variation in the returns to field of study, understanding the role that parental resources play in sorting across fields of study could have important implications for labor market inequality (e.g., Altonji, Blom, and Meghir, 2012; Kirkeboen, Leuven, and Mogstad, 2016; Bleemer and Mehta, 2022; Campos et al., 2026; Imberman et al., 2026).

In this paper, we study how unexpected increases in housing prices affect children’s college major choices. We do this by combining spatial variation in housing demand growth with a large survey of first-year undergraduate students: the Higher Education Research Institute’s “The Freshman Survey” (UCLA Higher Education Research Institute, 2008).² This survey, which has rarely been used in economics (e.g., Bradley, 2012), crucially provides information on college majors and home zip codes for over 250,000 students

¹Most of the descriptive evidence is from the United States, where parental safety nets are likely important given that the government provides relatively less insurance than other similar countries (Pfeffer and Hällsten, 2012).

²The Higher Education Research Institute also runs a Senior Survey, but linking it to the Freshman Survey would decrease our sample size to one-tenth of the Freshman Survey. Due to this data limitation we only use the Freshman Survey in this paper.

each year. We focus on the United States' housing boom era between 2000 and 2006, when speculative forces created large differences in house price increases across the US. Following Charles, Hurst, and Notowidigdo (2018), we use the size of the structural break in house prices in an area as an instrument for house price changes. We construct structural breaks using a finer level of geographic disaggregation than the original paper to incorporate students from rural areas in our analysis. We use this instrumental variable strategy in a difference-in-difference framework, comparing the change in major choice between 2000 and 2006 for students from three-digit zip codes (ZIP3) with smaller versus larger house price growth.

Despite the consensus that speculative motivation was the primary driver of house price increases (Shiller, 2007; Burnside, Eichenbaum, and Rebelo, 2016), we conduct additional exercises to assess whether the size of the structural break in house prices is a valid instrument. First, we limit our analysis sample to students entering four-year colleges, since prior research finds that the housing boom reduced enrollment at two-year colleges but not at four-year colleges (Charles, Hurst, and Notowidigdo, 2018). We show evidence that our housing boom instrument is not correlated with compositional changes in our sample of students entering four-year colleges. Second, we conduct a test in the spirit of assessing pre-trends and rule out that housing bubbles systematically arose in areas where students typically choose particular majors.

We characterize the life cycle earning profile of each college major using the 2009-2019 waves of the American Community Survey. We first run a Mincer regression to quantify individual earnings which cannot be explained by observable characteristics. We use the resulting residual to characterize the earnings profile of a major in three ways. First, we calculate how average residualized earnings evolve over the life-cycle by college major, which we interpret as the earning power of a given major. Then, for each college major we calculate the fraction of workers that end up in the top and bottom third of the age-specific distribution of residualized earnings. We interpret each of these measures as the expected probability of earning a wage in the top and bottom third of the age-specific earnings distribution. We use these three measures to quantify how rising house prices affected students' preferences for different earning profiles that different majors provide.

Overall, we find that a one standard deviation increase in ZIP3-level home prices increases the average annual earnings associated with a student's major at different parts of the life cycle by \$197 (age 31-35), \$342 (age 36-40), and \$402 (over age 40). Compared to the pre-boom averages, these estimates represent an increase of 24.3% (age 31-35), 27.4% (age 36-40), and 26.7% (over age 40). We then study whether these estimates differ by the

likelihood of parental homeownership, a key factor in whether a house price increase translates to an increase in parental wealth. Students whose parents do not own homes would face the prospect of cost of living increases associated with housing prices while students whose parents own homes would also face the increased informal insurance value of an increase in parental housing wealth.

We find that unexpected house price increases induce students whose parents are very likely to own homes (as proxied by the rate of homeownership in their zip code) to choose majors associated with lower earnings and lower likelihood of ending up in the top third of the earnings distribution.³ For these students, a one-standard-deviation growth in home prices changed the annual earnings associated with their majors by $-\$125$ (or 14.3% of pre-boom average) between age 31-35, $-\$87$ (or 6.7%) between age 36-40, and $-\$83$ (or 5.3%) over age 40. In contrast, we find that students whose parents are unlikely to own homes choose higher-paying majors that would place them in the top third of the earnings distribution in response to rising house prices. For these students, a one-standard-deviation growth in home prices increases the annual earnings associated with their majors by $\$531$ (or 61.6% of pre-boom average) between age 31-35, $\$832$ (or 62.4%) between age 36-40, and $\$945$ (or 62.2%) over age 40.

We then examine how these effects differ by race and gender. We show that the overall direction of responses of female and male students are similar, but female students living in high-homeownership areas are more likely to switch to lower-paying majors. We also document that increases in house prices have different effects on the major choices of White and non-White students. Overall, White students tend to slightly increase their enrollment in higher-paying majors when house prices increase, but the change in their earnings is not statistically different from zero. Meanwhile, non-White students switch to majors that increase their earnings throughout their whole life cycle. We then stratify White and non-White students by the likelihood of parental homeownership. White and non-White students living in low-homeownership areas respond similarly to a house price increase by choosing majors associated with greater earnings. However, we document large racial differences in responses to rising house prices among students living in high-homeownership areas: while non-White students switch to majors with higher career earnings, White students increase their enrollment in lower-paying majors.

This paper adds to the large literature studying how parental resources affect children's outcomes. This literature has primarily focused on understanding how shocks to parental

³Since the The Freshman Survey does not include information on parental homeownership, we proxy for it using students' five-digit ZIP (ZIP5) codes' homeownership rates.

resources, for example through job loss (Rege, Telle, and Votruba, 2011; Hilger, 2016), or changes in labor market conditions (Butikofer, Dalla Zuanna, and Salvanes, 2018; Stuart, 2022), affect the education and labor market outcomes of children.⁴ Other than recent work showing how adverse shocks to parental resources inform children’s occupational choices (Riukula and Huttunen, 2019) and how parents use their social networks to help their children get desirable jobs (Staiger, 2023), we have limited causal evidence on how parental resources shape the choices children make about what to study or where to work.

This paper makes several contributions. First, we provide novel evidence of the causal impacts of parental wealth shocks on college major choice. We find that students whose parents likely own a home are induced to choose majors with lower career earnings and potentially better amenities. Meanwhile, students whose parents are unlikely to own a home are induced to choose majors with greater career earnings. These patterns are consistent with an unexpected house price increase yielding a more generous parental safety net for children of homeowners while generating a sharp increase in the future cost of living that children of non-homeowners expect. These findings are in line with increases in parental wealth creating a more generous parental safety net, which children of homeowners use as a hedge against future expenses or adverse shocks. We also add to the literature studying how students make decisions about what to study. Prior work has documented how students consider employment probabilities, future wages, and labor market risk when making such decisions (Altonji, Arcidiacono, and Maurel, 2016; Blom, Cadena, and Keys, 2021; Hampole, 2022). Our results demonstrate how the potential insurance value of family resources can influence college major choice decisions.

The remainder of this paper is organized as follows. In section 2, we illustrate how increases in house prices affect college major choice through two channels: increased parental wealth and rising housing-cost expectations. In section 3, we summarize the data we use and how we construct the average earning characteristics of majors. In section 4, we discuss our empirical methodology and the calculation and validity of our structural break instrument. In section 5, we present our empirical findings and summarize how house price changes affect students differently by race, gender, and the likelihood of parental homeownership. Finally, section 6 concludes by summarizing our results.

⁴See Page, Stevens, and Lindo (2007) and Page (2024) for reviews.

2. Connection between home prices and major choice

In this section, we provide a conceptual framework for how students' college major choices could be affected by changes in the value of their family home and how housing price changes could affect students whose families do not own homes. We also discuss how these effects vary by the level of income and wealth a family possesses. Throughout this section, we consider how changes in housing prices shape students' beliefs about future opportunities and risks, and how these beliefs influence their major choices. In doing so, we abstract away from how other individuals in students' lives, e.g., parents and peers, influence college major choice (see Patnaik, Wiswall, and Zafar (2020) for a review).

Increasing home prices could directly influence college major choice through two channels: altering parental housing wealth, which we refer to as the *wealth channel*, and raising expectations of future housing costs, which we call the *price channel*. First, increasing parental wealth could allow students to choose majors with lower expected earnings, as it enables parents to provide financial help for large future expenses. Thus, we expect that students whose parents experience a larger increase in their wealth would be more likely to choose college majors with lower earnings profiles than students whose parents experienced a modest increase in their wealth.⁵ Second, experiencing a larger increase in house prices might raise expectations for future housing expenses and living costs, which could motivate students to choose majors with higher earning potential. If this is the case, increasing house prices might prompt students to consider higher-paying or less volatile career paths, which prepare them for future affordability challenges.

Thus, we expect to find different behavioral responses based on whether a student's parents own a home. Students from families that do not own a home experience only the negative consequences of house price increases. Rising house prices affect these students' major choice only through the price channel by increasing their expectations of future expenses and potentially increasing current expenses (e.g., rent, through increased cost of living). Because of these changes, we expect that students whose parents do not own homes might switch to higher-paying majors if they experience increasing house prices, which better prepares them to cover increased current and future housing costs. In contrast, students whose parents own a home experience both the wealth and price channels. We

⁵Note that the channels we discuss below are still relevant if we think that parents, who may be better informed about the labor market outcomes associated with each college major, dominate students' choices. For instance, even if a student's preferred major is not aligned with the major that the student's parents would like her to choose, increases in housing wealth may shape parental expectations and mitigate the parents' will to influence their child's major choice.

should expect that the price channel will become less dominant as parental income and wealth increase. Students from more well-off families can expect more parental financial help as parental housing wealth increases, which lessens the importance of choosing a major with a more lucrative career-earning path. As a result, for these students, the wealth effect could dominate the price effect, leading to switches to lower-paying majors as house prices rise.

This discussion highlights that the overall effect of house price changes on college major choice is ambiguous and will depend on which of these two channels is dominant. Which channel is dominant will likely depend on whether students' parents own homes and their general wealth. In our empirical analysis, we assess how the effect sizes vary by parents' likely home ownership status.

3. Data on college major choice

3.1. CIRP Freshman Survey

Our primary source of data on college students is The Freshman Survey (TFS) administered by the Cooperative Institutional Research Program (CIRP) and available through the Higher Education Research Institute (HERI) at UCLA (UCLA Higher Education Research Institute, 2008). The survey is administered to first-year students before classes begin. During the early 2000s, TFS collected between 265,000 and 290,000 unique responses annually from college freshmen at more than 1,000 institutions in the United States. The survey collects detailed information on family background, academic preparedness, college expectations, and demographics. TFS is the largest nationally representative survey that includes information on the key outcome of our interest, the intended college majors of freshmen students. The survey lists a broad range of majors (up to 84) and asks students to select only one option that indicates their probable field of study.⁶

The primary data in this paper comprise the responses of freshmen from the 1999-2001 and 2005-2007 waves of the study, which includes the start and peak years (2000 and 2006, respectively) of the housing boom before the 2008 financial crisis. We exclude the 2002-2004 waves of TFS because, during these years, housing booms occurred at different times across areas. We narrow our sample to four-year institutions that participated in all our

⁶Even if undecided is included as an option, in our sample, only 7.5% of students are undecided on their intended major.

waves, ensuring that our results are not affected by the selection of colleges for the TFS.⁷

TABLE 1. Student characteristics in the 1999-2001 and 2005-2007 waves of TFS

Variable	Pre waves	Post waves	Difference
Real HH Income (2000 USD)	72,948.273 (55,399.711)	75,112.844 (60,739.992)	2,164.569*** (672.329)
Female	0.545 (0.498)	0.559 (0.496)	0.014*** (0.003)
Asian (pct of freshmen)	0.079 (0.269)	0.085 (0.279)	0.007* (0.004)
Black (pct of freshmen)	0.077 (0.267)	0.083 (0.276)	0.006 (0.004)
Hispanic (pct of freshmen)	0.066 (0.247)	0.063 (0.243)	-0.003 (0.007)
White (pct of freshmen)	0.710 (0.454)	0.684 (0.465)	-0.026*** (0.010)
College graduate: Father	0.533 (0.499)	0.543 (0.498)	0.010* (0.006)
College graduate: Mother	0.497 (0.500)	0.542 (0.498)	0.045*** (0.005)
First-generation student	0.201 (0.401)	0.189 (0.392)	-0.012*** (0.004)
Observations	320,364	336,315	656,679

Note: Robust standard errors clustered at ZIP3-level.

Table 1 presents the main characteristics of the student body in the 1999-2001 and 2005-2007 waves, which we refer to as the pre- and post-boom waves, respectively. Compared to students in the pre-boom waves, post-boom students have higher real family income, are more likely to have college-educated parents, and are more likely to be female and non-White. While this suggests that students responding to the survey are different across waves, these differences are generally very small as a share of the pre-wave mean (except for Asian and having a mother who is a college graduate). However, these differences do not pose a threat to our strategy unless these pre/post changes vary by the size of the housing boom in each area, which we discuss further below.

⁷As discussed below, our empirical strategy takes advantage of variation across geographies in the size of the housing boom. To limit the potential for differential selection into college enrollment due to the housing boom, we limit to students at four-year institutions, which did not see drastic enrolment changes driven by the boom (Charles, Hurst, and Notowidigdo, 2018). We also conduct a number of validation exercises to ensure that this is the case in our data as well.

3.2. Characterizing the earning profiles of college majors

We measure the future earnings potential of college majors using the 2009-2019 waves of the American Community Survey (ACS), which include individual-level information on wages and college majors.⁸ Similar to Hampole (2022), we quantify the earning potential of college majors using the following Mincer regression, estimated on the sample of college-graduates:

$$(1) \quad wage_{i,t} = \beta_0 + \beta_1 \times age_{i,t} + \beta_2 \times age_{i,t}^2 + \beta_3 \times race_{i,t} + \beta_4 \times year_t + \varepsilon_{i,t}$$

where *race* is the ACS' simplified race/ethnicity variable,⁹ and *year* is a year fixed-effect. In this regression, our main variable of interest is $\widehat{\varepsilon}_{i,t}$, the predicted residual, which quantifies the earnings that cannot be explained by life-cycle patterns or racial differences in labor market trajectories.

We group these estimated residual earnings by college majors and age bins, and calculate the three main sets of outcome variables (see Table A1). First, we calculate average residual earnings by age bins, which tells us whether graduates of a given college major earn more or less than the average college-graduated worker in that age bin. We then calculate the fraction of graduates of a given college major in the bottom and top thirds of the age-specific earnings distribution. We interpret these fractions as the probability of getting a job after graduation that puts the student in the bottom or top third of the earnings distribution. These variables let us incorporate within-major heterogeneity in incomes, which the average residual income cannot capture. Finally, we merge this information to our main data by aggregating up intended college majors in the TFS into the 2-digit categorization of the Classification of Instructional Programs (CIP) system.

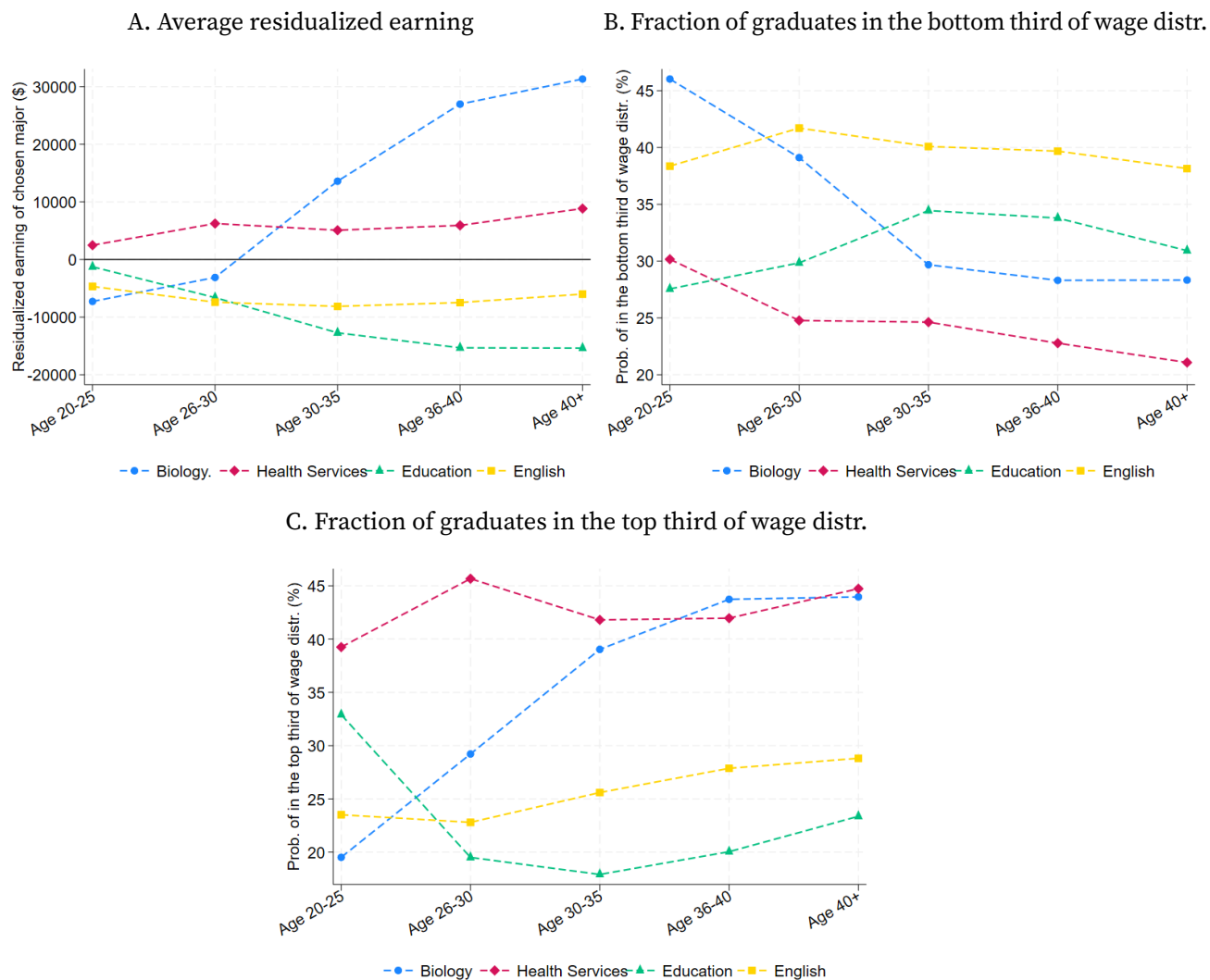
In Figure 1, we illustrate the earning profiles of four college majors, which are representative of the available college majors. First, in Panel A, Biology, chosen by most future medical doctors, is representative of majors that offer high future earnings but require a substantial initial investment. Biology offers a relatively low starting income with a steep wage increase over time; in fact, Biology majors earned the most among college graduates in our over-40 age bin. However, due to low starting salaries and the high cost of post-bachelor's education, many Biology majors must make a substantial upfront financial

⁸We ideally would use information from ACS waves administered before the TFS survey waves in our sample to closely match the TFS survey participants' information set. Unfortunately, ACS waves from before 2009 do not ask respondents about their college major.

⁹The ACS' simplified race/ethnicity variable distinguishes the following race/ethnicity groups: White, Black / African American, American Indian / Alaska native, Asian / Pacific Islander, and Hispanic / Latino.

investment in tuition and foregone income, which is easier for students from wealthy families. College graduates in Physical Sciences and Social Sciences had a similar earnings profile, with low starting salaries and steep wage growth over the life cycle (see Table A1).

FIGURE 1. Earning profile of different college majors



Notes: Own calculation, based on ACS.

Second, unlike Biology, the Education major offers relatively well-paid job opportunities without substantial financial investment in early career, but at the expense of slower earnings growth in later years. Graduates with Education degrees earn close to the average wage in their early career, but their wages fall behind the average wage over the life-cycle.¹⁰ Based on Table A1, most majors (such as Criminal Justice and Fire Protection,

¹⁰Note that decreasing residual earning ($\widehat{\varepsilon}_{i,t}$) does not imply decreasing nominal earnings as well, as the

Environmental and Natural Resources, Liberal Arts and Humanities, Fine Arts, among others) provide similar earnings profiles. Third, the earning profile of Health Services majors (primarily nurses and similar non-physician health-care workers) is representative of that of majors that lead to well-compensated jobs. The average earnings of graduates in Health Services majors are above the average in every age bin, but unlike in Biology, there is no steep increase in earnings over the life-cycle. Graduates of Business, Engineering, or Computer and Information Sciences majors have similar earning profiles (see Table A1). Finally, the English major is illustrative of a career path that does not provide above-average wages, but for which residual earnings do not decline over the life cycle; History and Linguistics have similar earning profiles.

As Panels B and C show, there is significant heterogeneity in incomes within each college major that the average residual cannot capture by itself. These panels depict the fraction of graduates of a given major that end up in the bottom/top third of the age-specific income distribution, which we interpret as the likelihood of earning an income in these parts of the income distribution after graduation. Although the average earnings is the highest among college graduates in the Biology major, the high average masks significant heterogeneity: as Panel B shows, almost 30 percent of them remain in the bottom third of the income distribution even after age 40. Based on Panel B and C, graduating in Health Services majors leads to more stable life cycle earning than Biology: Health Service graduates not only have lower probability of being in the bottom third of the income distribution, their share in the top third is almost always higher than the share of Biology graduates. As a result, we characterize the Biology major as riskier than Health Services: because of the high earnings at the very top of the income distribution, the Biology major leads to higher average earnings, but with a higher probability of falling into the bottom part of the income distribution. We can see similar differences among graduates in English and Education majors: the average residual earnings of English graduates is higher than those of Education graduates (Panel A of Figure 1), mainly because English graduates have a higher share in the top third of the income distribution (Panel C). At the same time, a higher fraction of English graduates are in the bottom third of the income distribution.

This heterogeneity is a key feature of college major choice. All else equal, a student aiming for higher expected life cycle earnings would likely choose an English major over Education, while another student with a strong preference to avoid the bottom of the income distribution would prefer Education over English. Similarly, Health Services majors could be a better choice over Biology for students looking for a health care-related

increasing earnings over the life-cycle is captured in our Mincer regression by the age and age^2 terms.

job with a well-paid and stable income profile, while Biology could be optimal for those who, besides the potentially higher debt from graduate school, could afford the higher income fluctuations and higher probability of ending up in the bottom of the earning distribution to maximize their expected earnings. These preferences are likely linked to parental income and wealth, which could mitigate the effects of negative earnings outcomes. For instance, students from low-income families are more likely to choose majors with lower income volatility (Patnaik, Wiswall, and Zafar, 2020; Hampole, 2022). In this paper, we study how these preferences for future income profiles change as house prices, and through them, future expected expenses (*price effect*) and parental wealth (*wealth effect*) increase.

4. Empirical methodology and the housing boom instrument

In this section, we describe the empirical methodology we use to establish the causal effect of increases in house prices on college major choices. Using an instrumental variable framework, we study how the housing price boom preceding the 2008 financial crisis influenced the college major choices of first-year students. Our empirical approach builds on the consensus of the housing literature, which concludes that house price changes among metropolitan areas (MSAs) between 2000 and 2006 were driven by speculative forces rather than fundamental economic changes (e.g., Shiller, 2007; Burnside, Eichenbaum, and Rebelo, 2016; Charles, Hurst, and Notowidigdo, 2018).

We use structural breaks in home price increases created by housing bubbles to instrument for increases in house prices, following Charles, Hurst, and Notowidigdo (2018). These structural breaks would be valid instruments if they were unrelated to the economic forces influencing freshmen students' college major choices. We assess the validity of such an instrument through a battery of tests below.

We define our instrument at the three-digit zip code (ZIP3) level, rather than at the MSA level (as in Charles, Hurst, and Notowidigdo (2018)), which has two advantages. First, there are more than three times as many ZIP3 areas (878) as MSAs (256) in our sample, which yields greater variation in house price increases. Second, by using a ZIP3-level instrument, our data also include rural areas outside MSAs. This lets us draw more generalizable conclusions about the relationship between house price increases and college major choice, as we do not need to limit our analyses to students residing in urban areas.

4.1. Methodology

We measure the house price change in a ZIP3 area c with ΔP_c , which is the difference between the 2006 and 2000 log annual FHFA house price index. For ease of interpretation, we standardize ΔP_c using the population-weighted mean and standard deviation of ZIP3-level home price changes; we denote the standardized house price increase as $\widehat{\Delta P}_c$. We test the connection between $Y_{i,c,t}$, the characteristic of the chosen major of student i from ZIP3 area c at period t , and the standardized house price increase $\widehat{\Delta P}_c$ in the following difference-in-difference framework:

$$(2) \quad Y_{i,c,t} = \alpha + \beta_1 \mathbf{1}(t = post) + \beta_2 \widehat{\Delta P}_c + \eta \mathbf{1}(t = post) \times \widehat{\Delta P}_c + \Gamma_1 \mathbf{X}_{i,t} + \Gamma_2 \mathbf{X}_{c,2000} + \varepsilon_{i,c,t}$$

in which the vectors of $\mathbf{X}_{i,t}$ and $\mathbf{X}_{c,2000}$ represent controls for individual and ZIP3-level characteristics. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. The vector of ZIP3-level controls includes the log of population, the share of college-educated adults aged 25-64, the share of foreign-born residents, and the share of women in the labor force, all measured in 2000. Our regressions are weighted using TFS's student weights, and we cluster robust standard errors at the ZIP3 level. The main variable of our interest is η , which represents how a one-standard-deviation increase in ZIP3-level house prices affects different characteristics of the chosen college major.

We also implement a second strategy to unpack the overall effects of a sharp increase in house prices. In section 2, we discussed how the effects of a sharp housing price increase could differ by whether students' families actually owned homes or not. Unlike Lovenheim (2011) and Lovenheim and Reynolds (2013), our main dataset provides limited information on students' families' economic conditions and lacks data on parental homeownership. Given this data limitation, we proxy parental homeownership with the homeownership rate of students' five-digit ZIP codes (ZIP5). This approximation assumes that students' parents are more likely to be homeowners in areas with high rates of homeownership than in those with low rates. We then quantify whether our baseline results differ across zip codes with low and high homeownership rates, to understand how parental homeownership affects major choices in the face of rising house prices. We test the statistical significance of differences in the estimated effects between low and high homeownership areas in the following triple-difference specification:

$$\begin{aligned}
(3) \quad Y_{i,c,t,z} = & \alpha + \beta_1 \mathbf{1}(t = post) + \beta_2 \widehat{\Delta P}_c + \beta_3 HH_z \\
& + \kappa_1 \mathbf{1}(t = post) \times \widehat{\Delta P}_c + \kappa_2 \mathbf{1}(t = post) \times HH_z + \kappa_3 \widehat{\Delta P}_c \times HH_z \\
& + \mu \mathbf{1}(t = post) \times \widehat{\Delta P}_c \times HH_z \\
& + \Gamma_1 \mathbf{X}_i + \Gamma_2 \mathbf{X}_{c,2000} + \varepsilon_{i,c,t,z}
\end{aligned}$$

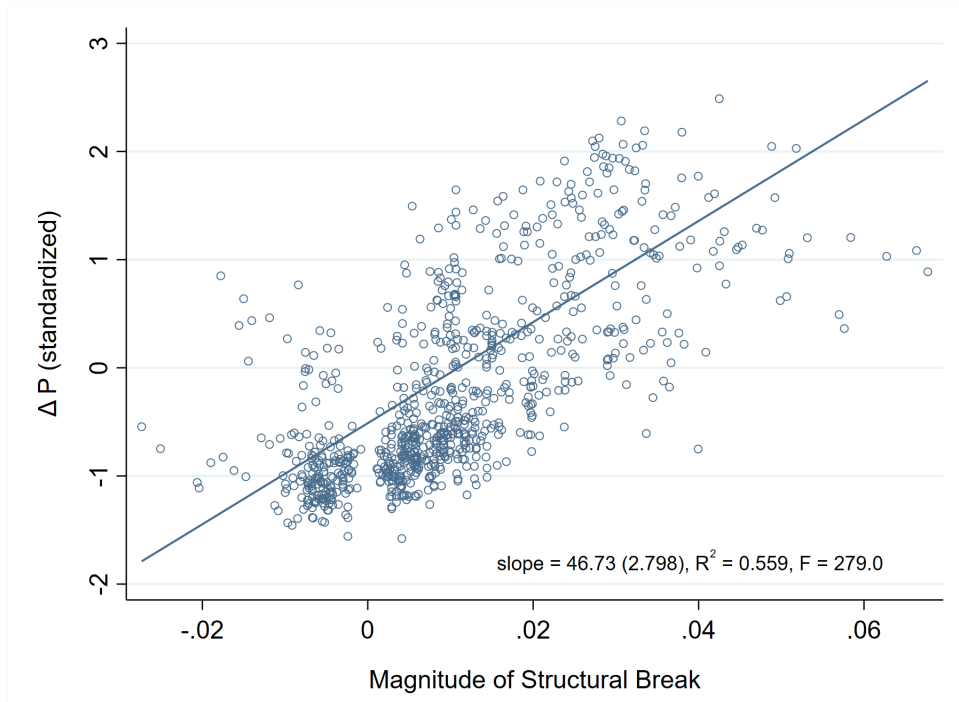
in which z represents the zip code of student i 's permanent address, $HH_{i,z}$ is a dummy variable indicating high-homeownership zip codes, while the vectors of \mathbf{X}_i and $\mathbf{X}_{c,2000}$ contain the same set of controls as our difference-in-difference model. In our analysis, HH_z equals 1 if a student's ZIP5 code is among the top 25% of ZIP5 codes by homeownership rate, and 0 if it is in the bottom 25% of ZIP5 codes.¹¹ In this way, we compare the effect of house price increases on students with the lowest and highest likelihood of parental homeownership. The primary variable of interest in the triple-diff specification is μ , which indicates how a one-standard-deviation increase in ZIP3-level house prices affects the college major choice among students residing in high-homeownership ZIP5 codes compared to those living in low-homeownership zip codes. Table A2 in the appendix summarizes how student characteristics differ among freshmen living in low and high-homeownership areas. On average, students living in low-homeownership areas are less likely to be White, have lower family income, and, in line with Patnaik, Wiswall, and Zafar (2020) and Imberman et al. (2026), choose college majors with higher life-cycle earning profile.

4.2. Housing bubble instrument

We follow Charles, Hurst, and Notowidigdo (2018) and instrument our standardized ZIP3-level house price increase variable $\widehat{\Delta P}_c$ with the magnitude of the structural break in ZIP3-level house prices. We interpret these structural breaks as housing bubbles, and our identification strategy builds on the assumption that the magnitude of these bubbles across ZIP3s was unrelated to changes in fundamentals that determine house prices. Our assumption is supported by the housing literature, which finds that speculative motivation was the primary driver of house price increases (Shiller, 2007; Burnside, Eichenbaum, and Rebelo, 2016; Charles, Hurst, and Notowidigdo, 2018).

¹¹The housing unit-weighted cutoffs of the bottom and top 25% of zip codes by homeownership rate are 57.4% and 78.9%; Table A2 shows that the average homeownership rates in these areas are 42.6% and 85.8%, respectively.

FIGURE 2. Validity of housing break instrument: Correlation with house price change



Note: Each dot depicts a ZIP3 area; the vertical axis represents the increase in log house price index between 2000 and 2006.

We quantify the structural break parameter λ_c of each ZIP3 area by estimating the following regression using quarterly house price index data between 2000:I and 2005:IV:

$$(4) \quad P_c(t) = \omega_c + \tau_c t + \lambda_c (t - t_c^*) 1\{t > t_c^*\}$$

where $P_c(t)$ is the log of the quarterly FHFA house price index at ZIP3 area c . Variable t_c^* is the assumed quarter in which the structural break took place at ZIP3 area c , while t and $(t - t_c^*)$ are ZIP3-specific linear time trends before and after the structural break. To have sufficient observations before and after the structural break, we focus on the interval between 2001:I and 2005:I. We estimate the above regression with OLS for each ZIP3 separately across different structural break times t^* , and select the specification that maximizes the model's fit to the data, measured by R^2 . Finally, we interpret the estimated structural break parameter $\hat{\lambda}_c$ as the magnitude of the housing bubble before the 2008 financial crisis in ZIP3 c , and we use it as an instrument for our standardized ZIP3-level house price increase variable $\widehat{\Delta P}_c$.

Our identification strategy requires that (1) our housing break instrument has a strong correlation with house price increases, and (2) our instrument affects college major choice only through house price changes. Figure 2 depicts that there is a strong positive correla-

TABLE 2. Correlation between housing bubble instrument and changes in ZIP3-level outcome variables

	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
<i>Panel A: Change in average residualized earning (USD)</i>					
Structural break instrument (Sample: 1990s)	-1160.732 (2701.676)	866.850 (3856.206)	5971.136 (5408.649)	10272.290 (7388.475)	11815.713 (8467.025)
Observations	878	878	878	878	878
Structural break instrument (Sample: 2000s)	1304.656 (1978.545)	5519.715** (2380.050)	13519.396*** (3795.769)	19217.586*** (5768.642)	21006.211*** (6735.831)
Observations	879	879	879	879	879
<i>Panel B: Change in the prob. of being in the bottom third of income dist. (pp)</i>					
Structural break instrument (Sample: 1990s)	4.385 (3.153)	0.268 (3.938)	-4.052 (4.060)	-5.402 (4.388)	-4.440 (4.056)
Observations	878	878	878	878	878
Structural break instrument (Sample: 2000s)	1.366 (2.313)	-1.945 (2.313)	-5.386** (2.435)	-4.929* (2.637)	-2.507 (2.492)
Observations	879	879	879	879	879
<i>Panel C: Change in the prob. of being in the top third of income dist. (pp)</i>					
Structural break instrument (Sample: 1990s)	-3.220 (4.789)	2.425 (6.170)	4.924 (5.325)	6.349 (4.983)	6.340 (4.857)
Observations	878	878	878	878	878
Structural break instrument (Sample: 2000s)	2.163 (3.523)	7.514* (3.925)	10.121*** (3.405)	10.026*** (3.383)	8.216** (3.317)
Observations	879	879	879	879	879

Note: Each observation is a ZIP3 area.

tion between our structural break instrument λ_c and our standardized house price increase variable $\widehat{\Delta P}_c$. Regressing our structural break instrument on house price increases yields an F-statistic exceeding 270, suggesting that the instrument is relevant. Our second assumption requires that housing bubbles did not emerge in ZIP3s in which, for unknown underlying economic reasons, students increasingly pursue higher-paying majors. We validate this assumption by examining the relationship between our structural break parameter and the change in college major choice in the early 1990s.

To analyze the existence of this pre-trend, we test whether our structural break instrument is correlated with changes in our outcome variables during the 1990s, a decade before the housing price boom. First, we restrict our TFS dataset to students entering college in waves 1989-91 or 1995-97, at institutions with observations in each year during this period. Each of these periods corresponds to a 10-year lag relative to the pre-boom (1999-2001)

and post-boom (2005-2007) periods in our main analysis. Then, using the student survey weights, we first calculate ZIP3-level averages of earnings characteristics for college majors and then their changes between the pre- and post-periods. Finally, we test the correlation with the following reduced form regression

$$\Delta \bar{Y}_c = \beta_0 + \beta_1 \lambda_c + \epsilon$$

where $\Delta \bar{Y}_c$ is the change in the ZIP3-level average of our outcome variables between the 1990's "pre-boom" and "post-boom" periods, and λ_c is our housing bubble instrument. Finding significant β_1 coefficients would undermine the validity of our instrument, as, in theory, a persistent trend in changes in college major choice across different ZIP3 areas could have created different levels of housing bubbles.

Our reduced form estimates confirm the absence of this potential channel. As Table 2 shows, our instrument is not significantly correlated with either of our ZIP3-level aggregates, meaning that the emergence of housing bubbles was not related to long-term changes in college major choices. To strengthen this conclusion, in Table 2 we also show that our instrument is correlated with changes in college major choice between 1999-2001 and 2005-2007, the period in which the housing boom took place. As our housing bubble instrument should affect our outcome variables through changes in house prices in the 2000s, it is reassuring that we find statistically significant correlations in most of these reduced form estimations.

4.3. College attendance and house price increase

Finally, before presenting our findings on the relationship between house price increases and college major choices, we provide evidence that enrollment in four-year colleges did not change with rising house prices during the 2000s' housing boom. Studying house price change and college enrollment, Charles, Hurst, and Notowidigdo (2018) finds that enrollment decreased in two-year institutions, but remained unchanged in four-year colleges as house prices increased. Due to this finding, we narrow our sample down to four-year institutions to rule out any selection into college education. Stable attendance in four-year institutions at this time ensures that our findings on college major choice were driven by changing preferences toward majors, which we are interested in, rather than by changing selection into college education with unchanged preferences toward majors. We demonstrate the absence of this extensive margin response by showing that student characteristics and ZIP3-level enrollment in our HERI data do not correlate with house

price changes.

TABLE 3. Composition of student body

	White	Female	HS GPA	First gen.	Age	Numb. of students
<i>Panel A: Change in student characteristics (Diff-in-Diff, 2SLS)</i>						
Housing Shock x Post	-0.016*	-0.002	-0.001	0.006	-0.012**	
	(0.009)	(0.004)	(0.007)	(0.005)	(0.005)	
CM	0.710	0.535	3.384	0.203	18.284	
Observations	292757	292757	292757	292757	292757	
<i>Panel B: Percent change in number of students at ZIP3-level (2SLS)</i>						
Housing Shock						0.445 (2.549)
Observations						867

Note: The unit of observation in Panel A is students, and in Panel B is ZIP3 areas. Robust standard errors are in parentheses, clustered at the ZIP3 level in Panel A. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

We examine whether average student characteristics and the number of students in ZIP3 areas changed in response to rising house prices in our TFS sample. Table 3 summarizes our results on student characteristics (Panel A) and the number of enrolled students at the ZIP3 Level (Panel B). Panel A shows the estimated interaction terms from our baseline difference-in-difference regressions (Equation 2) on different student characteristics, in which we instrumented house price changes with our structural break variable. We do not find significant point estimates on gender, high-school GPA, or first-generation status, while we find statistically significant, but economically less meaningful, effects on age and race. Based on our results, students living in ZIP3-areas with a standard deviation higher house price increases tend to be slightly younger (by 0.012 years, or by 4 days) and 1.6 p.p. less likely to be White. Based on our results, the average freshmen characteristics in our sample remain stable despite large differences in house price changes, suggesting that house price increases did not affect selection into 4-year college education, conditional on our ZIP3-level controls.

In addition to the unchanged student characteristics, Panel B of Table 3 provides a direct test of whether the housing increases differentially changed enrollment in 4-year colleges in our TFS survey data. We examine whether ZIP3-level growth in freshmen enrollment is correlated with house price changes by regressing the percent growth in the number of students in each ZIP area on house price changes (instrumented with the housing bubble instrument) and ZIP3-level controls. Our estimation results indicate no significant

relationship between changes in house prices and freshmen enrollment in 4-year colleges at the ZIP3-level. In summary, our empirical findings on the relationship between house price changes and college major choice are unlikely to be biased by changes in selection into college.

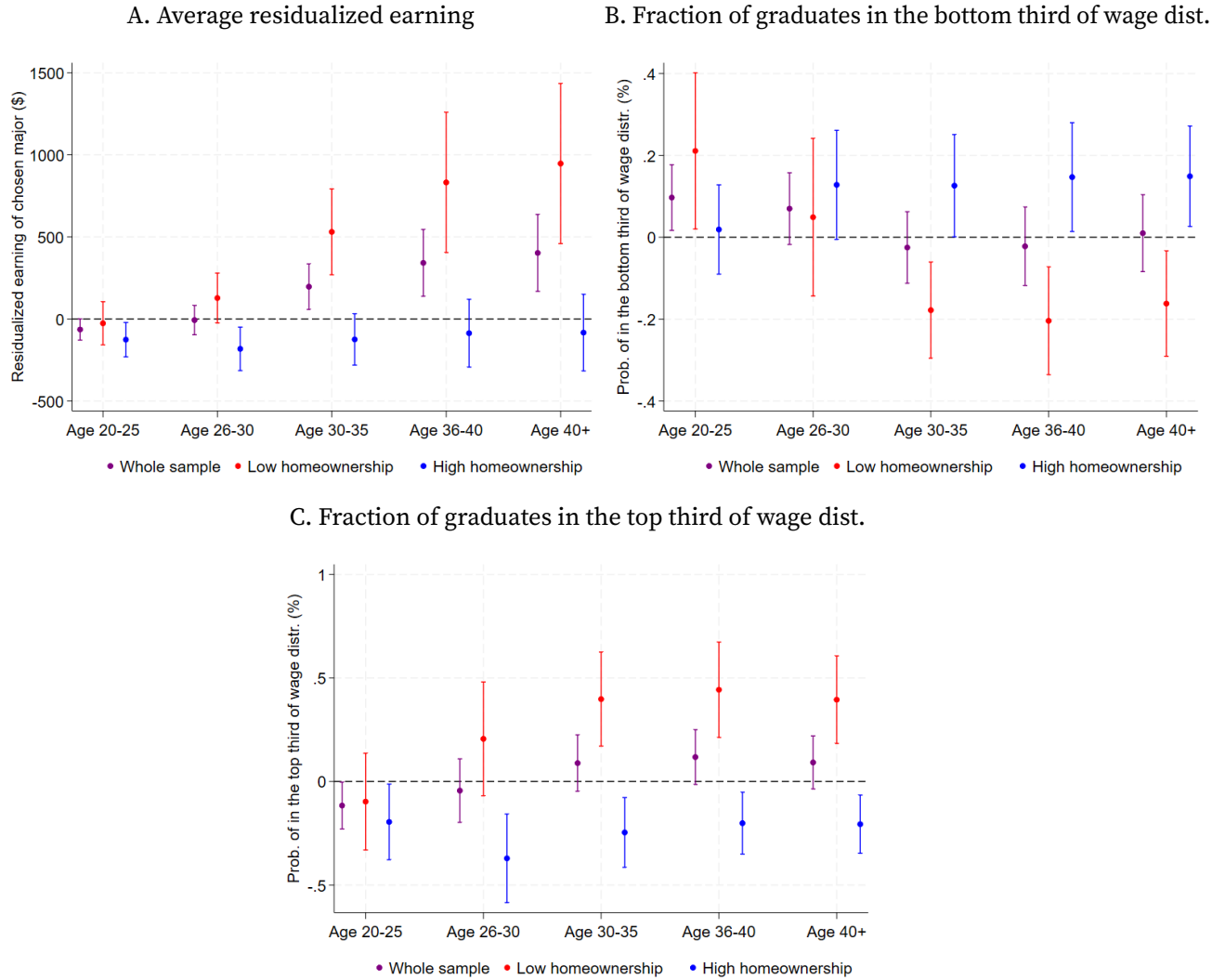
5. Results

In this section, we present our results on how an unexpected house price increase affects college major choice and the expected earnings profiles of first-year students. In the main text, we focus on the point estimate and its 95% confidence interval of the interaction terms of our difference-in-difference specification (η in Equation 2). The appendix contains all of our difference-in-difference and triple-difference estimation results in table format, as well as our estimated impacts on the probability of enrolling in each major category. First, we present treatment effect for all freshmen. We then describe the heterogeneity of our results by race and gender.

5.1. Impact of house price increases on all freshmen

Figure 3 presents how a standard deviation increase in ZIP3-level house prices affected future earning profiles (described in subsection 3.2) of freshmen through changes in college major choice. Panel A shows how changes in major choice affected average residualized earnings at different points of the life cycle. Similarly, Panels B and C present how changes in major choice affected the expected probability of being in the bottom or top third of the age-specific earnings distribution, respectively. To gain further insight into how parental homeownership (or higher socioeconomic status and parental wealth) influences our treatment effect, we present our estimation results for the whole sample (purple bars) and for students living in low- and high-homeownership areas (red and blue bars, respectively).

FIGURE 3. Estimated effect of home price increase



Notes: The graph depicts the estimated interaction term (μ) and its 95% confidence interval from our Diff-in-Diff specification (Equation 2). ZIP3-level controls include the log of population, the share of college-educated adults aged 25-64, the share of foreign-born, and the share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are clustered at the ZIP3 level.

As shown in the purple bars in Panel A, experiencing a larger house price increase motivates students to enroll in majors that, on average, provide slightly less income below age 26, but higher earnings over age 30. We find that a one-standard-deviation increase in ZIP3-level house prices raised the average residual earnings by \$197 (age 31-35), \$342 (age 36-40), and \$402 (over age 40). Compared to the pre-boom averages, these estimates represent an increase of 24.3% (age 31-35), 27.4% (age 36-40), and 26.7% (over age 40); see Table A3 for more details. Meanwhile, Panels B and C of Figure 3 show that experiencing a larger house price increase does not affect the probability of landing in the bottom or top

of the wage distribution through changing college major choice.

Meanwhile, estimates by our proxy of parental homeownership (the red and blue bars) in Figure 3 show that the aggregate estimates mask considerable heterogeneity. We find substantially larger treatment effects on students' expected future earnings in low-homeownership areas. Due to changes in students' choice of major, their average residualized earnings would increase by \$531 (or 61.6%) between age 31-35, \$832 (or 62.4%) between age 36-40, and \$945 (or 62.2%) over age 40. Changes in these students' college major choice also reduced their probability of having a job in the bottom third and increased their probability of having one in the top third of the income distribution after age 30 (Panels B and C). Our estimates also indicate that increases in house prices would reduce students' average residual earnings in high-homeownership areas, although these effects are not significant over the life cycle. Students from high-homeownership areas are also more likely to choose majors with a slightly higher probability of landing in the bottom third and a lower probability of landing in the top third of the income distribution.

Overall, we find that students living in low- and high-homeownership areas behave quite differently when house prices increase. Consistent with our expectations, as detailed in section 2, our empirical results show that students from low-homeownership areas select higher-paying majors when house prices rapidly increase. In contrast, students living in high-homeownership areas tend to choose majors that are more likely to place them at the bottom of the wage distribution and less likely to put them at the top. As highlighted in section 2, students living in high-homeownership areas are more likely to live in a home owned by their parents and rising house prices could theoretically provide students with a hedge against uncertain future income by increasing parental wealth. In other words, rising home prices could allow some of these students to pursue careers with lower earnings but potentially better non-pecuniary characteristics. In contrast, because their parents are less likely to own a home, house price increases do not provide this hedge for most students living in low-homeownership areas. For them, rising house prices only increase their expected future expenses, which, consistent with our empirical findings, motivates them to switch to higher-paying majors.

5.2. Heterogeneity by race and gender

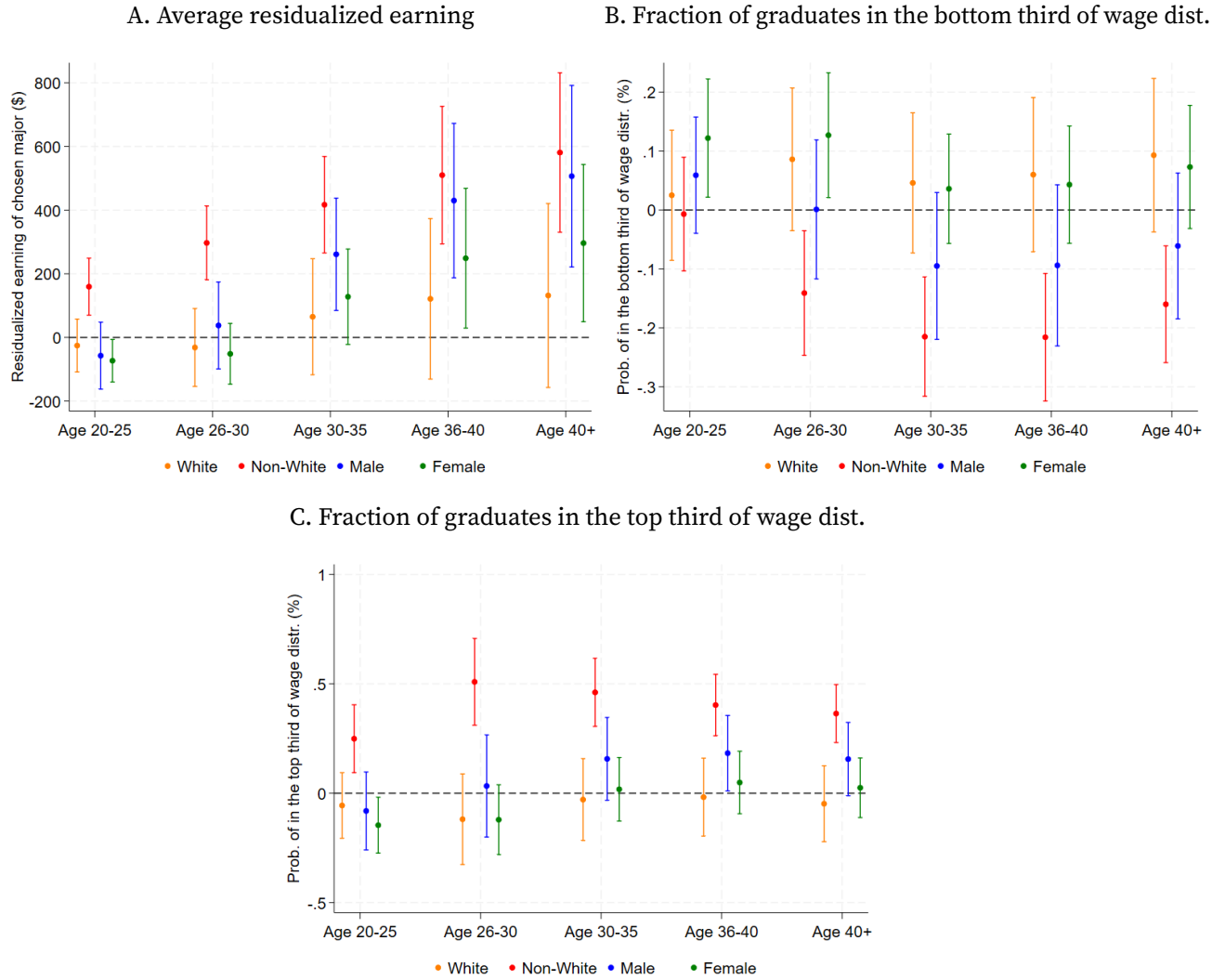
We now examine how the effect of a home price increase on major choice varies by race and gender. We quantify these effects by restricting our sample to the subpopulation of interest.

For our heterogeneity analysis by race, we divide the sample into White and non-White students. The 2001 wave of the Survey of Consumer Finances reveals that, compared to White households, non-White households have a lower homeownership rate (75.1% vs. 47.0%), a lower average income (\$97,518 vs. \$54,350), and a lower median wealth (\$163,801 vs. \$23,303). These differences suggest that non-White students are less likely to live in households with parental homeownership. Based on our discussion in section 2, in the case of rising house prices, we expect to see a shift toward higher-paying majors among non-White students, but not necessarily among White students. Instead of using the overall homeownership rate, we define low- and high-homeownership areas based on the homeownership rates of White and non-White families in each ZIP5 code in these regressions.

All ZIP5s

First, we present our heterogeneity results without conditioning on the ZIP5-level homeownership rate; later, we narrow our sample to students living in low- and high-homeownership areas. As Figure 4 shows, we find substantial heterogeneity in the treatment effect by race. White students' major choices are unaffected by house prices increases, as the estimated treatment effect across all three outcome variables is not statistically different from zero. Meanwhile, in line with our expectations, the same shock induced non-White students to switch to majors that provide higher lifetime earnings and reduce the probability of being in the bottom third and increase the probability of being in the top third of the income distribution. Table A9, which presents estimates on enrolling in specific majors, shows that the majority of this change is due to increased enrollment in Engineering, and reduced enrollment in Education and Fine Arts. Our results suggest that, as an unexpected consequence, the housing boom induced changes in major choice that may have implied a smaller earnings gap between White and non-White students (assuming that students graduated with these majors and that the future earnings we estimate for each major holds throughout their labor market careers).

FIGURE 4. Estimated effect by race and gender - All students

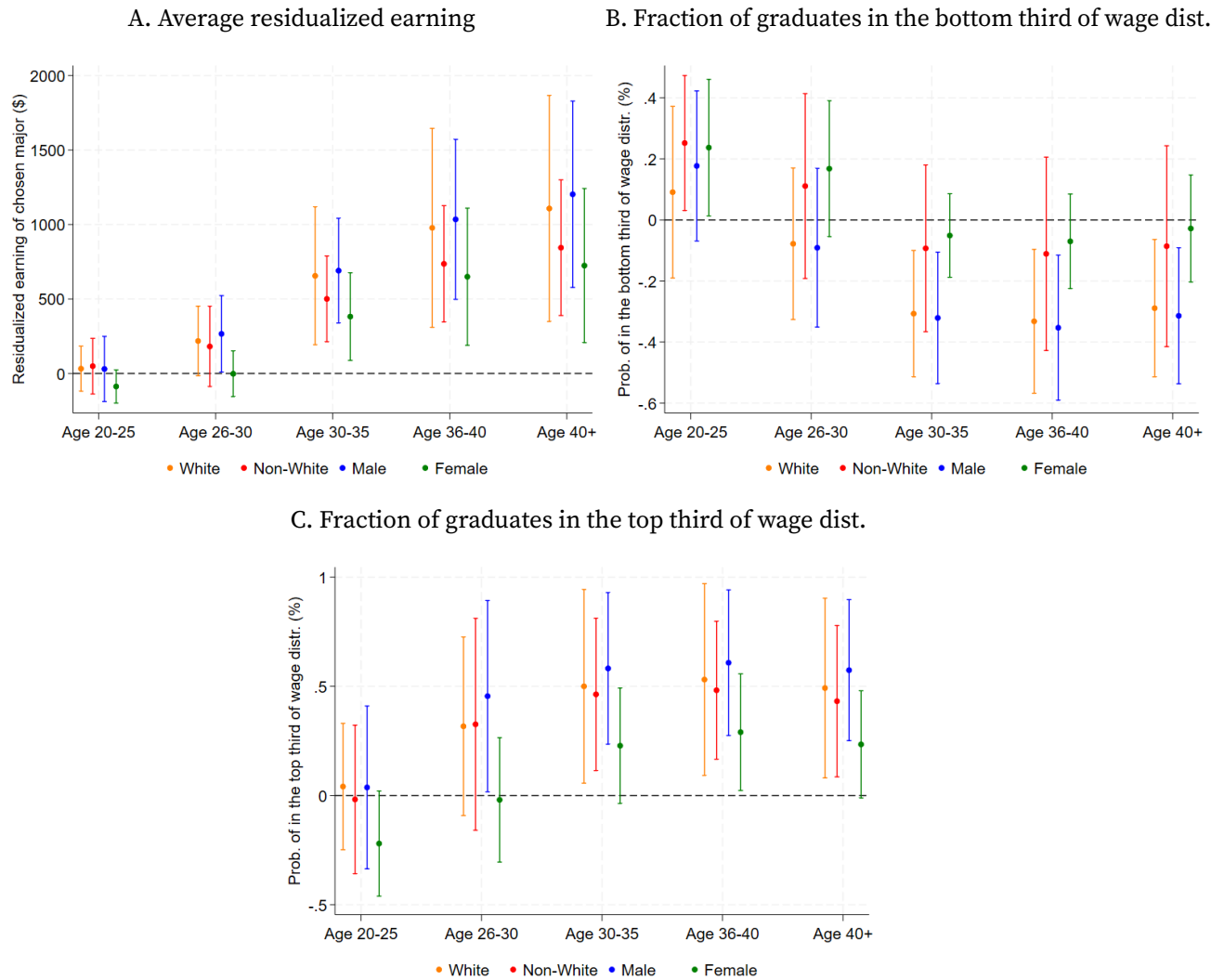


Notes: The graph depicts the estimated interaction term (μ) and its 95% confidence interval from our Diff-in-Diff specification (Equation 2). ZIP3-level controls include the log of population, the share of college-educated adults aged 25-64, the share of foreign-born, and the share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are clustered at the ZIP3 level.

Compared with the differences between estimates for White and non-White students, we find substantially lower, and in most cases, statistically insignificant differences between Female and Male students. Figure 4 indicates that both Female and Male students switch to better-paying careers (Panel A) that provide a higher probability of reaching the top third of the income distribution (Panel C) as a result of a house price increase. Panel B presents the only notable difference in treatment effect by gender: the point estimates indicate that Male students switch to majors that reduce the probability of having earnings in the bottom third of the income distribution, while the opposite is true for Female students.

However, neither of these point estimates is statistically different from zero.

FIGURE 5. Estimated effect by race and gender - Students from low-homeownership ZIP5s



Notes: The graph depicts the estimated interaction term (μ) and its 95% confidence interval from our Diff-in-Diff specification (Equation 2). The sample consists of only freshmen living in the bottom quarter of ZIP5s by homeownership rate. ZIP3-level controls include the log of population, the share of college-educated adults aged 25-64, the share of foreign-born, and the share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are clustered at the ZIP3 level.

Low and high-homeownership ZIP5s

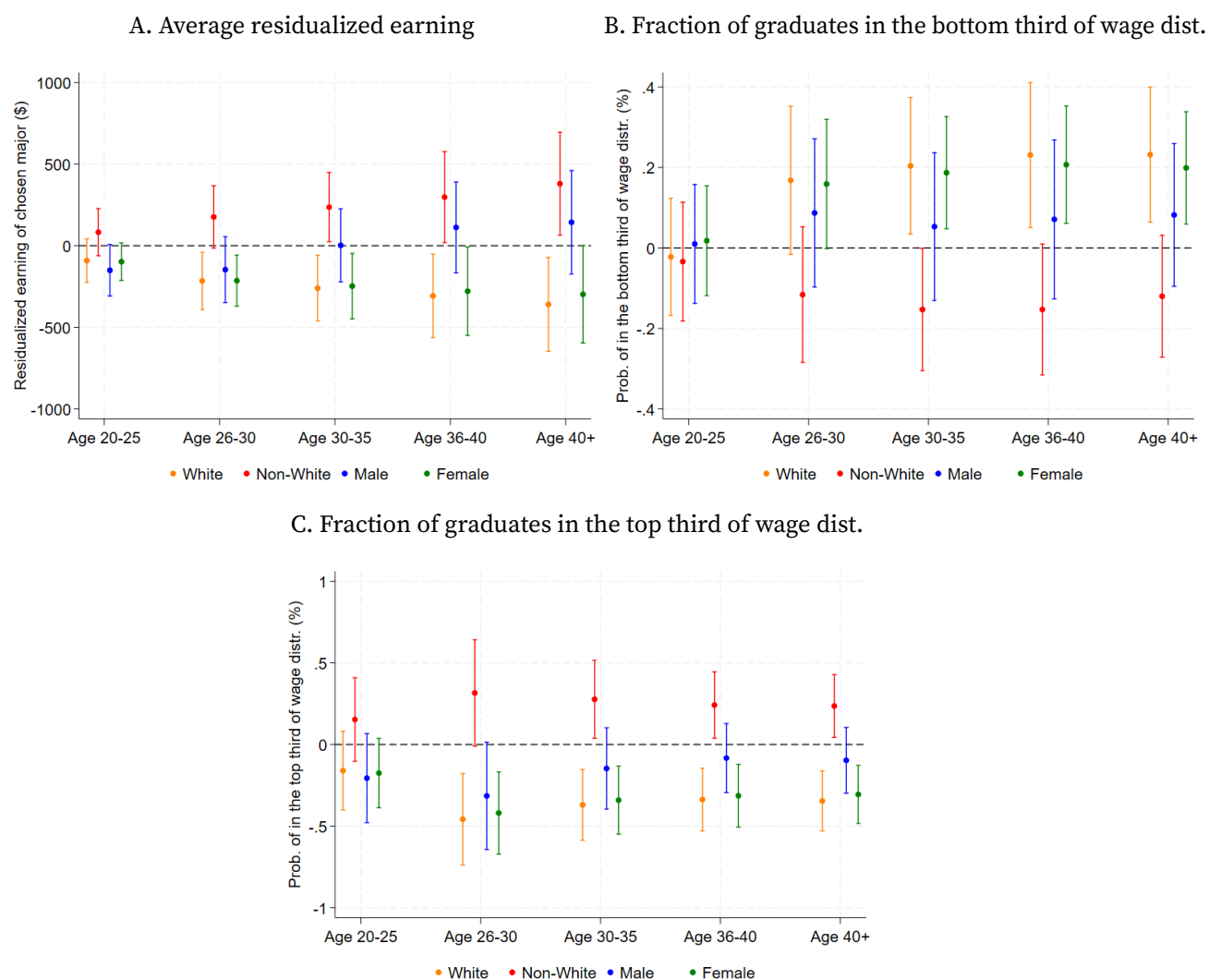
We now focus on students living in the bottom or top 25% of ZIP5s by homeownership rate and narrow our sample to these areas in two separate estimations. This distinction helps us determine whether the racial and gender differences we previously presented

are associated with the likelihood of parental homeownership.

Figure 5 shows that regardless of race or gender, students living in low-homeownership areas react to house price increases in a very similar way. Panel A indicates that there are no racial or gender differences in the change in future earnings profiles, as students shift to higher-paying careers as house prices increase. Panels B and C present point estimates that are quite similar for White and non-White students; these panels also show gender differences similar to those we noted previously in Figure 4. Compared to Female students, changes in Male students' major choice yields higher average earnings (Panel A), and a greater probability of avoiding the bottom and reaching the top third of the earnings distribution. Despite these differences, the point estimates suggest that all students living in low-homeownership areas switch to higher-paying college majors in response to larger increases in house prices.

Figure 6 shows that this uniform behavior is not present among students whose parents are likely to own homes. We find substantial heterogeneity by race and, to a lesser extent, by gender among students living in high-homeownership areas. In the case of a larger increase in house prices, non-White students enroll in majors that yield higher earnings after age 30, associated with jobs that are less likely to be in the bottom third and more likely to be in the top third of the earnings distribution. Given similar responses among non-White students living in low-homeownership areas, the potential hedge of parental housing wealth appears to play a smaller role in non-White students' college major choices.

FIGURE 6. Estimated effect by race and gender - Students from high-homeownership ZIP5s



Notes: The graph depicts the estimated interaction term (μ) and its 95% confidence interval from our Diff-in-Diff specification (Equation 2). The sample consists of only freshmen living in the top quarter of ZIP5s by homeownership rate. ZIP3-level controls include the log of population, the share of college-educated adults aged 25-64, the share of foreign-born, and the share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are clustered at the ZIP3 level.

Meanwhile, in response to the same shock, an average White student is more likely to enroll in a major that leads to the exact opposite future earnings trajectory. We find that, in response to rising house prices, White students are more likely to choose majors that pay less over their lifetimes, with a higher probability of getting into the bottom and a lower probability of reaching the top third of the earnings distribution. Table A10 shows that most of this change could be explained by the increased enrollment in the Education and decreased enrollment in Medical and Health Services and Sciences majors.

In subsection 3.2, we show that while graduates in Health Services majors earn higher-than-average earnings over the entire lifecycle, Education graduates earn below-average wages. Given these differences in lifetime income, the observed change in college major enrollment might be explained by compensating differentials, assuming that the Education major provides better non-pecuniary amenities (e.g., shorter work shifts and more flexible work arrangements). In this way, rising house prices, through increased parental housing wealth, could have enabled White students to switch to lower-paying majors with better amenities.

We find smaller differences in responses between Female and Male students in high-homeownership areas. Our point estimates suggest that, in response to rising housing prices, Female students in these ZIP5 codes enroll in lower-paying majors, whereas male students enroll in higher-paying ones. Also, while both Female and Male students enrolled in majors associated with jobs that were more likely in the bottom third and less likely in the top third of the wage distribution, the magnitude of these changes was more modest among Male students. Our point estimates for Male students are not statistically different from zero, whereas we find significant effects among Female students. These gender differences in college major choice might be explained by known gender differences in preferences for work amenities (Patnaik, Wiswall, and Zafar, 2020). Increases in parental wealth, via rising house prices, could have allowed students living in these ZIP5 codes to choose majors that lead to lower-paying jobs with more workplace amenities, which Female students have a higher valuation for (Campos et al., 2026). This motivation could explain why switching from Health Services to Education was especially prevalent among Female, but not among Male students.

Overall, we find stark differences in college major choice between students living in low- and high-homeownership areas, underscoring the importance of parental resources in this decision. Students living in high-homeownership areas are more likely to live in homes owned by their parents and, as we presented earlier, belong to higher-income families. We find evidence that such students respond to unexpected house price increases by switching to majors associated with lower lifetime earnings but potentially more satisfying workplace amenities. One possible explanation for this behavior is that parental wealth hedges against future negative income shocks or expenses, and that this hedging ability increases with home prices when parents are homeowners. This explanation could account for the observed increases in Education and decreases in Health Services enrollment among White students, but not among non-White students, whose parents are less wealthy and less likely to own a home.

6. Conclusion

This paper provides novel evidence on the causal impact of unexpected increases in house prices on children's college major choices. We do this by combining spatial variation in housing demand growth during the housing boom in the 2000s with a large survey of first-year US undergraduate students. Following prior work, our identification strategy takes advantage of the speculative nature of the housing boom—we instrument for house price growth in a three-digit zip code with the size of the structural break in house prices in that zip code (Charles, Hurst, and Notowidigdo, 2018). We limit our analysis sample to students entering four-year colleges. This is to limit any potential compositional changes in the set of students entering college—we do not find evidence that the housing boom affected enrollment at four-year colleges.

We find that an unexpected increase in house prices in parents' three-digit zip codes induces their children to choose majors associated with higher annual earnings, but that this effect varies by the likelihood that a student's parents own a home. We find that students whose parents likely own a home are induced to choose majors with lower career earnings and potentially better amenities. Meanwhile, students whose parents are unlikely to own a home are induced to choose majors with greater career earnings. These patterns are consistent with an unexpected house price increase yielding a more generous parental safety net for children of homeowners while generating a sharp increase in the expected future cost of living for children of non-homeowners.

While we find that changes in parental resources affect the types of majors that children choose, our estimates only speak to the majors that students choose when they enter college. Our results do not tell us whether the changes in major choice we find persist until the end of college and into the labor market. Fruitful next steps might involve implementing similar strategies as we do using large-scale survey or administrative data that capture the majors that students graduate with, as well as their occupations and earnings during their careers. Such a data infrastructure would help understand whether the changes in labor market trajectories implied by our estimated effects on first-year major choice persist and the implications for occupational sorting in the labor market.

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Appendix

TABLE A1. Earning potential and income volatility of majors

	N	Average residualized earning (USD)					Prob. of being in the bottom third of income dist. (pp)					Prob. of being in the top third of income dist. (pp)				
		Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
Agriculture	66,671	-2,521	-5,004	-10,229	-15,936	-18,374	33.368	36.520	40.932	43.281	44.268	28.855	26.019	24.276	22.895	22.828
Architecture	41,609	-2,583	-3,048	-9,322	-12,012	-11,160	38.484	32.850	36.575	38.047	39.608	30.000	31.000	26.163	27.210	28.377
Area Ethnic and Civilization Studies	19,778	-3,603	-3,881	-1,624	855	3,936	36.156	39.320	35.447	34.629	36.188	27.326	27.314	31.098	33.168	33.905
Biology and Life Sciences	288,813	-7,279	-3,116	13,593	26,969	31,333	46.030	39.110	29.682	28.306	28.330	19.515	29.212	39.035	43.733	43.961
Business	1,175,501	4,426	4,751	3,988	3,437	2,920	26.012	27.775	30.794	32.036	32.913	42.831	38.679	36.493	35.305	33.970
Communications	252,385	-380	-1,511	-4,106	-6,339	-9,157	29.138	32.090	35.619	39.011	39.359	33.201	30.673	30.653	29.632	27.608
Computer and Information Sciences	196,330	9,685	9,258	7,561	5,863	3,852	31.704	29.468	28.447	27.737	28.342	44.949	47.074	42.974	40.873	40.209
Criminal Justice and Fire Protection	105,135	-1,321	-3,529	-8,204	-12,739	-17,485	30.053	31.156	33.819	33.022	37.002	30.626	26.165	24.877	24.635	24.025
Education Administration and Teaching	594,840	-1,260	-6,606	-12,728	-15,321	-15,381	27.552	29.848	34.447	33.788	30.921	32.909	19.507	17.909	20.044	23.364
Engineering	434,206	8,798	12,586	13,243	14,437	15,965	29.296	25.160	23.661	23.510	26.808	47.593	55.800	50.292	46.434	44.654
Engineering Technologies	43,939	2,968	3,476	-1,663	-5,135	-11,295	32.531	30.135	30.029	30.977	36.039	39.533	43.202	34.947	31.901	27.761
English Lang Lit and Comp	171,946	-4,673	-7,408	-8,132	-7,471	-6,003	38.361	41.707	40.090	39.679	38.149	23.511	22.797	25.595	27.872	28.812
Environment and Natural Resources	40,845	-3,463	-8,037	-12,372	-14,057	-16,347	35.016	40.057	40.615	40.814	40.249	25.088	20.717	21.345	23.115	23.887
Family and Consumer Sciences	48,016	-3,633	-7,298	-12,755	-14,155	-13,847	31.906	36.417	40.495	39.107	34.242	25.195	21.283	20.764	22.124	23.607
Fine Arts	244,028	-5,216	-10,736	-15,989	-20,501	-23,565	40.312	46.718	47.799	49.063	48.092	22.678	19.067	19.389	19.468	19.166
History	111,890	-4,929	-5,504	-3,479	-807	-732	40.818	41.759	38.950	38.719	40.079	23.669	23.826	27.000	29.279	29.839
Interdisc and Multi-Disc Studies	53,207	-3,242	-3,961	-2,738	-2,038	-3,697	36.432	36.776	35.105	32.876	33.102	26.075	27.436	30.388	31.204	29.948
Law	9,964	-2,683	-2,430	513	2,099	-6,291	38.592	33.608	30.083	28.937	34.246	28.980	28.332	31.365	32.303	29.395
Liberal Arts and Humanities	77,637	-4,537	-9,586	-11,908	-13,794	-12,079	38.029	43.934	43.470	42.080	39.149	24.633	20.543	22.785	24.429	26.862
Linguistics and Foreign Languages	57,353	-4,930	-7,250	-6,605	-6,228	-6,475	38.847	42.425	40.549	39.315	37.284	23.847	24.460	27.356	28.623	29.214
Mathematics and Statistics	76,063	2,763	5,642	7,708	9,677	11,096	33.055	33.319	31.354	30.670	30.080	35.889	38.105	38.589	39.579	40.255
Medical and Health Sciences and Services	413,111	2,484	6,245	5,082	5,924	8,844	30.165	24.775	24.630	22.779	21.078	39.249	45.668	41.804	41.964	44.730
Philosophy and Religious Studies	38,567	-6,593	-8,105	-9,740	-7,705	-11,101	46.330	49.961	46.860	46.709	47.051	20.019	21.451	22.759	25.194	24.647
Physical Fitness and Leisure	60,741	-6,824	-6,041	-8,931	-13,368	-17,505	42.782	38.093	39.165	40.445	41.347	18.989	23.947	24.092	22.048	21.682
Physical Sciences	159,678	-3,013	-2,788	2,817	7,716	15,041	38.625	39.010	33.907	31.433	30.737	27.275	29.985	35.570	37.947	40.196
Psychology	285,351	-4,148	-5,725	-5,256	-5,926	-7,580	35.180	36.657	34.384	34.235	35.852	23.608	24.477	28.468	29.690	28.543
Public Affairs Policy and Social Work	77,946	-2,514	-4,666	-7,875	-11,039	-11,439	30.418	31.648	31.195	31.255	30.160	28.168	22.337	23.751	22.977	25.608
Social Sciences	418,911	119	2,647	7,415	9,359	8,711	34.084	33.691	32.441	33.288	35.123	32.570	34.372	36.976	36.818	35.130
Theology and Religious Vocations	34,663	-7,389	-16,993	-27,662	-35,959	-39,514	40.896	55.559	63.192	65.129	59.603	16.884	9.742	8.697	9.455	9.852
Vocational	33,270	4,717	582	-4,412	-8,832	-8,901	26.571	30.139	35.044	37.075	39.735	41.879	35.988	31.785	28.827	28.836

Source: Own calculation, based on ACS.

TABLE A2. Student characteristics in low and high homeownership ZIP5 areas

Variable	Low homeownership ZIP5	High homeownership ZIP5	Difference (High-Low)
Homeownership rate (zip code)	0.430 (0.131)	0.857 (0.046)	0.427*** (0.011)
HH Income: bottom 35pct	0.445 (0.497)	0.248 (0.432)	-0.198*** (0.020)
HH Income: 36-89th pct	0.381 (0.486)	0.530 (0.499)	0.149*** (0.015)
HH Income: top 10pct	0.085 (0.279)	0.132 (0.338)	0.047*** (0.008)
Female	0.574 (0.495)	0.543 (0.498)	-0.031*** (0.006)
Asian (pct of freshmen)	0.125 (0.331)	0.053 (0.223)	-0.073*** (0.013)
Black (pct of freshmen)	0.173 (0.379)	0.044 (0.204)	-0.130*** (0.018)
Hispanic (pct of freshmen)	0.131 (0.338)	0.022 (0.148)	-0.109*** (0.027)
White (pct of freshmen)	0.477 (0.499)	0.831 (0.375)	0.353*** (0.030)
Resid. income: below age 26 (USD)	616.867 (5,190.328)	576.174 (5,065.964)	-40.693 (73.347)
Resid. income: age 26-30 (USD)	706.230 (6,899.807)	541.903 (6,946.701)	-164.328 (107.951)
Resid. income: age 31-35 (USD)	967.644 (9,288.767)	552.627 (9,459.824)	-415.017*** (148.727)
Resid. income: age 36-40 (USD)	1,479.260 (12,693.907)	918.763 (12,807.076)	-560.497*** (190.855)
Resid. income: over age 40 (USD)	1,696.894 (14,487.662)	1,165.430 (14,594.528)	-531.464** (212.339)
Share with bottom third earning: below age 26 (pct)	32.811 (6.152)	32.585 (6.115)	-0.225*** (0.070)
Share with bottom third earning: age 26-30 (pct)	32.443 (6.674)	32.379 (6.714)	-0.064 (0.091)
Share with bottom third earning: age 31-35 (pct)	32.244 (6.393)	32.398 (6.513)	0.154 (0.097)
Share with bottom third earning: age 36-40 (pct)	32.238 (7.054)	32.427 (7.182)	0.189* (0.109)
Share with bottom third earning: over age 40 (pct)	32.445 (6.896)	32.559 (6.982)	0.114 (0.104)
Share with top third earning: below age 26 (pct)	34.073 (9.320)	34.137 (9.189)	0.064 (0.120)
Share with top third earning: age 26-30 (pct)	34.342 (11.206)	34.033 (11.371)	-0.308* (0.186)
Share with top third earning: age 31-35 (pct)	34.096 (9.360)	33.684 (9.647)	-0.412** (0.163)
Share with top third earning: age 36-40 (pct)	34.191 (8.648)	33.767 (8.888)	-0.424*** (0.150)
Share with top third earning: over age 40 (pct)	34.222 (8.450)	33.875 (8.598)	-0.347** (0.141)
Observations	83,150	179,742	262,892

Note: Own calculation based on the TFS and ACS. Standard errors in parentheses are clustered at the ZIP3-level.

TABLE A3. Effect of the 2000s housing boom on major choice, Full sample

	Average residualized earning (USD)					Prob. of being in the bottom third of income dist. (pp)					Prob. of being in the top third of income dist. (pp)				
	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
<i>Panel A: Diff-in-Diff</i>															
Housing Shock x Post	-64.179* (32.994)	-6.999 (45.611)	196.594*** (70.826)	341.798*** (103.803)	402.456*** (119.634)	0.097** (0.041)	0.070 (0.045)	-0.025 (0.045)	-0.022 (0.049)	0.010 (0.048)	-0.116** (0.058)	-0.044 (0.078)	0.089 (0.069)	0.118* (0.068)	0.092 (0.065)
Observations	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699
CM	615.806	674.761	809.836	1250.652	1505.118	32.792	32.477	32.371	32.398	32.611	34.128	34.351	33.997	34.039	34.080
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>															
Housing Shock x Post	-26.312 (67.008)	127.688* (77.417)	530.670*** (133.556)	832.174*** (218.090)	946.861*** (248.815)	0.211** (0.097)	0.049 (0.098)	-0.178*** (0.060)	-0.204*** (0.067)	-0.162** (0.066)	-0.097 (0.119)	0.206 (0.140)	0.398*** (0.116)	0.443*** (0.117)	0.395*** (0.108)
Observations	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407
CM	590.292	637.323	862.869	1333.157	1519.666	32.895	32.586	32.391	32.410	32.663	34.002	34.263	34.008	34.074	34.063
<i>Panel C: Diff-in-Diff, High homeownership areas</i>															
Housing Shock x Post	-126.077** (53.322)	-182.123*** (67.599)	-124.533 (79.801)	-86.616 (105.456)	-83.188 (119.030)	0.019 (0.056)	0.128* (0.068)	0.126** (0.064)	0.147** (0.068)	0.149** (0.063)	-0.195** (0.093)	-0.371*** (0.109)	-0.246*** (0.086)	-0.201*** (0.076)	-0.206*** (0.072)
Observations	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818
CM	709.071	786.159	875.602	1290.538	1557.432	32.667	32.374	32.324	32.372	32.599	34.327	34.523	34.096	34.097	34.124
<i>Panel D: Diff-in-Diff-in-Diff</i>															
Housing Shock x Post x High h.ownership	-27.996 (82.355)	-226.147** (107.103)	-613.706*** (164.288)	-905.758*** (239.850)	-1021.378*** (271.755)	-0.262** (0.105)	-0.004 (0.109)	0.254*** (0.097)	0.306*** (0.107)	0.273*** (0.100)	0.036 (0.141)	-0.435** (0.182)	-0.567*** (0.162)	-0.595*** (0.156)	-0.559*** (0.147)
Observations	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225
CM	666.177	732.411	871.004	1305.929	1543.794	32.749	32.451	32.348	32.386	32.622	34.210	34.429	34.064	34.088	34.102

Note: ZIP3-level controls include the log of population, share of college-educated adults between the ages of 25 and 64, share of foreign-borns, share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, race, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A4. Effect of the 2000s housing boom on major choice, White students

	Average residualized earning (USD)					Prob. of being in the bottom third of income dist. (pp)					Prob. of being in the top third of income dist. (pp)				
	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
<i>Panel A: Diff-in-Diff</i>															
Housing Shock x Post	-25.636 (42.438)	-31.655 (62.442)	64.873 (93.023)	121.220 (128.685)	131.711 (147.499)	0.025 (0.056)	0.086 (0.062)	0.046 (0.061)	0.060 (0.067)	0.093 (0.066)	-0.056 (0.076)	-0.119 (0.106)	-0.029 (0.095)	-0.018 (0.091)	-0.048 (0.088)
Observations	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283
CM	424.019	296.806	215.387	505.637	714.297	32.799	32.703	32.737	32.801	32.953	33.838	33.720	33.388	33.470	33.555
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>															
Housing Shock x Post	31.908 (77.182)	217.745* (119.164)	655.326*** (236.141)	977.440*** (340.757)	1107.437*** (387.195)	0.091 (0.143)	-0.078 (0.127)	-0.307*** (0.106)	-0.332*** (0.120)	-0.289** (0.115)	0.041 (0.148)	0.317 (0.209)	0.500** (0.226)	0.531** (0.224)	0.492** (0.210)
Observations	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391
CM	97.931	-161.015	-219.284	42.907	156.522	33.147	33.250	33.239	33.340	33.476	33.203	32.986	32.874	33.039	33.090
<i>Panel C: Diff-in-Diff, High homeownership areas</i>															
Housing Shock x Post	-91.331 (68.091)	-215.832** (89.592)	-260.303** (102.618)	-307.268** (130.474)	-359.501** (146.676)	-0.022 (0.074)	0.168* (0.094)	0.204** (0.087)	0.231** (0.092)	0.232*** (0.086)	-0.160 (0.123)	-0.458*** (0.143)	-0.370*** (0.111)	-0.337*** (0.098)	-0.346*** (0.094)
Observations	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072
CM	615.813	549.335	470.288	766.186	988.979	32.608	32.491	32.556	32.631	32.823	34.196	34.096	33.674	33.697	33.745
<i>Panel D: Diff-in-Diff-in-Diff</i>															
Housing Shock x Post x High h.ownership	-88.027 (99.693)	-376.176*** (142.698)	-846.145*** (266.777)	-1207.654*** (388.840)	-1381.669*** (445.501)	-0.146 (0.175)	0.188 (0.161)	0.458*** (0.136)	0.513*** (0.156)	0.479*** (0.148)	-0.133 (0.188)	-0.689*** (0.251)	-0.799*** (0.262)	-0.811*** (0.261)	-0.786*** (0.249)
Observations	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463
CM	447.271	318.156	245.871	530.800	718.061	32.784	32.738	32.778	32.862	33.035	33.873	33.735	33.414	33.483	33.532

Note: ZIP3-level controls include the log of population, share of college-educated adults between the ages of 25 and 64, share of foreign-borns, share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A5. Effect of the 2000s housing boom on major choice, non-White students

	Average residualized earning (USD)					Prob. of being in the bottom third of income dist. (pp)					Prob. of being in the top third of income dist. (pp)				
	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
<i>Panel A: Diff-in-Diff</i>															
Housing Shock x Post	159.430*** (45.684)	297.036*** (59.221)	417.018*** (77.335)	510.107*** (110.266)	581.134*** (127.851)	-0.007 (0.049)	-0.141*** (0.054)	-0.215*** (0.052)	-0.216*** (0.055)	-0.160*** (0.051)	0.249*** (0.079)	0.509*** (0.101)	0.461*** (0.079)	0.403*** (0.072)	0.364*** (0.068)
Observations	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416
CM	1085.730	1600.837	2266.371	3076.106	3442.808	32.776	31.924	31.474	31.413	31.772	34.840	35.896	35.489	35.435	35.368
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>															
Housing Shock x Post	48.752 (95.146)	181.301 (137.356)	500.532*** (146.937)	735.753*** (199.133)	844.154*** (232.276)	0.252** (0.113)	0.111 (0.155)	-0.093 (0.139)	-0.111 (0.162)	-0.086 (0.168)	-0.018 (0.174)	0.326 (0.248)	0.463*** (0.178)	0.482*** (0.161)	0.432** (0.177)
Observations	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574
CM	1010.741	1318.011	1792.426	2441.610	2693.438	32.760	32.087	31.709	31.655	32.010	34.652	35.377	34.993	34.965	34.909
<i>Panel C: Diff-in-Diff, High homeownership areas</i>															
Housing Shock x Post	82.719 (73.744)	176.368* (97.362)	236.301** (108.352)	297.572** (142.229)	379.863** (160.992)	-0.034 (0.075)	-0.116 (0.086)	-0.153** (0.078)	-0.153* (0.083)	-0.120 (0.077)	0.153 (0.131)	0.316* (0.166)	0.277** (0.122)	0.242** (0.104)	0.236** (0.098)
Observations	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738
CM	1154.040	1792.064	2594.470	3502.586	3922.319	32.840	31.888	31.371	31.313	31.695	34.958	36.248	35.830	35.745	35.651
<i>Panel D: Diff-in-Diff-in-Diff</i>															
Housing Shock x Post x High h.ownership	-15.696 (114.950)	-37.196 (157.878)	-235.221 (177.328)	-367.983 (237.011)	-389.243 (271.623)	-0.234* (0.122)	-0.204 (0.160)	-0.061 (0.146)	-0.050 (0.170)	-0.062 (0.177)	0.086 (0.206)	-0.074 (0.281)	-0.200 (0.209)	-0.232 (0.188)	-0.176 (0.199)
Observations	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312
CM	1107.195	1637.095	2332.280	3155.751	3520.595	32.814	31.953	31.482	31.425	31.798	34.858	35.963	35.556	35.490	35.408

Note: ZIP3-level controls include the log of population, share of college-educated adults between the ages of 25 and 64, share of foreign-borns, share of women in the labor force, all measured in 2000. Individual controls include indicators for gender, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A6. Effect of the 2000s housing boom on major choice, Male students

	Average residualized earning (USD)					Prob. of being in the bottom third of income dist. (pp)					Prob. of being in the top third of income dist. (pp)				
	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
<i>Panel A: Diff-in-Diff</i>															
Housing Shock x Post	-57.486 (53.637)	37.543 (69.712)	261.208*** (90.035)	429.985*** (123.841)	506.610*** (145.614)	0.059 (0.050)	0.001 (0.060)	-0.095 (0.064)	-0.094 (0.070)	-0.061 (0.063)	-0.081 (0.091)	0.033 (0.119)	0.157 (0.096)	0.183** (0.088)	0.156* (0.085)
Observations	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414
CM	2140.089	2660.327	2919.509	3331.296	3518.191	32.389	31.782	31.585	31.710	32.495	36.474	37.615	36.527	35.907	35.459
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>															
Housing Shock x Post	30.130 (111.607)	265.963** (130.934)	690.215*** (179.231)	1034.297*** (273.820)	1202.697*** (319.147)	0.177 (0.125)	-0.091 (0.133)	-0.321*** (0.110)	-0.353*** (0.121)	-0.314*** (0.114)	0.037 (0.190)	0.455** (0.223)	0.582*** (0.177)	0.608*** (0.170)	0.574*** (0.165)
Observations	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978
CM	2188.772	2657.028	2906.618	3288.391	3385.192	32.491	31.894	31.636	31.749	32.545	36.450	37.597	36.524	35.908	35.427
<i>Panel C: Diff-in-Diff, High homeownership areas</i>															
Housing Shock x Post	-150.436* (80.547)	-146.245 (102.953)	2.393 (114.164)	112.231 (142.030)	143.413 (161.656)	0.010 (0.075)	0.087 (0.094)	0.053 (0.094)	0.071 (0.101)	0.082 (0.090)	-0.206 (0.139)	-0.315* (0.168)	-0.147 (0.127)	-0.083 (0.108)	-0.097 (0.103)
Observations	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557
CM	2225.597	2765.676	3001.656	3403.844	3612.698	32.229	31.656	31.518	31.665	32.471	36.675	37.759	36.619	35.968	35.502
<i>Panel D: Diff-in-Diff-in-Diff</i>															
Housing Shock x Post x High h.ownership	-110.822 (140.036)	-339.116* (179.446)	-645.284*** (227.192)	-904.756*** (308.671)	-1044.516*** (352.579)	-0.219 (0.137)	0.132 (0.155)	0.355** (0.156)	0.415** (0.173)	0.398** (0.155)	-0.116 (0.230)	-0.646** (0.303)	-0.656*** (0.246)	-0.647*** (0.222)	-0.640*** (0.212)
Observations	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535
CM	2212.922	2728.280	2968.944	3364.106	3534.392	32.319	31.738	31.559	31.694	32.496	36.598	37.703	36.586	35.947	35.477

Note: ZIP3-level controls include the log of population, share of college-educated adults between the ages of 25 and 64, share of foreign-borns, share of women in the labor force, all measured in 2000. Individual controls include indicators for race, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A7. Effect of the 2000s housing boom on major choice, Female students

	Average residualized earning (USD)					Prob. of being in the bottom third of income dist. (pp)					Prob. of being in the top third of income dist. (pp)				
	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40	Below age 26	Age 26-30	Age 31-35	Age 36-40	Over age 40
<i>Panel A: Diff-in-Diff</i>															
Housing Shock x Post	-73.263** (34.144)	-51.634 (48.807)	127.815* (76.499)	248.839** (112.037)	296.347** (126.091)	0.122** (0.051)	0.127** (0.054)	0.036 (0.047)	0.043 (0.051)	0.073 (0.053)	-0.146** (0.065)	-0.121 (0.081)	0.018 (0.074)	0.049 (0.073)	0.025 (0.070)
Observations	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285
CM	-657.163	-983.438	-952.007	-486.950	-176.053	33.129	33.057	33.028	32.973	32.708	32.169	31.624	31.884	32.480	32.929
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>															
Housing Shock x Post	-87.683 (56.805)	-1.972 (78.275)	381.693** (149.993)	649.208*** (234.989)	723.861*** (263.872)	0.237** (0.114)	0.168 (0.114)	-0.051 (0.070)	-0.070 (0.079)	-0.028 (0.089)	-0.220* (0.123)	-0.020 (0.145)	0.228* (0.135)	0.290** (0.136)	0.234* (0.125)
Observations	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429
CM	-639.178	-916.132	-709.078	-170.709	84.798	33.205	33.118	32.971	32.919	32.754	32.120	31.698	32.073	32.663	33.015
<i>Panel C: Diff-in-Diff, High homeownership areas</i>															
Housing Shock x Post	-97.972* (58.763)	-213.934*** (79.697)	-247.359** (102.486)	-278.884** (138.080)	-297.411* (152.376)	0.018 (0.070)	0.159* (0.082)	0.187*** (0.071)	0.207*** (0.074)	0.199*** (0.071)	-0.175 (0.109)	-0.420*** (0.129)	-0.341*** (0.106)	-0.314*** (0.098)	-0.306*** (0.091)
Observations	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261
CM	-626.280	-956.871	-996.459	-570.298	-252.298	33.052	33.007	33.033	32.994	32.712	32.260	31.673	31.875	32.449	32.909
<i>Panel D: Diff-in-Diff-in-Diff</i>															
Housing Shock x Post x High h.ownership	51.005 (71.754)	-127.443 (101.028)	-584.428*** (173.201)	-905.538*** (257.936)	-1000.995*** (291.848)	-0.294** (0.126)	-0.114 (0.126)	0.169* (0.099)	0.210* (0.110)	0.161 (0.116)	0.171 (0.146)	-0.256 (0.173)	-0.489*** (0.166)	-0.547*** (0.167)	-0.483*** (0.159)
Observations	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690
CM	-631.121	-941.581	-888.598	-420.322	-125.777	33.110	33.048	33.010	32.966	32.728	32.207	31.683	31.949	32.529	32.949

Note: ZIP3-level controls include the log of population, share of college-educated adults between the ages of 25 and 64, share of foreign-borns, share of women in the labor force, all measured in 2000. Individual controls include indicators for race, high-school GPA, college selectivity, and parental educational attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A8. Effect of the 2000s housing boom on the probability of enrolling in a given major, Full sample

	Ethnic	Bio	Busi	Comm	CS	Educ	Engi	English	FineA	Hist	Multi	LibArt	Math	Med	PE	PhysicalS	Psychology	PubAff	SocialS
<i>Panel A: Diff-in-Diff</i>																			
Housing Shock x Post	0.002** (0.001)	0.006*** (0.002)	0.003 (0.002)	-0.001 (0.001)	-0.004*** (0.001)	-0.001 (0.002)	0.003 (0.002)	0.002*** (0.001)	-0.005*** (0.001)	0.001 (0.000)	0.001 (0.001)	-0.002*** (0.001)	0.001 (0.001)	-0.009*** (0.002)	0.002** (0.001)	0.003*** (0.001)	-0.001 (0.001)	-0.000 (0.001)	0.002*** (0.001)
Observations	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699	651699
CM	0.004	0.080	0.184	0.045	0.053	0.087	0.099	0.026	0.072	0.013	0.001	0.013	0.008	0.105	0.013	0.029	0.052	0.012	0.050
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>																			
Housing Shock x Post	-0.003** (0.001)	0.014*** (0.005)	0.000 (0.005)	-0.000 (0.002)	-0.000 (0.003)	-0.004 (0.004)	0.007* (0.004)	0.002 (0.002)	-0.009*** (0.002)	0.001 (0.001)	0.002 (0.003)	-0.001 (0.001)	0.001 (0.001)	-0.008** (0.004)	0.002 (0.001)	0.004** (0.002)	0.003 (0.002)	-0.002** (0.001)	0.002 (0.002)
Observations	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407	105407
CM	0.005	0.084	0.186	0.044	0.060	0.085	0.088	0.027	0.072	0.012	0.001	0.015	0.006	0.100	0.012	0.025	0.065	0.012	0.053
<i>Panel C: Diff-in-Diff, High homeownership areas</i>																			
Housing Shock x Post	0.003*** (0.001)	0.002 (0.002)	0.002 (0.003)	0.001 (0.002)	-0.008*** (0.002)	0.007*** (0.003)	-0.000 (0.003)	0.001 (0.001)	0.000 (0.003)	0.001 (0.001)	-0.001 (0.001)	-0.002** (0.001)	0.002** (0.001)	-0.012*** (0.003)	0.000 (0.001)	0.001 (0.001)	0.000 (0.002)	0.001 (0.001)	0.003* (0.001)
Observations	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818	248818
CM	0.004	0.075	0.190	0.045	0.048	0.083	0.110	0.026	0.075	0.013	0.001	0.012	0.009	0.104	0.011	0.030	0.047	0.013	0.049
<i>Panel D: Diff-in-Diff-in-Diff</i>																			
Housing Shock x Post x High h.ownership	0.005*** (0.001)	-0.014*** (0.005)	0.004 (0.007)	0.001 (0.003)	-0.006* (0.004)	0.012** (0.005)	-0.005 (0.005)	-0.002 (0.002)	0.009*** (0.003)	-0.000 (0.001)	-0.003 (0.003)	-0.001 (0.001)	0.001 (0.001)	-0.002 (0.004)	-0.001 (0.002)	-0.003 (0.002)	-0.003 (0.003)	0.003* (0.001)	-0.001 (0.003)
Observations	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225	354225
CM	0.004	0.079	0.188	0.044	0.053	0.084	0.102	0.026	0.074	0.013	0.001	0.013	0.008	0.103	0.011	0.028	0.054	0.012	0.051

Note: The baseline controls include: log of ZIP3 population in 2000, share of college-educated adults between age 25-64, share of foreign-borns, share of women in the labor force, and indicators for gender, race, HS GPA, college selectivity, first-generation status, and parental education attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A9. Effect of the 2000s housing boom on the probability of enrolling in a given major, Non-White students

	Ethnic	Bio	Busi	Comm	CS	Educ	Engi	English	FineA	Hist	Multi	LibArt	Math	Med	PE	PhysicalS	Psychology	PubAff	SocialS	
<i>Panel A: Diff-in-Diff</i>																				
Housing Shock x Post	-0.001 (0.001)	-0.000 (0.003)	-0.002 (0.003)	0.000 (0.001)	0.001 (0.002)	-0.006*** (0.002)	0.013*** (0.004)	0.003*** (0.001)	-0.007*** (0.002)	0.001* (0.001)	-0.000 (0.002)	-0.001 (0.001)	0.000 (0.001)	-0.000 (0.003)	0.001 (0.001)	0.002 (0.001)	-0.002 (0.001)	-0.001** (0.001)	0.003** (0.001)	
Observations	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416	167416
CM	0.003	0.097	0.190	0.039	0.071	0.066	0.103	0.019	0.063	0.008	0.001	0.012	0.006	0.127	0.010	0.022	0.060	0.011	0.053	
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>																				
Housing Shock x Post	-0.001 (0.002)	0.007 (0.005)	-0.003 (0.009)	0.003 (0.003)	0.011*** (0.004)	-0.011** (0.005)	0.003 (0.005)	0.003 (0.003)	-0.006 (0.004)	-0.000 (0.002)	0.003 (0.005)	-0.000 (0.002)	-0.001 (0.001)	-0.006 (0.010)	0.001 (0.003)	0.007** (0.003)	-0.001 (0.004)	-0.004** (0.002)	0.005 (0.004)	
Observations	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574	28574
CM	0.004	0.091	0.190	0.039	0.069	0.088	0.102	0.017	0.058	0.006	0.000	0.012	0.005	0.116	0.007	0.018	0.069	0.014	0.051	
<i>Panel C: Diff-in-Diff, High homeownership areas</i>																				
Housing Shock x Post	-0.001 (0.001)	-0.002 (0.004)	-0.007 (0.005)	0.002 (0.002)	-0.005** (0.002)	-0.001 (0.002)	0.013** (0.006)	0.001 (0.001)	-0.005** (0.002)	0.002** (0.001)	-0.001 (0.002)	-0.001* (0.001)	0.001 (0.001)	0.001 (0.004)	-0.001 (0.002)	0.004* (0.002)	-0.001 (0.002)	-0.000 (0.001)	0.003 (0.002)	
Observations	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738	67738
CM	0.003	0.100	0.186	0.036	0.074	0.053	0.109	0.019	0.067	0.008	0.000	0.012	0.007	0.137	0.010	0.021	0.052	0.008	0.053	
<i>Panel D: Diff-in-Diff-in-Diff</i>																				
Housing Shock x Post x High h.ownership	-0.001 (0.002)	-0.005 (0.005)	-0.003 (0.009)	-0.001 (0.004)	-0.016*** (0.004)	0.010** (0.005)	0.007 (0.007)	-0.002 (0.004)	0.002 (0.004)	0.002 (0.002)	-0.003 (0.004)	-0.001 (0.002)	0.002 (0.001)	0.010 (0.011)	-0.001 (0.003)	-0.004 (0.004)	-0.001 (0.005)	0.005** (0.002)	-0.001 (0.005)	
Observations	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312	96312
CM	0.003	0.097	0.188	0.037	0.072	0.066	0.107	0.018	0.064	0.008	0.000	0.012	0.006	0.129	0.009	0.020	0.058	0.011	0.053	

Note: The baseline controls include: log of ZIP3 population in 2000, share of college-educated adults between age 25-64, share of foreign-borns, share of women in the labor force, and indicators for gender, HS GPA, college selectivity, first-generation status, and parental education attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A10. Effect of the 2000s housing boom on the probability of enrolling in a given major, White students

	Ethnic	Bio	Busi	Comm	CS	Educ	Engi	English	FineA	Hist	Multi	LibArt	Math	Med	PE	PhysicalS	Psychology	PubAff	SocialS
<i>Panel A: Diff-in-Diff</i>																			
Housing Shock x Post	0.004*** (0.001)	0.001 (0.002)	0.006** (0.003)	-0.002* (0.001)	-0.002 (0.001)	0.002 (0.003)	0.002 (0.003)	0.002* (0.001)	-0.003 (0.002)	0.001 (0.001)	0.000 (0.002)	-0.003*** (0.001)	0.002* (0.001)	-0.012*** (0.003)	0.002* (0.001)	0.003* (0.001)	-0.001 (0.001)	-0.000 (0.001)	0.002** (0.001)
Observations	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283	484283
CM	0.004	0.074	0.182	0.047	0.046	0.095	0.098	0.029	0.076	0.015	0.001	0.013	0.009	0.097	0.013	0.032	0.049	0.013	0.048
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>																			
Housing Shock x Post	0.001 (0.002)	0.015*** (0.006)	0.005 (0.008)	-0.000 (0.003)	-0.001 (0.003)	-0.001 (0.007)	0.007 (0.005)	-0.002 (0.002)	-0.009** (0.004)	-0.001 (0.002)	-0.002 (0.002)	-0.002 (0.002)	0.002 (0.003)	-0.004 (0.004)	0.002 (0.002)	0.004 (0.003)	0.003 (0.002)	-0.002 (0.002)	0.001 (0.003)
Observations	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391	74391
CM	0.006	0.074	0.174	0.050	0.046	0.087	0.080	0.037	0.088	0.020	0.001	0.017	0.008	0.085	0.016	0.030	0.058	0.011	0.056
<i>Panel C: Diff-in-Diff, High homeownership areas</i>																			
Housing Shock x Post	0.005*** (0.001)	-0.003 (0.003)	0.002 (0.004)	-0.001 (0.002)	-0.003 (0.002)	0.011*** (0.003)	-0.002 (0.004)	0.002 (0.002)	0.005 (0.003)	0.001 (0.001)	-0.001 (0.002)	-0.002** (0.001)	0.004*** (0.001)	-0.015*** (0.004)	0.000 (0.001)	-0.000 (0.002)	0.001 (0.002)	0.000 (0.001)	0.003* (0.002)
Observations	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072	183072
CM	0.004	0.071	0.194	0.047	0.045	0.087	0.107	0.028	0.076	0.015	0.001	0.013	0.009	0.095	0.011	0.032	0.046	0.014	0.047
<i>Panel D: Diff-in-Diff-in-Diff</i>																			
Housing Shock x Post x High h.ownership	0.004** (0.002)	-0.018** (0.007)	0.000 (0.010)	-0.001 (0.004)	-0.002 (0.003)	0.012 (0.008)	-0.008 (0.007)	0.003 (0.003)	0.012** (0.005)	0.002 (0.002)	0.000 (0.002)	-0.001 (0.002)	0.002 (0.003)	-0.011** (0.006)	-0.001 (0.002)	-0.004 (0.004)	-0.002 (0.003)	0.002 (0.002)	0.001 (0.003)
Observations	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463	257463
CM	0.005	0.072	0.187	0.048	0.045	0.087	0.098	0.031	0.080	0.016	0.001	0.014	0.009	0.092	0.013	0.032	0.050	0.013	0.050

Note: The baseline controls include: log of ZIP3 population in 2000, share of college-educated adults between age 25-64, share of foreign-borns, share of women in the labor force, and indicators for gender, HS GPA, college selectivity, first-generation status, and parental education attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A11. Effect of the 2000s housing boom on the probability of enrolling in a given major, Female students

	Ethnic	Bio	Busi	Comm	CS	Educ	Engi	English	FineA	Hist	Multi	LibArt	Math	Med	PE	PhysicalS	Psychology	PubAff	SocialS
<i>Panel A: Diff-in-Diff</i>																			
Housing Shock x Post	0.002** (0.001)	0.006** (0.002)	0.003 (0.002)	-0.001 (0.001)	-0.002* (0.001)	-0.000 (0.003)	0.002* (0.001)	0.002** (0.001)	-0.003* (0.002)	0.001** (0.001)	0.001 (0.002)	-0.002** (0.001)	0.001* (0.001)	-0.012*** (0.003)	0.002*** (0.001)	0.004*** (0.001)	-0.002 (0.001)	-0.000 (0.001)	0.001 (0.001)
Observations	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285	367285
CM	0.005	0.095	0.150	0.057	0.019	0.131	0.033	0.034	0.078	0.010	0.001	0.016	0.007	0.145	0.010	0.019	0.077	0.021	0.050
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>																			
Housing Shock x Post	-0.001 (0.001)	0.013** (0.005)	0.002 (0.006)	0.001 (0.003)	0.001 (0.002)	-0.004 (0.007)	0.003 (0.002)	0.001 (0.002)	-0.008*** (0.003)	0.002* (0.001)	0.001 (0.004)	0.001 (0.001)	0.001 (0.001)	-0.012* (0.007)	0.002* (0.001)	0.005** (0.002)	0.006* (0.003)	-0.003** (0.001)	0.001 (0.003)
Observations	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429	61429
CM	0.006	0.098	0.163	0.053	0.025	0.122	0.029	0.035	0.071	0.010	0.001	0.016	0.006	0.134	0.009	0.017	0.092	0.019	0.055
<i>Panel C: Diff-in-Diff, High homeownership areas</i>																			
Housing Shock x Post	0.003** (0.001)	-0.001 (0.003)	-0.001 (0.004)	-0.001 (0.003)	-0.004 (0.002)	0.012*** (0.004)	0.003 (0.002)	0.001 (0.002)	0.002 (0.003)	0.002** (0.001)	-0.000 (0.002)	-0.001 (0.001)	0.002** (0.001)	-0.015*** (0.004)	0.001 (0.001)	0.001 (0.002)	-0.000 (0.003)	0.002 (0.002)	-0.000 (0.002)
Observations	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261	137261
CM	0.005	0.093	0.151	0.057	0.014	0.128	0.036	0.035	0.084	0.010	0.001	0.016	0.008	0.147	0.009	0.019	0.071	0.022	0.049
<i>Panel D: Diff-in-Diff-in-Diff</i>																			
Housing Shock x Post x High h.ownership	0.004*** (0.001)	-0.015*** (0.006)	-0.001 (0.006)	-0.001 (0.004)	-0.005* (0.002)	0.016** (0.007)	0.002 (0.003)	-0.000 (0.003)	0.009** (0.004)	0.000 (0.001)	-0.002 (0.004)	-0.002 (0.002)	0.001 (0.001)	0.001 (0.007)	-0.001 (0.002)	-0.005* (0.003)	-0.007 (0.004)	0.004 (0.002)	-0.002 (0.004)
Observations	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690	198690
CM	0.006	0.095	0.156	0.056	0.019	0.126	0.033	0.035	0.079	0.010	0.001	0.016	0.007	0.142	0.009	0.018	0.080	0.021	0.051

Note: The baseline controls include: log of ZIP3 population in 2000, share of college-educated adults between age 25-64, share of foreign-borns, share of women in the labor force, and indicators for race, HS GPA, college selectivity, first-generation status, and parental education attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

TABLE A12. Effect of the 2000s housing boom on the probability of enrolling in a given major, Male students

	Ethnic	Bio	Busi	Comm	CS	Educ	Engi	English	FineA	Hist	Multi	LibArt	Math	Med	PE	PhysicalS	Psychology	PubAff	SocialS
<i>Panel A: Diff-in-Diff</i>																			
Housing Shock x Post	0.001* (0.001)	0.006*** (0.002)	0.002 (0.004)	0.000 (0.001)	-0.008*** (0.002)	-0.000 (0.001)	0.006 (0.004)	0.002* (0.001)	-0.007*** (0.002)	-0.000 (0.001)	0.001* (0.001)	-0.002*** (0.001)	0.001 (0.001)	-0.006*** (0.002)	0.001 (0.001)	0.002 (0.001)	0.000 (0.001)	0.000 (0.000)	0.004*** (0.001)
Observations	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414	284414
CM	0.002	0.063	0.224	0.030	0.094	0.035	0.179	0.016	0.066	0.017	0.001	0.009	0.009	0.058	0.015	0.041	0.023	0.002	0.049
<i>Panel B: Diff-in-Diff, Low homeownership areas</i>																			
Housing Shock x Post	-0.004** (0.002)	0.014** (0.006)	-0.001 (0.008)	-0.002 (0.002)	-0.005 (0.005)	-0.005* (0.003)	0.013* (0.007)	0.003 (0.002)	-0.009*** (0.003)	-0.000 (0.002)	0.002 (0.002)	-0.003 (0.002)	0.002 (0.002)	-0.002 (0.003)	0.001 (0.002)	0.003 (0.003)	-0.001 (0.002)	-0.001 (0.001)	0.004* (0.002)
Observations	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978	43978
CM	0.003	0.065	0.218	0.031	0.107	0.034	0.169	0.016	0.072	0.016	0.001	0.012	0.006	0.055	0.015	0.036	0.028	0.002	0.052
<i>Panel C: Diff-in-Diff, High homeownership areas</i>																			
Housing Shock x Post	0.002** (0.001)	0.004 (0.003)	0.004 (0.005)	0.003* (0.002)	-0.012*** (0.003)	0.004** (0.002)	-0.003 (0.005)	0.000 (0.001)	-0.002 (0.003)	0.000 (0.002)	-0.001 (0.001)	-0.002** (0.001)	0.002* (0.001)	-0.007** (0.003)	-0.001 (0.002)	0.003 (0.002)	0.001 (0.001)	0.000 (0.001)	0.007*** (0.002)
Observations	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557	111557
CM	0.002	0.057	0.232	0.031	0.085	0.034	0.192	0.015	0.065	0.016	0.001	0.008	0.010	0.057	0.013	0.042	0.021	0.002	0.049
<i>Panel D: Diff-in-Diff-in-Diff</i>																			
Housing Shock x Post x High h.ownership	0.006*** (0.002)	-0.012** (0.006)	0.011 (0.010)	0.004 (0.003)	-0.006 (0.006)	0.007** (0.003)	-0.014 (0.009)	-0.003 (0.002)	0.008* (0.004)	-0.000 (0.002)	-0.004** (0.002)	0.000 (0.002)	-0.000 (0.002)	-0.006 (0.004)	-0.003 (0.003)	0.001 (0.004)	0.001 (0.003)	0.001 (0.001)	0.001 (0.003)
Observations	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535	155535
CM	0.002	0.060	0.227	0.031	0.093	0.034	0.184	0.015	0.067	0.016	0.001	0.010	0.009	0.056	0.014	0.040	0.024	0.002	0.050

Note: The baseline controls include: log of ZIP3 population in 2000, share of college-educated adults between age 25-64, share of foreign-borns, share of women in the labor force, and indicators for race, HS GPA, college selectivity, first-generation status, and parental education attainment. Observations are weighted with the student's weight from TFS. Robust standard errors are in parentheses, clustered at the ZIP3 level. CM displays the average of the outcome variables in the 1999-2001 waves. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.