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Inflation and Human Capital Investment Decisions

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Abstract

This study investigates the impact of inflation on human capital investment decisions. Using a specially designed survey we estimate the causal effect of recent price level increases on the graduation plans of over 1,200 U.S. university students. We find that inflation caused over half of the respondents to alter their plans, with nearly 60 percent of these opting to accumulate less human capital and the remainder increasing their human capital by taking additional courses or pursuing double majors or advanced degrees. A comparison of empirical treatment estimates to predictions derived from our theoretical framework reveals that inflation-driven higher direct costs reduced human capital investments, particularly among those for whom inflation had reduced their ability to pay bills. Conversely, while some students merely postponed graduation because they believed inflation would not persist, higher inflation-induced uncertainty in the post-graduation labor market generally caused greater human capital accumulation, especially among economically vulnerable students and those whose confidence in finding a job after graduation had declined. The study concludes with policy implications, contributing new insights into how macroeconomic shocks affect educational choices.

JEL classification

I22, I23, I24

Keywords

human capital investments, inflation, survey data, expected outcomes

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1 Introduction

The recent rapid surge in inflation in the United States has generated significant disruptions for households, firms, and public institutions. Higher education is no exception. After a decade of relatively stable prices, the rate of inflation rose sharply, from 1.3 percent in December 2020 to roughly 9 percent by mid-2022, increasing the cost of essential goods and services that students rely on for daily life and academic progress.[1] While tuition and other fees typically adjust slowly over the academic year, costs of living adjust immediately and students were exposed to substantial short-run increases in the real cost of attending college.

These pressures are particularly consequential for the majority of undergraduates who do not attend elite institutions. Three fourths of students enrolled in Title IV institutions attend either community colleges or public universities[2], 85 percent of the US current college-going population commutes to school (Kelchen, 2018), and many US college students work substantial hours while studying.[3] For these students, even modest price-level increases can meaningfully affect the affordability of continuing or completing a degree. Moreover, some schooling-specific expenditures (like transportation or childcare costs) have risen even faster than the general price level.[4] Rising costs of housing, food, transportation, and course materials may alter academic performance, enrollment intensity, or labor supply during and after school. As a result, the recent inflationary shock may have important implications for students' educational decisions. Nevertheless, the question of how inflation affects human capital investment decisions has received limited attention in the empirical literature.

This study fills this void by investigating how college students responded to this unusual macroeconomic environment by surveying 1,218 students at the City University of New York (CUNY) during spring 2023, when inflation remained elevated at approximately 4 percent. The timing of the survey allows us to observe students' decision-making during sustained inflationary pressure, capturing adjustments after initial uncertainty had partially resolved. The setting is particularly valuable for several reasons. First, CUNY is the largest urban public university system in the United States, serving a racially diverse student population where 40 percent are first-generation college students, 55 percent are Pell Grant recipients, and 29 percent are transfer students. Second, as a commuter college where the majority of students do not live in institution-owned housing on campuses, CUNY reflects the reality of most American college students today. Furthermore, 60 percent of students in our sample work while

[1] Inflation measured as the Consumer Price Index for All Urban Consumers (CPI-U), US. city average. See BLS (2024).

[2] In 2021, 76 percent of students enrolled in Title IV institutions attended publicly controlled institutions; community colleges or public universities. Source: U.S. Department of Education, National Center for Education Statistics, IPEDS, Spring 2022, Fall Enrollment component (final data). Table 5. Title IV institutions are colleges, universities, and vocational schools authorized to participate in the U.S. Department of Education's federal student aid programs

[3] In 2020, 40 percent of full-time undergraduate students and 74 percent of part-time undergraduates held jobs. Among employed full-time students, one quarter worked at least 35 hours per week; among part-time students, over half did so.

[4] Because many students work while enrolled, expenses such as transportation and childcare are often unavoidably added to general costs of living. Specifically, gasoline prices increased by roughly 31 percent between 2021 and 2022, while childcare increased by about 7.8 percent over the same period.

enrolled, and 40 percent care for children.[5] Lastly, students at this critical life stage must actively decide whether to continue investing in education or enter (and focus exclusively on) the labor market, making their responses to inflation both immediate and consequential.

To analyze the causal impact of inflation on students' college graduation plans we follow recent advances in measuring treatment effects under uncertainty (see, e.g., Arcidiacono et al., 2020; Wiswall and Zafar, 2021; Aucejo et al., 2020; Rodríguez-Planas, 2022; Giustinelli and Shapiro, 2024), where we directly ask respondents how their experiences and expectations would have differed had prices not risen. Their responses, therefore, reflect individual-level deviations from the counterfactual state without inflation. Identification of causal effects using these subjective treatment effects requires three key assumptions, that: (1) students hold reasonably accurate beliefs about the relevant counterfactual, (2) reports of subjective beliefs are not systematically biased, and (3) reports correspond to real adjustments students have made or intend to make. We argue that these are reasonable assumptions in our context and demonstrate that our approach yields plausible treatment effect estimates consistent with theoretical predictions.

To interpret our findings, we develop a theoretical framework based on Cameron and Taber (2004) that generates testable predictions about how inflation affects human capital investment through three distinct channels. First, inflation raises direct costs (including commuting costs, childcare, and other student specific living expenses) which reduce the net gains from continued enrollment. Second, for given nominal levels, inflation erodes real wages, lowering the opportunity cost of studying and thereby increasing the relative value of remaining in school. Third, inflation-induced perceived labor market uncertainty increases the option value of additional human capital, as more educated workers likely face lower unemployment risk. The theoretical framework predicts that the first and third channels, direct costs and labor market uncertainty, should have stronger effects on borrowing-constrained students, while the second channel may be weakened or reversed for students who work while studying, as their current real earnings decline with inflation.

Our empirical results reveal that inflation substantially altered educational plans: over half of surveyed students changed their graduation trajectory in response to price level increases. Critically, we identify heterogeneous responses consistent with competing mechanisms operating simultaneously. Twenty-two percent of respondents increased their human capital investments by adding courses, pursuing double majors, or planning to pursue graduate studies: behavior consistent with the labor market uncertainty channel dominating direct cost pressures. Conversely, 30 percent reduced human capital investment either by accelerating graduation (12 percent) or delaying it without taking additional courses (17 percent). These responses are consistent with binding direct cost constraints.

Treatment effect heterogeneity analysis confirms these mechanisms. First, students whose perceived ability to pay bills declined due to inflation were significantly more likely to postpone graduation, directly supporting the direct cost channel. Second, students whose confidence in post-graduation

[5]Forty percent of survey respondents responded affirmatively to the question "Do you have any children or younger siblings for whom you are largely responsible for? "

employment had declined were significantly more likely to increase human capital accumulation, supporting the inflation-induced labor market uncertainty channel. Economically vulnerable students (Pell Grant recipients, first-generation students, and those from families below the poverty line) were more likely to increase their investments, consistent with both higher exposure to labor market risk and potentially greater returns to additional education. Third, high-class level students (juniors and seniors) and those with high institutional mistrust were more likely to delay graduation, suggesting either perceived advantages to current low-skill employment opportunities or reluctance to enter degree-required sectors during perceived labor market weakness. Lastly, we find limited support for the opportunity cost channel. While lower real wages should theoretically make schooling more attractive relative to working, most students in our sample do work while studying. For them, real wage erosion represented an additional financial constraint rather than a reduced opportunity cost, reinforcing rather than counteracting the negative effect of higher direct costs.

To the best of our knowledge, this paper provides the first causal evidence on how inflation affects higher education investment decisions. While an extensive literature examines determinants of educational choices, research on the impact of aggregate macroeconomic conditions remains limited. Recent studies have examined educational responses to the COVID-19 pandemic (see, e.g., Aucejo et al., 2020; Rodríguez-Planas, 2022), but that shock involved unique health externalities and unprecedented government support that may not generalize to other macroeconomic disruptions. Our focus on inflation provides a clear identification of how price-level changes affect human capital decisions.

In addition, we contribute to the literature on how inflation affects household behavior. Theoretically, higher expected inflation should increase current consumption and reduce savings by lowering real returns. However, inflation may also increase precautionary savings if it signals heightened macroeconomic uncertainty. Empirical evidence remains mixed: Armantier et al. (2015) document systematic relationships between inflation expectations and investment choices, while Ichiue and Nishiguchi (2015), and Bachmann et al. (2015) find limited support, and Burke and Ozdagli (2023) report weak connections between inflation expectations and spending. We extend this literature by examining human capital investments and by explicitly identifying the channels through which inflation affect such investments.

Our findings also contribute to the understanding of how macroeconomic conditions affect individual long-term outcomes. A substantial literature documents that workers entering the labor market during recessions suffer persistent earnings penalties. For college graduates in particular, these effects appear remarkably durable. Oreopoulos et al. (2012) found that Canadian college graduates entering the labor market during a recession experienced an initial wage penalty that persisted for a decade, though job mobility to better positions helped narrow the gap over time. However, Fernández-Kranz and Rodríguez-Planas (2018) demonstrate that this catch-up mechanism fails in less flexible European labor markets. Studies from Austria (Brunner and Kuhn, 2014), Norway (Raaum and Røed, 2006), and Sweden (Kwon et al., 2010) similarly document persistent negative effects, though with mixed evidence on whether returns to education mitigate these penalties. Our study complements this literature

by examining ex-ante behavioral responses, i.e., how students actively adjust their human capital investments when anticipating unfavorable labor market entry. The substantial response we document suggests that understanding educational investment dynamics during macroeconomic shocks is crucial for predicting both immediate enrollment patterns and the long-term distribution of skills in the workforce.

The rest of the paper is organized as follows. Section 2 describes the methodological approach and the data. Section 3 presents the results, and Section 4 identifies the mechanisms driving our findings. We conclude in Section 5.

2 Methodological approach and data

2.1 Survey data and data collection

Our data is from an original survey administered to City University of New York (CUNY) students between April 5th and June 21st, 2023.[6] CUNY, the public university system of New York City, is the largest urban university in the United States and a major provider of social mobility in the country (U.S. News & World Report 2023). CUNY has a large, diverse, and predominantly commuter-based student body, which makes it an ideal setting for studying responses to macroeconomic shocks, as students face inflation-driven tradeoffs representative of the broader contemporary U.S. college-going population. We received 1,218 student responses[7], with all participants 18 years old or older and having provided informed consent. We intentionally over-sampled economically vulnerable students to ensure sufficient statistical power for examining heterogeneous treatment effects by financial constraints.

In our analysis, we use the survey responses to elicit the subjective treatment effect of the recent inflation on students' college graduation plans. More specifically, the survey asked the following question: *"Has the change in prices changed your plans for graduation (relative to say October 2020 when inflation was 1.4 percent)?"* Students could select all that applied among the following answers: *"(1) They have not changed. (2) I will consider graduation earlier (if possible). (3) I will postpone graduation. (4) I will consider a double major. (5) I will consider starting graduate school. (6) I will consider taking more courses."*[8]

We then coded these responses into the following four mutually exclusive categories: *(1) No change in plans; (2) Increase in human capital (by either taking more courses, starting graduate school, or considering a double major); (3) Graduate earlier; and (4) Postpone graduation.* To do so, we followed

[6] We used Qualtrics to create the online survey and received IRB approval (IRB file #2020-0475 on July 21st, 2020, amended on March 28 2023), the evidence of which is available from the authors upon request.

[7] Our sample size is twice as large as the sample used in Wiswall and Zafar (2021), and comparable to that of Aucejo et al. (2020).

[8] Students can graduate earlier by taking the minimum required courses or summer- or winter-session courses.

the following rules. We first dropped 19 respondents who provided contradictory answers as they selected both the "no change in plans" response and at least one of the other answers. Second, we recoded the responses of 18 respondents as students who increased their human capital even though they selected both one of the responses reflecting an increase in human capital (responses 4 to 6) *and* either response 2 (graduated earlier) or response 3 (postponed graduation). Finally, we dropped 3 respondents who selected both contradictory responses (2) and (3).

As the survey asked students how their graduation plans had changed due to the change in prices since October 2020 when inflation was 1.4 percent, their responses reflect any change from the counterfactual state with low inflation to the time of the survey when inflation averaged 4 percent.[9] Yet, as explained above, inflation had been as high as 7 percent at the end of 2021 and peaked at 9.1 percent in June 2022.

Lastly, student survey responses were merged with administrative records to obtain students' socio-demographic characteristics (sex, race and ethnicity, age), college attended, class level[10], and Pell grant recipient status. Additional survey modules elicited information on work status, family structure, perceived ability to pay bills, confidence in finding post-graduation employment, and expectations about future labor market conditions—variables crucial for testing the heterogeneous treatment effects predicted by our theoretical framework.

2.2 Sample Characteristics and Representativeness

Table 1 displays the socio-demographic characteristics of our survey respondents (Column 1) and the sample size for each variable (Column 2), the socio-demographic characteristics of the CUNY student population (Column 3), and the college population in all US degree-granting institutions that grant associate's or higher degrees and participate in Title IV federal financial aid programs (Column 4).

As is shown, our sample resembles CUNY student population in the undergraduate age distribution between 18 and 24 years old as well as the proportions of Hispanic (32 percent), Asian (22 percent), 4-year degree (53 percent), and transfer students (30 percent). As we over-sampled economically vulnerable students, our sample has a larger share of Blacks (32 percent) and Pell recipients (73 percent for undergraduates) than the CUNY student population. Also, as is common in survey data, we have a higher share of female students (70 percent) than in the overall CUNY student population.

[9] Inflation, measured by the Consumer Price Index for All Urban Consumers (CPI-U), U.S. city average, all items index, was 4.9 percent, 4 percent, and 3 percent in April, May, and June 2023, respectively (see, e.g., BLS, 2024).

[10] Class level indicates whether the student is a freshman, sophomore, junior, senior, or graduate student.

Table 1: Descriptive Statistics

	Whole sample	Sample size	Registered at CUNY in Fall 2019[a]	U.S.college Statistics[c]
	(1)	(2)	(3)	(4)
Female	0.705	1,211	0.569	0.56[c]
Black	0.316	1,100	0.260	0.11[d]
Asian	0.216	1,100	0.216	0.09[d]
Hispanic	0.321	1,100	0.317	0.21[d]
White	0.159	1,100	0.204	0.53[d]
18 years old	0.165 [0.189]	1,100 [877]	Under 20 years[b]:	Under 18[e]: [0.074]
19 years old	0.114 [0.136]	1,100 [877]	[0.358][b]	18-19[e]: [0.294]
20 to 22 years old	0.211 [0.248]	1,100 [877]	[0.290][b]	20-21[e]: [0.298]
23 to 24 years old	0.085 [0.081]	1,100 [877]	[0.098][b]	22-24[e]: [0.156]
25 to 29 years old	0.124 [0.099]	1,100 [877]	[0.122][b]	25-29[e]: [0.076]
30 to 44 years old	0.225 [0.185]	1,100 [877]	[0.104][b]	30-49[e]: [0.089]
Over 45 years old	0.077 [0.062]	1,100 [877]	[0.027][b]	Over 50[e]: [0.013]
Non-US born	0.234	1,218	—	
Ever Pell receipt	0.677 [0.727]	1,205 [877]	[0.547][h]	[0.313][f]
First-generation	0.531	1,146	0.400	
Household income $<$ $35,000	0.565	1,066	—	
Responsible for children	0.371	1,126	—	
Transfer student	0.300	1,132	0.290	
Two-year college	0.314	1,042	0.238[a]	[0.078][g]
Four-year college	0.528	1,042	0.525[a]	
Graduate student	0.148	1,193	0.237[a]	
Freshman	0.185	877	0.27	
Sophomore	0.290	877	0.24	
Junior	0.185	877	0.22	
Senior	0.341	877	0.28	
Graduated from college	0.129	1,218	—	
Family income below $35,000	0.565	1,066	—	
Decreased ability to pay bills	0.323	792	—	
Employed in Fall 2019	0.609	1,21	—	
Employed at survey date	0.581	1,209	—	
Decreased confidence in finding a job	0.616	984	—	
No confidence in Biden	0.352	1,098	—	
Some confidence in Biden	0.399	1,098	—	
High confidence in Biden	0.250	1,098	—	
No confidence in the Federal Reserve	0.334	1,054	—	
Some confidence in the Federal Reserve	0.435	1,054	—	
High confidence in the Federal Reserve	0.231	1,054	—	

Notes: Variables on confidence in Biden or the Federal Reserve are constructed such that non-responses are coded as "0". The CUNY undergraduate student population was 241,080 at the time of sampling. The statistics in brackets indicate only undergraduate students. Graduate students are those seeking a Master's or Doctoral degree or a certificate and/or professional degree.

[a] *Source:* `https://public.tableau.com/app/profile/oira.cuny/viz/StudentDataBook/Enrollment`.

[b] *Excludes graduate students. Source:* `https://www.cuny.edu/irdatabook/rpts2_AY_current/ENRL_0046_AGE_TOT_PCT.rpt.pdf`

[c] *Includes all U. S. educational institutions granting associate's or higher degrees and participating in Title IV federal financial aid programs. Source: Fall-2021 (Undergraduates, public 4-year-old college)* `https://nces.ed.gov/programs/digest/d22/tables/dt22_303.60.asp`

[d] *Source: Fall-2021 (Undergraduates, public 4-year-old college* `https://nces.ed.gov/programs/coe/indicator/csb/postsecondary-students`

[e] *Source: Fall-2021 (Undergraduates, public 4-year-old college* `https://nces.ed.gov/programs/digest/d22/tables/dt22_303.50.asp`

[f] *Source: Year 2021-2022 (Undergraduates, public 4-year-old college)* **https://nces.ed.gov/ipeds/TrendGenerator/app/answer/8/35?f=5%3D1%3B4%3D1**

[g] *Source: Fall-2021 (Undergraduates, public 4-year-old college)* **https://nces.ed.gov/ipeds/TrendGenerator/app/answer/2/4?f=5%3D1%3B4%3D1**, *and* **https://nces.ed.gov/ipeds/TrendGenerator/app/answer/2/3?f=4%3D1%3B5%3D1%3B14%3D1**

[h] *Excludes graduate students. Transfers include only four-year colleges, calculated for Queens College, one of the four-year colleges.*

Accordingly, to address any concerns that our findings might not be representative of the CUNY student population, we constructed weights to reduce the gap in the proportion of females, Blacks, and Pell recipients. Appendix Table C1 shows the distribution of socio-demographic characteristics before and after the weighting. In the results section, we present estimates weighted to represent the CUNY population.

Comparing CUNY students (Column 3) to those of all U.S. Title IV degree-granting institutions (Column 4), we observe that CUNY is considerably more racially and ethnically diverse and has a higher proportion of economically vulnerable students. As CUNY is both a Hispanic- and Asian-American-serving institution, it comes as no surprise that its share of enrolled Asian and Hispanic students exceeds that of U.S. college students generally. CUNY's affordability (undergraduate tuition of $6,930 versus a national average of $20,733) attracts economically disadvantaged students, with Pell recipients comprising 55 percent of undergraduates compared to 34 percent nationally.

While CUNY students differ from the national average in these respects, the differences enhance rather than limit the policy relevance of our findings. In particular, CUNY is the fourth-largest university system in the United States, serving over 270,000 students annually. Our results apply directly to low-income college students, who represent approximately one-third of all U.S. undergraduates (Fry and Cilluffo, 2019). Furthermore, Marx and Turner (2018) demonstrates that findings from low-income student populations generalize well within this substantial segment. Commuter students, like those at CUNY, constitute over 85 percent of today's college enrollment (Kelchen, 2018), making CUNY far more representative of the typical American college experience than the elite residential institutions that dominate academic research. Our findings, therefore, speak directly to how the majority of American college students, those balancing work, family, and school while facing significant financial constraints, experience inflation's full impact on transportation, food, and childcare costs.

2.3 Survey Timing and Economic Context

The timing of our survey is crucial for interpretation. We fielded the survey in spring 2023 (April-June) when inflation had moderated to approximately 4 percent but remained well above the Federal Reserve's 2 percent target. Students were asked to compare their current graduation plans to their plans in October 2020 when inflation was 1.4 percent, that is, before the inflation surge began.

Between these two dates, students experienced the full trajectory of the inflation shock. Starting from the low base in late 2020, inflation accelerated sharply through 2021 (averaging 7 percent by December), peaked in mid-2022 (reaching 9.1 percent in June), and then gradually moderated through late 2022 and early 2023. By the time we surveyed students, inflation had been elevated for approximately two full academic years, providing ample time for students to observe price level increases, reassess their financial situations, and adjust their educational plans accordingly.

This 2.5-year window between the counterfactual baseline (October 2020) and the survey (spring 2023) offers important advantages as it captures students' responses after observing both the surge and partial reversal of inflation, allowing them to form beliefs about persistence rather than extrapolating from a single directional trend. The survey occurred after inflation had become a dominant national conversation, reducing the likelihood that students were unaware of or confused about macroeconomic conditions. Students could distinguish between temporary price spikes (like the June 2022 peak) and sustained elevated inflation. Furthermore, the extended time frame ensures that we measure considered adjustments rather than temporary reactions. Students had multiple semesters to discuss options with advisors, explore financial aid alternatives, adjust work hours, and implement plan changes. Importantly, many CUNY undergraduate students take 5–6 years, with a 6-year graduation rate of 53% and only 30% graduating in 4 years.

The economic context also matters for interpreting which theoretical channels are most salient. Labor market conditions during this period were notably strong (especially for low-wage jobs) as unemployment remained low and job openings were elevated. Yet, concerns about a future labor market deterioration were widespread in public discourse. Federal Reserve communications emphasized the need to cool the labor market to reduce inflation, and prominent economists debated whether a "soft landing" was achievable or whether substantial unemployment increases were inevitable (Summers, 2022; Ball et al., 2022; Blanchard and Bernanke, 2023).

2.4 Analytical framework

To estimate the treatment effects of decision-making under uncertainty, we follow e.g., Arcidiacono et al. (2020); Wiswall and Zafar (2021); Aucejo et al. (2020); Rodríguez-Planas (2022); Giustinelli and Shapiro (2024) and use individuals' subjective expectations. To implement this, we let $D_i(\pi' = 1)$ represent the educational investment of student i associated with the treatment of rapid increases to the price level in recent years and let $D_i(\pi' = 0)$ represent the educational investment of student i in the state of the world without this treatment. We are interested in estimating the causal impact of the recent years' high inflation:

$$\Delta_i(D) = D_i(\pi' = 1) - D_i(\pi' = 0)$$

We take advantage of students' private information on how their human capital investment was determined before the recent price level increases and how this compares to their current investment decision after months of relatively high inflation. The counterfactual, $D_i(\pi' = 0)$, which is what would have happened in the absence of high inflation, is not observed by the student or the researcher at the time of the survey. Yet, given that students can remember their investment decision when the price level was low, we can estimate an individual-level subjective treatment effect by asking students directly how the increase in prices has changed their human capital investment decisions. Since we

asked students for the change in their educational investment as a consequence of the change in prices, the outcome is binary, and we expect that students are able to respond accurately at this level of detail.

The credibility of this approach to measure the causal impact of inflation on educational investment plans through self-reported counterfactuals relies on three key assumptions.

Assumption 1 (Well-Formed Counterfactual Beliefs): Students can accurately recall their pre-inflation educational plans and understand what those plans would have been absent the price surge.

We argue that this is a reasonable assumption in our context. Students are reflecting on the timing of their graduation and actively managing course selection-decisions throughout their enrollment. Critically, the counterfactual we ask about is not abstract to students: it represents the economic environment students experienced in fall 2020 and we are asking them to recall real decisions, not imagine hypothetical alternatives. Given that graduation planning is among the most salient aspects of college student life, and that most respondents formed their initial plans relatively recently (within 3-4 years), recall accuracy should be high.

Assumption 2 (Unbiased Reporting): Students do not systematically misreport how inflation affected their decisions.

All survey research assumes honest reporting, but our design is particularly robust to common biases. We ask about *changes* rather than absolute outcomes, which implies that any consistent over- or under-statement of educational commitment cancels out. A student who exaggerates their academic ambitions would do so both for their educational plans in 2020 and in 2023, leaving the reported difference unaffected. Similarly, students do not need perfect knowledge of inflation rates, they only need to truthfully report whether they modified their plans in response to rising prices. The widespread visibility of inflation during this period through continuous media coverage, direct experience at gas pumps and grocery stores, makes it unlikely that students were confused about whether prices had risen substantially or not.

Assumption 3 (Stated Changes Match Actual or Intended Behavior): When students report altering their graduation plans due to inflation, these reports correspond to real adjustments they have made or intend to make.

A common concern in the literature is whether responses to hypothetical survey questions accurately capture real-world behavior. Recent research demonstrates strong correspondence between stated and revealed preferences when questions involve familiar, consequential decisions (Mas and Pallais, 2017; Wiswall and Zafar, 2018). Our setting satisfies these criteria exceptionally well. The decisions we study are among the highest-stake choices students make, with major financial and career consequences. Students do not casually adjust their graduation timelines. Such changes involve conversations with advisors, revised financial aid applications, renegotiated work schedules, and family discussions.

The credibility of students' responses is further supported by patterns we observe in the data. Section 4 shows that responses vary systematically with theoretically relevant characteristics: financially constrained students respond differently than others; working students show distinct patterns; students with children make different adjustments than those without. This rich, theoretically coherent heterogeneity is difficult to reconcile with arbitrary or careless survey responses.

3 Results

3.1 Treatment effects for the average CUNY student

We first analyze the average effect of inflation on college students' graduation plans. The results are presented in Table 2, where columns show results from estimations that sequentially add different sets of control variables. We present unweighted (odd columns) and weighted estimates (even columns), and each row presents the results for one outcome.

The first row of Column 1 displays the average treatment effect for all survey respondents. We find that 51.6 percent of students modified their graduation plans and thus changed their human capital investment choices due to recent rapid price level increases. This remarkably large behavioral response underscores the strong influence of macroeconomic conditions on individual-level human capital decisions.

The nature of these adjustments, shown in the subsequent rows in Column 1, reveals important heterogeneity in student responses. Twenty-two percent of all respondents, i.e., approximately two-fifths of those who modified their graduation plans, chose to increase their investment in human capital by adding courses, pursuing an additional major, or enrolling in a higher degree program. This countercyclical investment behavior suggests that, for a portion of students, inflation creates incentives to enhance educational credentials, possibly to improve labor market competitiveness or signal quality to employers in uncertain economic times.

Table 2: Inflation Treatment Effects on Human Capital Investment Decisions

	Unweighted estimates	Weighted estimates	Unweighted estimates	Weighted estimates	Unweighted estimates	Weighted estimates	Unweighted estimates	Weighted estimates	Unweighted estimates	Weighted estimates
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No change in graduation plans	0.484*** (0.014)	0.494*** (0.017)	0.363*** (0.045)	0.334*** (0.048)	0.489*** (0.057)	0.456*** (0.061)	0.455*** (0.065)	0.371*** (0.071)	0.383*** (0.120)	0.263* (0.136)
Plans to accumulate more human capital	0.219*** (0.012)	0.200*** (0.013)	0.260*** (0.038)	0.284*** (0.044)	0.158*** (0.048)	0.190*** (0.052)	0.168*** (0.055)	0.221*** (0.062)	0.181* (0.101)	0.171** (0.079)
Plans to graduate earlier (with no additional HC accumulation)	0.124*** (0.009)	0.128*** (0.011)	0.139*** (0.030)	0.149*** (0.035)	0.131*** (0.039)	0.152*** (0.045)	0.101** (0.044)	0.147** (0.051)	0.100 (0.082)	0.243** (0.111)
Plans to postpone graduation (with no additional HC accumulation)	0.173*** (0.011)	0.178*** (0.013)	0.238*** (0.034)	0.232*** (0.041)	0.221*** (0.043)	0.203*** (0.051)	0.276*** (0.049)	0.262*** (0.060)	0.336*** (0.090)	0.324*** (0.112)
Sample size	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218	1,218
Sex, race, ethnicity, and age			✓	✓	✓	✓	✓	✓	✓	✓
Pell, income, US born, children, first generation					✓	✓	✓	✓	✓	✓
Class level, graduate level, college graduate							✓	✓	✓	✓
College attended									✓	✓

Notes: The table reports change due to inflation. Estimates in columns 3 and 4 include gender, race and ethnicity, and age dummy variables. Estimates in columns 5 and 6 add the following covariates to those in columns 3 and 4: Pell Grant recipient, family household < $35,000, foreign-student, first-generation student, transfer student, and caring for a child / children or sibling(s) dummy variables. Estimates in Columns 7 and 8 add the following covariates to those in columns 5 and 6: college class level, graduate student, and whether they already graduated from college. The last two columns add college attended fixed effects to the specifications in columns 7 and 8. When there was no response for a particular covariate, it was coded so that the sample size would not be reduced and a covariate was added indicating whether the variable had a non-response for any given individual. Standard errors are reported in parentheses. Weighted estimates use weights to make the sample representative of the CUNY population.
, **,* Estimate significantly different from zero at the 0.1, 0.05, or 0.01 level.*

However, the majority of students who altered their plans moved in the opposite direction. The remaining three-fifths of those who modified their graduation plans either decided to graduate earlier than originally planned (12.4 percent of all respondents) or to postpone graduation (17.3 percent), in either case accumulating less human capital than initially intended. For these students, representing 29.7 percent of all respondents, inflation negatively impacted their human capital investment decisions, likely through increased direct costs of education, heightened opportunity costs from perceived advantages to current low-skill employment opportunities, or binding credit constraints. This substantial reduction in planned human capital accumulation has important implications for both individual lifetime earnings and aggregate economic productivity.

The robustness of these findings is crucial for establishing their validity and policy relevance. Any concern that our estimates might be upwardly biased if students who subjectively felt more affected by inflation, regardless of whether that feeling aligned with objective reality, were more likely to respond to the survey than others are addressed in Column 2, which displays weighted estimates. If such bias existed, the weighted estimates representing a change in plans would be systematically smaller than the non-weighted ones.

Importantly, we find no evidence of this bias when comparing the average treatment effects shown in Columns 1 and 2. The stability of estimates across weighting schemes provides strong evidence that our findings reflect genuine behavioral responses rather than selection artifacts, lending credibility to the magnitudes we report and suggesting that inflation's impact on human capital investment is both real and substantial across CUNY student population.

3.2 Average treatment effects for a reference group

While estimates in Columns 1 and 2 present aggregate treatment effects for the average CUNY student, estimates in the Columns 3 to 10 show treatment effects on a reference group determined by the socio-demographic controls we include in the regression. It is important to underscore at the outset that the estimates for the average CUNY student presented in Columns 1 and 2 are the most policy-relevant statistics from our analysis. These average treatment effects capture the overall impact of inflation across the diverse CUNY student population and are most informative for assessing the macroeconomic implications for human capital formation. The reference group estimates in subsequent columns, while informative about how effects vary with student characteristics, describe impacts for a specific demographic profile that may not be of particular interest unless one has reason to focus on such a group.

That said, examining how estimates change as we add controls and define specific reference groups does reveal an important pattern: regardless of which reference group we specify, a substantial share of students changes their graduation plans in response to inflation. In our most saturated model, presented in Columns 9 and 10, the reference group and hence the estimates displayed are for a 20-

to 22-year-old US-born Hispanic male who has never been a Pell-grant recipient, is not the first in his family to attend college, is not responsible for caring for a child or sibling, is a senior in college attending City College, and whose family income is above the poverty line. For this particular reference student, the effect of inflation on the decision to graduate early increases from 12.4 percent (for the average student) to 24.3 percent, while the effect on postponing education nearly doubles from 17.3 percent to 32.4 percent. The impact on decisions to accumulate more human capital shows a marginal decrease from 21.2 percent to 17.1 percent.

The key takeaway from this comparison is not that these particular magnitudes for this particular reference group are inherently meaningful, rather they demonstrate the sensitivity of educational decisions to inflation remains substantial even when conditioning on specific demographic characteristics. The differences between average effects and reference group effects reflect the complex interplay of multiple factors including race and ethnicity, sex, class level, economic circumstances, and credit constraints that shape how students respond to inflation.

These varying response patterns across reference groups imply that different students respond through different mechanisms and face different binding constraints. We systematically unpack these patterns in two steps: in the next sub-section, we examine treatment effects across specific demographic groups to document how responses vary along key dimensions; subsequently, in Section 4, we develop and test a theoretical framework that identifies the specific mechanisms driving these differential behavioral responses.

3.3 Treatment effects for different demographic subgroups

We explore the role of demographic characteristics by examining average treatment effects by race, ethnicity, age, and sex. The results are shown in Appendix Figure B.1 and Appendix Table C2. The pervasiveness of the effect of inflation on human capital investment decisions across traditional demographic divides is immediately apparent: between two-fifths and three-fifths of students in every demographic group changed their graduation plans. The widespread nature of these responses underscores that inflation has a broad-based impact on educational decision-making which is not concentrated in specific demographic segments.

Rates of modified graduation plans vary by race and ethnicity, from a low of 37 percent among White students to a high of 61 percent among Asian students; rates exceed 50 percent for Black students and fall just under 50 percent for Hispanic students. However, important heterogeneity emerges in the nature of students' responses. Notably, inflation caused Black and Hispanic students to be substantially more likely to invest in human capital relative to White students (25 percent versus 15 percent). Conversely, Asian and Hispanic students (29 and 19 percent, respectively) were considerably more likely to postpone graduation than White students (14 percent) and Black students (11 percent).

Age-based heterogeneity reveals additional insights into student decision-making. Perhaps not surprisingly, students aged 30 and older were the least likely to defer their graduation plans. These students are likely returning students seeking to complete previously unfinished undergraduate degrees.

Interestingly, we observe no statistically or economically significant gender-based differences in responses to inflation. Thus, both male and female students exhibited similar rates of modifying graduation plans and similar distributions across types of modifications (accelerating, postponing, or intensifying study).

4 Underlying mechanisms

To identify the mechanisms behind the relationship between inflation and students' graduation plans we set up a simple theoretical framework for students' human capital investment decisions. We outline mechanisms and derive both directional predictions against which we interpret empirical sub-group analysis results.

4.1 Theoretical channels of impact

Our theoretical framework is based on the model of Cameron and Taber (2004) in which students choose an educational level, s, to maximize their net lifetime utility by weighing the direct and opportunity costs against higher future earnings subject to a borrowing constraint.[11] We adapt their model to our setting by letting both direct and indirect opportunity costs depend on inflation. Furthermore, we introduce a source of return uncertainty via the presence of inflationary shocks that may, in turn, affect future labor-market uncertainty. Specifically, we follow Belzil and Hansen (2002) who feature return uncertainty as uncertainty about students' future employment rate and, hence, future earnings.

We assume that students have already chosen to enter college but re-evaluate their choices as circumstances change. Hence, the student's problem in our setting is to choose either to continue with the initial college graduation plan or to change it by decreasing or increasing the size of the investment when faced with a rapidly rising price level. Students' borrowing constraints are modeled as high-wealth individuals or families being able to borrow at favorable interest rates, while low-wealth individuals can only borrow under less favorable conditions or not at all. In particular, the former are considered as unconstrained and borrow at the market rate and the latter are considered as constrained and borrow at a rate higher than the market rate.[12]

[11] The Cameron and Taber (2004) model is summarized in our Appendix A.

[12] A drawback of this approach is that a high lifetime borrowing rate also implies high returns to savings after entering the labor market. However, we follow Cameron and Taber (2004) who assume that constrained low-wealth individuals only face higher borrowing rates than less constrained high-wealth individuals while in school. After graduation, both groups face the same (lower) rate.

As summarized in Table 3, we stipulate three main theoretical channels through which inflation may impact the educational choices of students. In what follows, we describe each channel of impact in detail.

Table 3: Theoretical impact of inflation on human capital investment decisions

Channel	Effect on Investment	Heterogeneity
Higher Direct Costs[a]	Negative	Stronger for credit-constrained
Lower Opportunity Costs[b]	Positive	No differential effect; ambiguous for working students
Labor Market Uncertainty[c]	Positive (if persistent)	Stronger for credit-constrained

Notes: Column 1 presents the three theoretical channels of impact, and Column 2 the shows predicted effect of each channel on human capital investments. Column 3 declares whether the effect is predicted to differ across students types.
[a] Since many students rely on short-term consumer credits, we assume that any inflation-induced real interest rate reduction is offset by frequent resets of the nominal interest rate resets.
[b] The opportunity cost channel has an ambiguous effect on working students since inflation-induced real wage reduction, on the one hand, has positive effect on human capital investments. On the other hand, a lower real value of current earnings makes working students more exposed to the negative impact of direct costs on human capital accumulation. Adding to complexity, the concurrent wage compression and rapid nominal low-skilled wage growth likely had a negative effect on human capital investments.
[c] The effect of the labor market uncertainty channel hinges on whether students perceived as the effect of inflation as persistent on the labor market, since temporary changes in labor-market conditions should generally yield no effect on human capital investment decisions. The positive effect of the labor market uncertainty channel is also based on the assumption that this effect dominates any negative impact of the nominal relative wage reduction induced by concurrent wage compression.

4.1.1 Channel 1: Higher Direct Costs

To attend college, students must finance any direct human capital investment costs. Direct human capital investment costs include not only tuition, fees, and books, but also schooling-specific living expenses such as transportation, housing, and childcare that the student would not have incurred had she not been enrolled in college.

We model total direct costs as $\tau_s = A + PX$, where A represents tuition and fees, X denotes units of consumption goods required for schooling, and P is the price level. Following Cameron and Taber (2004), we treat tuition and fees, represented by A, as fixed over the decision horizon. Although college tuition and fees in the US are not fixed, their short-run movements are typically modest. For example, from the second half of 2019 to the end of the first half of 2023, average tuition and fees nationwide increased by only about 5.15%, whereas the Consumer Price Index (CPI) rose by approximately 19.6% over the same period.[13] This implies that real tuition costs were declining over these years, which, in turn, may have nudged some students toward increased human capital investments.[14]

[13] At CUNY, tuition was stable at $6,930 per year for senior colleges and $4,800 per year for community colleges after a $200 increase in 2020–2021 (plus mandatory fees of $400–$640 annually).

[14] Students who borrowed prior to the recent inflation surge benefited from an inflation-induced reduction in the real value of their outstanding debt. This effectively lowered the real cost of past human capital investments and may have encouraged students to further increase their educational investment. However, this benefit applies only to existing debt: interest rates on new student loans, e.g., Federal Direct Loans, were reset at substantially higher levels, increasing the cost of taking on new debt. For students who rely on borrowing to finance their education, these higher borrowing rates may offset or even dominate the positive effect arising from the real erosion of preexisting debt.

We let schooling-specific costs of living, captured by PX, depend directly on the general price level. The schooling-specific consumption bundle, X, represents essential inputs such as transportation, food, and childcare. Empirically, several components of schooling-specific living costs increased more rapidly than the overall CPI during our study period. Gasoline prices (measured as a six-month average) rose by 31.3%, far outpacing overall inflation and directly affecting students who commute to campus. Tuition and other fees including childcare costs rose by 7.82%, while college textbooks increased by only 1.9%. These heterogeneous price movements indicate that non-tuition schooling expenses can shift significantly even when tuition remains relatively stable. Index series of changes in tuition (with and without childcare tuition), gasoline, college books and supplies, the CPI, as well as borrowing rates on Federal Direct Loans and credit cards are reported in Appendix Table C3.

Furthermore, an increase in direct schooling costs will affect borrowing-constrained students more severely than unconstrained students. For borrowing-constrained individuals who must finance costs through expensive loans, a dollar increase in τ_s leads to greater marginal utility loss than for unconstrained students who can finance costs at lower rates or from savings. In contrast, unconstrained students face lower borrowing costs and are better able to smooth consumption in response to the same cost increase.[15]

However, a rapid increase in the price level potentially induce a decline in the real interest rate faced by borrowers. If nominal borrowing rates are fixed, or adjust slowly relative to inflation, the real cost of borrowing falls, thereby loosening the effective borrowing constraint. In our theoretical framework, a lower real interest rate reduces the real cost of human capital investment and increases the incentive for students to invest more in education, especially for constrained students who initially face a relatively high interest rate. This mechanism, however, depends critically on the degree to which nominal borrowing rates adjust. Many students rely on credit cards or other forms of short-term consumer credit with flexible interest rates to finance schooling-related expenses. Flexible interest rates adjust in response to changes in market conditions and therefore rise in line with or faster than inflation, leaving the real borrowing rate unchanged or possibly even higher, which would instead tighten the borrowing constraint rather than relax it.

Empirically, average credit card interest rates in the US were approximately 14.5% from the end of 2019 until mid-2022. As inflation rose and the central bank raised the monetary policy rate, nominal credit card rates increased sharply, reaching roughly 20% by mid-2023. This rapid adjustment in nominal rates implies that the real interest rate on short-term credit may even have risen. Therefore, in our modeling framework we assume that real borrowing rates remain unchanged.

In sum, an increase in the price level mechanically increases the out-of-pocket cost of maintaining a schooling-specific consumption bundle. As a result, the likelihood that students change their human capital investment decisions increases, potentially reducing the amount of schooling they choose to undertake. This effect is stronger for borrowing-constrained students.

[15] Cameron and Taber (2004) provide formal proof in their Section III that the marginal utility cost of higher direct expenses is increasing in the interest rate faced by the student.

4.1.2 Channel 2: Lower indirect costs

Students also face indirect human capital investment costs in the form of foregone earnings, that is, the opportunity cost of time spent studying. Empirically, these indirect costs can be estimated as the wage that students could earn in local low-skilled labor markets at the time educational choices are made (Cameron and Taber, 2004). Accordingly, we refer to the level of indirect costs as the level of the low-skilled wage.

For a given the nominal wage, W_s^n, the corresponding real wage is given by $W_s = W_s^n/P$ where P denotes the price level.[16]. Under nominal wage rigidity, an increase in the price level reduces real wage earnings, and thus, lowers the opportunity cost of studying. A lower opportunity cost increases the net utility gain from education and raises the likelihood of increased human capital investment. While nominal wages eventually adjust, short-run rigidity implies that inflation may temporarily reduce real wages, and therefore indirect costs, over a sizeable portion of a four-year college education. Any effects on expected future real earnings are assumed to be limited.

These predictions rely on the assumption that nominal wages exhibit short-run rigidity. If nominal wages adjust frequently, inflation-induced reductions in real wages may be small or nonexistent. In the years following the COVID-19 pandemic, a strong demand-driven recovery and intensified labor market competition was observed where low-skilled nominal wages were reset at a faster rate than high-skilled wages. This, in turn, lead to an unexpected compression of the college wage premium (see, e.g., Autor et al., 2023; Cerrato and Gitti, 2022). While Autor et al. (2023) find that the wage compression was most pronounced among young non-college workers and they primarily attribute it to heightened labor market competition.[17], Cerrato and Gitti (2022) find that the same demand-driven recovery contributed substantially to rising inflation through stronger price responses to economic activity.[18] Consequently, the rapid post-pandemic increases in nominal low-skilled wages may have offset or even reversed any inflation-induced decline in real wages. As a result, opportunity costs may have remained unchanged or even increased, thereby muting or even counteracting the positive effect of inflation on human capital investment.

All else equal, changed opportunity costs affect constrained and unconstrained students similarly since these costs do not require financing. However, two important caveats apply. First, for students who work while enrolled, an inflation-induced reduction in current real earnings would tighten students' borrowing constraints and potentially offsetting or reverse any positive effect. Thus, instead of making schooling relatively more attractive, falling real earnings may thus reduce students' ability to finance continued enrollment. Second, if nominal low-skilled wages adjust fast enough to counteract any negative effect on real earnings, the relative wage shifts. As constrained students require a higher

[16]Empirical evidence for the United States suggests that nominal wages are typically reset once per year (Olivei and Tenreyro, 2010)

[17]Autor et al. (2023) document that, in real terms, hourly earnings at the 10th percentile of the wage distribution rose by 7.8% between January 2020 and June 2023, while real earnings at the 50th and 90th percentiles declined.

[18]Cerrato and Gitti (2022) estimate that approximately 1.4% of the 5.6% increase in all-items inflation between March 2021 and September 2022 is attributable to demand-side forces.

relative wage to compensate for their higher effective investment costs compared with unconstrained students, a decline in the relative wage disproportionately discourages human capital investment among constrained students.[19]

In sum, for a given nominal low-skilled wage inflation reduces opportunity costs, which encourages further human capital investments. Except for students who work while enrolled, for whom the effect is ambiguous. If nominal low-skilled wages are reset fast enough, the positive effect on human capital investments may be muted or even reveresed, especially so for constrained students.

4.1.3 Channel 3: Labor market uncertainty

Finally, students' human investment decisions may be influenced by macroeconomic variables that create uncertainty about future labor market prospects and thus the return on their investments. We model this uncertainty by letting future labor earnings not only depend on educational attainment but also on aggregate uncertainty. We consider the recent rapid increase in inflation as a potential source of such aggregate uncertainty which may be perceived as having persistent enough to affect students' future employment rates.[20]

The recent years' rapid inflation in the U.S. is believed to initially reflect strong aggregate demand (see, e.g., Cerrato and Gitti, 2022), interacting with sectoral supply constraints. These pressures proved more persistent than initially expected and broadened into general price increases (Blanchard and Bernanke, 2023). At the same time, uncertainty surrounding a disinflationary process intensified, with competing views on whether restoring price stability would require a modest slow-down of the labor market or entail a costly recession (Summers, 2022; Ball et al., 2022). As for the general public, survey evidence suggests that households did not think of the potential short-run benefits of inflation, such as stronger economic activity. Instead, they focused on downside risks of inflation (Stantcheva, 2024). Taken together, while the relationship between (dis)inflation and labor market conditions remains an empirical question, the observed development plausibly increased students' perceived uncertainty about future labor market outcomes.

We define nominal labor earnings for schooling level s as $W_s^n = w_s^n e_s$, where e_s denotes the future employment rate. We specify the employment rate as $e_s = a + \rho s + \varepsilon$, where a is the long-run average employment rate, s is the schooling level and $0 < \rho < 1$ captures the positive effect of education on the employment rate. Lastly, ε represents an aggregate shock.[21] In our setting, we consider a negative realization of ε to correspond to a perceived deterioration in future labor market conditions due to an

[19] See Proposition 3 in Cameron and Taber (2004).

[20] A truly random and temporary inflationary surprise should only have a *temporary* impact on the future employment rate.

[21] We start out from Belzil and Hansen (2002)'s log-linear expression for the employment rate, $e = \kappa_0 + \kappa_1 s + \kappa_2 E + \kappa_2 E^2 + \varepsilon$, and adjust it in two ways to fit our setting. First, for simplicity, we abstract from experience, E, in the labor market. Instead, we focus on level of schooling and thus let employment increase with education. The resulting expression for the employment rate is therefore $e = a + \rho s + \varepsilon$, where $0 < \rho < 1$. Second, in our setting ε represents an unexpected surge in inflation.

unexpected surge in inflation. This lowers the future employment rate and future earnings, and hence lowers returns on students' human capital investments. Conversely, a positive realization of ε would be associated with a higher future employment rate and earnings, and thus higher returns on students' investments.[22]

Since students may improve their future employment rate, e_s, by accumulating more human capital, students who increase their investment may counteract negative realizations of ε and thus be relatively less affected by an unexpected surge in inflation. Thus, for given levels of relative wages, w_1^n/w_0^n, the expected difference in relative wage earnings, $W_1^n/W_0^n = w_1^n e_1/w_0^n e_0$, increases with the level of schooling, s, providing students with an incentive to accumulate more human capital. However, just as for the opportunity cost channel, the mechanisms of this channel may be weakened by the post-pandemic college wage premium compression (see, e.g., Autor et al., 2023). A wage premium compression shifts the relative wage downward. If students do not expect college wages to catch up, the relative wage reduction dampens the increase in expected relative earnings induced by increased human capital investments.

Borrowing-constrained students are more affected by changes in relative wages as they are faced with higher effective investment costs and therefore require higher expected returns to education. (see Proposition 3 in Cameron and Taber, 2004) As a result, borrowing-constrained students should respond more strongly to the incentive to increase s in order to improve future employment prospects and hence relative future earnings. Yet, borrowing-constrained students are also more sensitive to changes in expected relative earnings induced by a lower college wage premium.

In sum, inflation-induced labor market uncertainty which is perceived as persistent enough to affect students' employment prospects may increase students human capital investment, particularly among borrowing-constrained students. Yet, this effect may be dampened by the concurrent compression of the college wage premium.

4.2 Subgroup analysis and hypotheses testing

The average treatment effect showed that inflation induced roughly half of the respondents to change their graduation plans and 22 percent of students chose to increase their human capital investments. Thus, for these students, the overall positive impact of inflation on human capital investment dominated any negative impact, suggesting that the theoretical channels driving these students' decisions include a lower opportunity cost of working during college and/or the incentive to accumulate more human capital to compensate for an inflation-led adverse aggregate employment shock.

The remaining students chose to accumulate less human capital by either graduating earlier than

[22]For illustrative purposes we here focus on the downside risk, i.e., that higher inflation may lead to higher future unemployment rates. Yet, we recognize that higher inflation may have potential short-term positive economic associations such as initially lower unemployment or enhanced economic activity.

planned or postponing graduation. Hence, for three-fifths of the respondents who changed their graduation plans, inflation impacted their human capital investment decision negatively primarily through higher direct costs.

To identify which mechanisms are at play for different types of students, in this sub-section, we contrast our theoretical predictions with empirical estimates of the impact based on students' characteristics. Figures 1 to 4 present estimates for different types of survey respondents based on their: (1) reduced capacity to pay bills due to inflation or their economic vulnerability; (2) pre-inflation employment; (3) perceptions of future labor market uncertainty; and (4) confidence in two institutions responsible for the economy: the Federal Reserve and the President of the United States. A lower confidence in either institution may suggest that the perception of the future labor market is gloomier. Each figure presents the results for each of the four decision outcomes separately: maintain graduation plans (Panel A); accumulate more human capital (Panel B); postpone graduation (Panel C) and graduate earlier than initially planned (Panel D). As explained in section 2.1, the decisions to postpone or speed up graduation are defined without any accumulation of human capital.

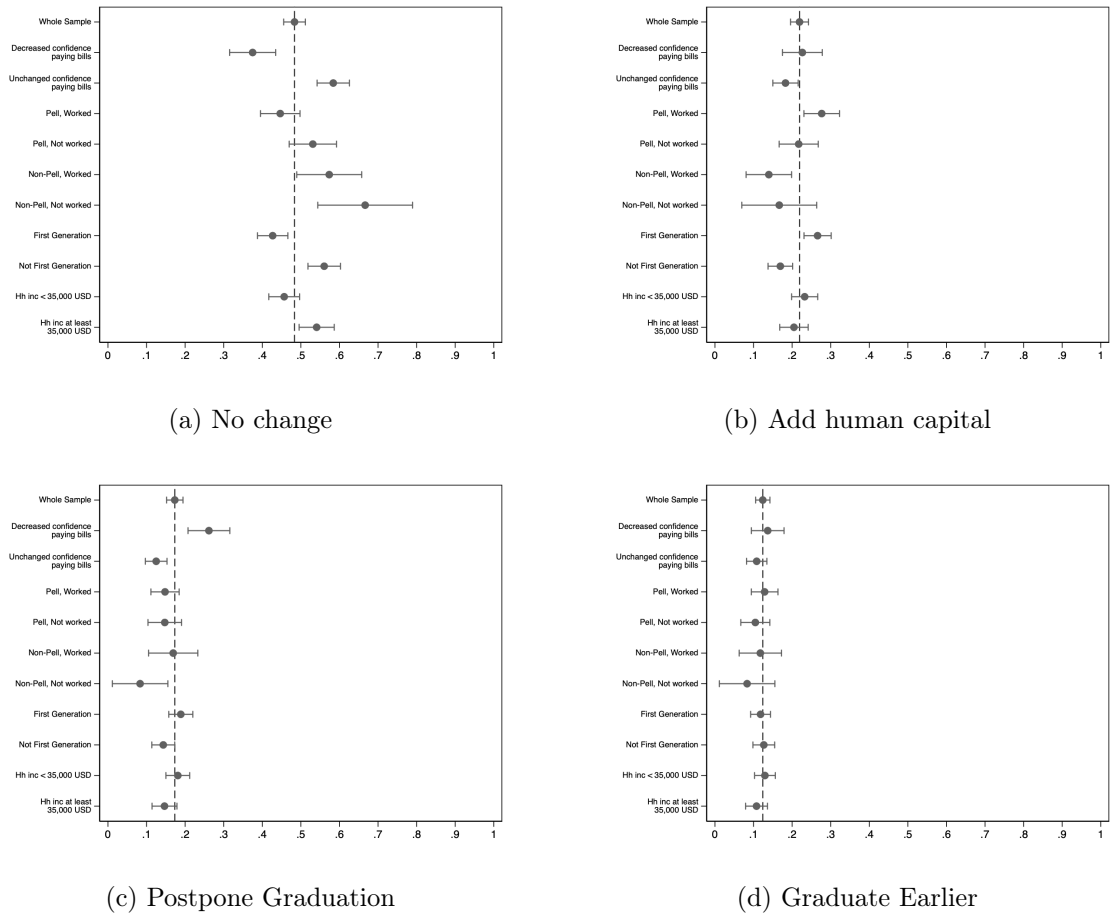
4.2.1 Testing the direct cost channel

Students' abilty to pay

To test whether an increase in direct costs driven by inflation influences decisions to reduce human capital accumulation, we classified students based on how their ability to pay bills had been impacted by the recent rapid rise in prices. In the survey, we asked students the following question: *"Has the change in prices changed your ability to pay in full any of the following in February 2023 (relative to say October 2020 when inflation was 1.4%)"*? This question was asked for the following items: rent or mortgage, credit card, utilities, phone and cable, car payment, student loans, and other bills. We classified respondents by whether they reported that their ability to pay in full any of the bills mentioned above had decreased or, if instead, it had not changed. By classifying students in this manner, we can test whether students whose ability to pay bills due to inflation had decreased (and, hence, who perceived higher direct costs of inflation) had changed their human capital investment decisions relative to students whose capacity to pay bills did not decrease. Indeed, as shown in Table 1, we find that 32 percent of respondents reported a reduction in their ability to pay bills.

Panel A of Figure 1 (and also Appendix Table C4) shows that students whose ability to pay bills decreased due to inflation were more likely to change their graduation plans than those whose ability to pay had not been affected by inflation (63 percent versus 42 percent, respectively) and Panel C shows that they were twice as likely to reduce human capital investment by postponing graduation than those whose ability to pay had remained intact (26 percent versus 13 percent). We observe no statistically significant differences across the two groups of students in their decision to either increase human capital (Panel B) or graduate earlier (Panel D). These results are largely in line with Stantcheva (2024) who finds that many individuals feel that inflation systematically erodes their purchasing power.

Furthermore, Stantcheva also finds that lower-income respondents report being most adversely affected.



(a) No change

(b) Add human capital

(c) Postpone Graduation

(d) Graduate Earlier

Figure 1: Economical vulnerability

Panel (a) shows the students who report no change in their graduation plans due to the recent rapid increase in the price level, (b) those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.

Economically vulnerable students

With the following subgroups in Figure 1 we explore whether the impact of inflation on student human capital investment decisions is stronger for borrowing-constrained students than for non-borrowing-constrained students. We define economically vulnerable students in different ways by whether or not: (1) they had ever been Pell recipients and/or had to work, with those who both worked and were Pell recipients being the most economically vulnerable and those who neither received the Pell grant nor worked in the past being the least vulnerable; (2) their family income was above the poverty line; and (3) they were the first in their family to attend college. According to estimates in Table 1, 45 percent had been Pell recipients and worked prior to the price level increases, 32 percent had been Pell recipients but did not work prior to rapid inflation, 17 percent were not Pell recipients but had worked, and 7 percent were not Pell recipients nor did they work before the rapid inflation; 57 percent

were from families with a household income below the poverty line; and 53 percent of the respondents were the first in their family to attend college.

We find that the impact on students' decisions to change their graduation plans due to inflation is directly related to their economic vulnerability as there is a clear monotonic pattern across the four categories defined by whether a student was a Pell recipient and had worked prior to the price increases, with Pell recipients who worked being considerably more likely to change their graduation plans than non-Pell recipients who never worked. Similarly, students whose household income was below the New York poverty line and students who were the first in their family to go to college were more likely to change their graduation plans due to inflation than their counterparts. Panel A shows that 55 percent of Pell recipients who worked, 54 percent of students with household income below the poverty line, and 57 percent of first-generation students changed their graduation plans because of inflation relative to 33 percent of non-Pell recipients who never worked, 46 percent of students with household income above the poverty line, and 44 percent of non-first-generation students. These differences are statistically significant.

As for what these economically vulnerable students did when they changed their graduation plans, they invested in more human capital, which is consistent with our prediction that inflation, via the labor market uncertainty channel, has a greater impact on those who are more borrowing-constrained. Indeed, as shown in Panel B, rapid inflation caused Pell recipients who worked to be more likely to increase their human capital than non-Pell recipients who worked (28 vs. 14 percent) and first-generation students were more likely to invest in more human capital than non-first-generation students (27 vs. 17 percent). These differences are also statistically significant.

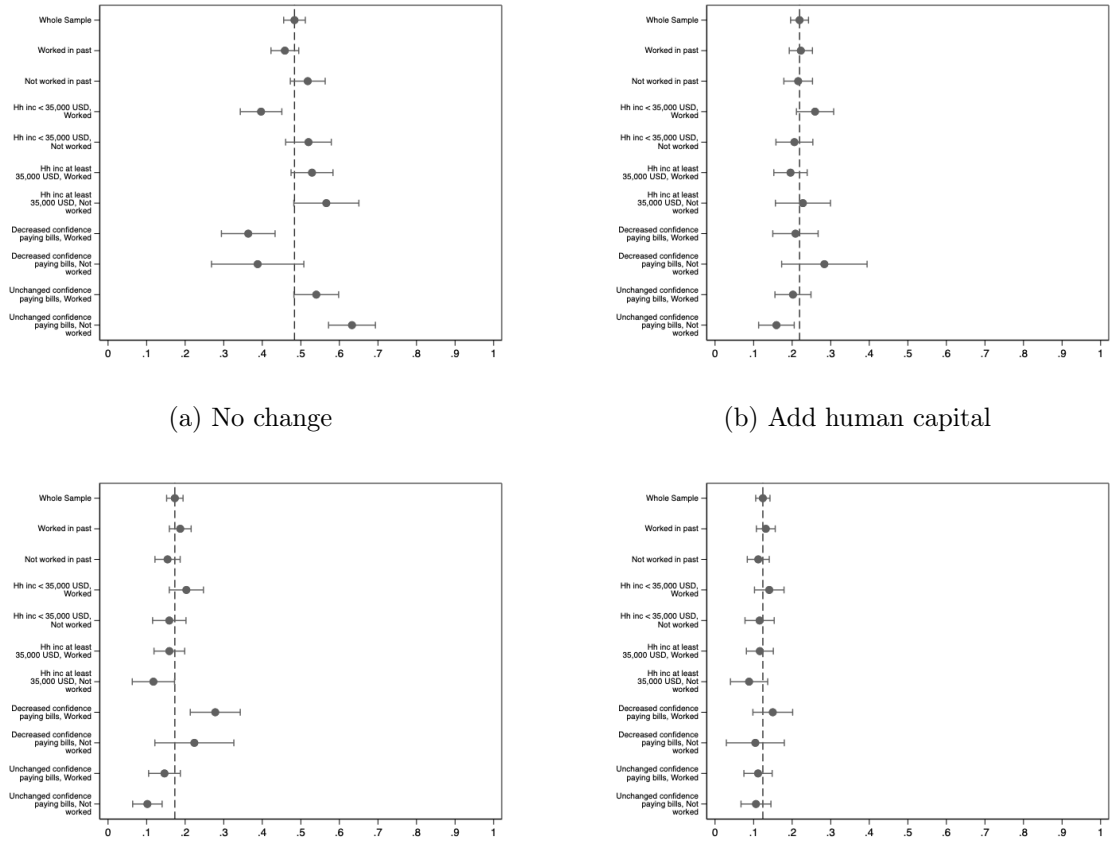
While economically vulnerable students were more likely to postpone graduation than their counterparts, these differences are not statistically significantly different from zero, providing only weak support for the prediction that increased inflation has a greater impact on those more borrowing-constrained due to the impact of higher direct costs. Finally, we find no statistically significant differences between economically vulnerable students and their counterparts in the likelihood that rapid inflation would cause them to graduate earlier than initially planned (shown in Panel D).

4.2.2 Testing the indirect cost channel

Unlike direct costs, the indirect costs of human capital investment do not require funding. Yet, they still create an opportunity cost for students as they represent the earnings that students could have gained if not in college. Thus, if inflation rises for a given nominal wage, the real value of that wage falls and so does the opportunity cost of an education which, in turn, raises the incentive to accumulate more human capital. In order to measure student awareness of the lower opportunity cost of education caused by inflation, we consider their labor market status before the recent price level increases. Students who have worked in the past are more likely to be better informed about the

opportunity costs of college education as they have actively participated in the local labor market. Estimates in Table 1 show that 61 percent of respondents worked prior to the increases in the price level.

Figure 2 shows the impact of inflation on student graduation plans, categorized by their prior labor market status. Panel A shows that the impact is marginally larger for those who worked in the past than for those who did not (54 versus 48 percent), but this difference is not statistically significant. Importantly, we find no evidence that the opportunity cost channel operates here, as the treatment effect on both groups of students to increase their human capital is 22 percent, as shown in Panel B.



(a) No change

(b) Add human capital

(c) Postpone Graduation

(d) Graduate Earlier

Figure 2: Opportunity Costs

Panel (a) shows the students who report no change in their graduation plans due to the recent years' rapid increase in the price level, (b) shows those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.

As discussed in Section 4.1.2, indirect costs should not affect borrowing-constrained and non-borrowing-constrained students differently because these costs do not require funding. Nonetheless, to explore whether there is any support for this channel across different subgroups based on their economic

vulnerability or their ability to pay bills, the remainder of Figure 2 illustrates the impact of student pre-inflation labor market status as it interacts with either their capacity to pay bills or their economic vulnerability (defined by family income being below the poverty line).[23]

Again, we do not find any evidence supporting an inflation-driven opportunity cost channel across any of these subgroups, as there are no statistically significant differences observed in Panel B between those who had worked in the past and, hence, may be more aware of the opportunity costs of studying, and those who did not work. We arrive at the same conclusion if we use current employment status as a proxy for student awareness of the opportunity costs of working, as shown in Appendix Figure B.2. Across the subgroup categories, those who currently work are no more likely to accumulate human capital than those who do not.

Finally, it is plausible that the lack of evidence of the lower opportunity cost among students who are borrowing-constrained could be explained by a reduction or even a reversal of the positive effect on human capital accumulation for students who work while studying. This is because the lower real value of their current earnings makes working students more vulnerable to the negative impact of inflation-driven direct costs on human capital accumulation. However, we find this unlikely, as only 11 percent of Pell recipients who worked in the past, 23 percent of students whose confidence in paying bills decreased and 38 percent of students whose family income is below the poverty line reported that they were currently working at the time of the survey. Nonetheless, Appendix Figure B.3 re-estimates Figure 2 using only respondents who currently work. Comparing Appendix Figure B.3 (sub-sample of students who currently work) and Appendix Figure B.2 (all students) does not reveal much difference in students' decisions to invest in human capital based on their current work status.

4.2.3 Testing the labor market uncertainty channel

As explained in Section 4.1.3, if students perceive the recent increases in inflation to have persistent effects on the labor market they are predicted to be incentivized to accumulate more human capital and, in doing so, improve their future labor market prospects. This section tests the extent to which the empirical evidence supports this channel. To do so, we present estimates as to whether students report a decreased confidence in finding a job after graduation due to inflation and whether they mistrust institutions directing the US economy. The assumption here is that those who mistrust these institutions may be more likely to believe inflation will have persistent and negative effects on their net human capital investment by reducing their future labor market prospects. We also compare students from higher and lower university classes, as the former are closer to graduation and hence more likely to be impacted by any inflation-driven labor market uncertainty.

Students' self-reported change in confidence in finding a job after graduation

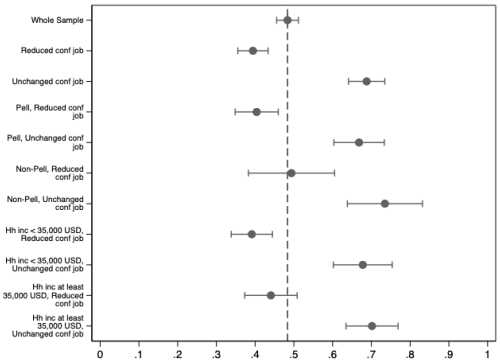
[23] Figure 1 already displayed estimates for categories based on students being a Pell recipient or having worked prior to the rapid increase in inflation.

To extract student perceptions about perceived future labor market uncertainty caused by recent years' rapid inflation, we asked the following question: *"Has the change in prices increased your concern about finding a job after you graduate from CUNY (relative to say October 2020 when inflation was 1.4%)?"*. We classified students by whether they reported that inflation had reduced their confidence in finding a job somewhat or a lot versus not at all, and Table 1 shows that 62 percent of respondents reported that their confidence in finding a job had decreased. This share is consistent with that of Jain et al. (2022) who find that respondents in Canada tended to associate higher inflation with worse labor market conditions and Kamdar et al. (2018) who finds that consumers generally believe that an increase in inflation will be associated with an increase in unemployment. Similarly, Stantcheva (2024) finds that people associate high inflation with economic downturns and higher unemployment.

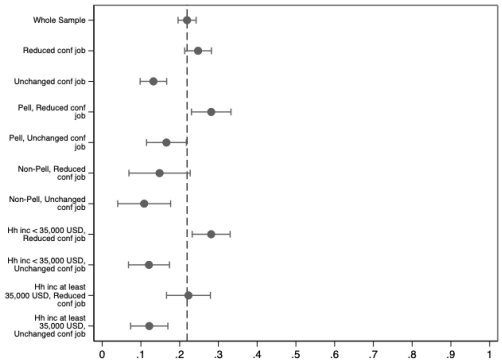
In line with our theoretical prediction, students who perceived that inflation had worsened their future labor market prospects were more likely to change their human capital investment decisions than those whose confidence in finding a job after graduation had remained intact (61 vs. 31 percent) as shown in Panel A of Figure 3. Those with reduced confidence in finding a job were also more likely to increase their human capital investment than those whose confidence in finding a job had not been impacted by inflation (23 vs. 13 percent), as seen in Panel B, which is consistent with the theoretical channel of inflation-induced perceived higher labor market uncertainty. Our findings are also largely in line with those of e.g., Mincer (1958); Becker (1962); Atkin (2016). Furthermore, our findings are also in line with Charles et al. (2018) who suggest that, during a recession, educational attainment (at high-school or the college level) increases because labor market opportunities are reduced.

Panels A and B also reveal that the future labor market uncertainty mechanism is stronger for economically vulnerable students, as predicted by our theoretical model. This is evident in the greater tendency to change graduation plans and the greater difference in tendency to accumulate more human capital between those with reduced confidence in finding a job after graduation and those unaffected among the economically vulnerable students compared to the non-economically vulnerable students. In particular, we observe statistically significant gaps of 11.5 and 16 percentage points, respectively, in human capital accumulation among Pell recipients and students from low-income families. In contrast, the corresponding gap is not statistically significant for non-Pell recipients (4 percentage points) and smaller for students from families with income above the poverty line (10 percentage points).

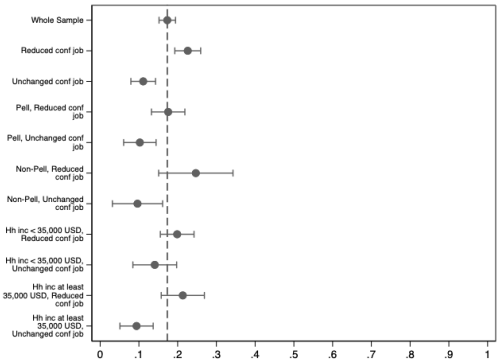
At the same time, we observe that the average respondent with reduced confidence were also more likely to adjust their human capital investment by either postponing graduation (23 vs. 11 percent, as shown in Panel C) or speeding it up (13 percent vs. 7 percent, as shown in Panel D) compared to those whose confidence in finding a job was not impacted by increased inflation. In our theoretical framework, we assume that employment and hence earnings increase for students who graduate college relative to those who do not. Yet, if students believe that current job opportunities are better today than when they graduate, future labor market uncertainty could also induce students to reduce their human capital investments by prompting them to graduate early or postpone graduation to take advantage of the current labor market. While employment rates and earnings of workers with a college degree tend



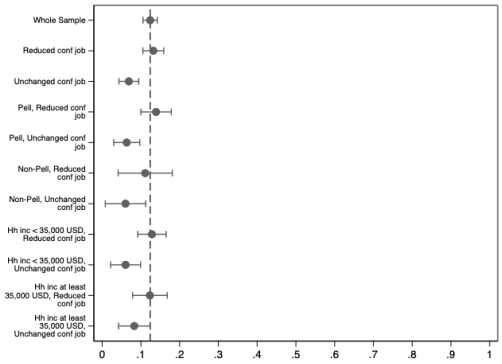
(a) No change



(b) Add human capital



(c) Postpone Graduation



(d) Graduate Earlier

Figure 3: Future Labor Market Uncertainty

Panel (a) shows the students who report no change in their graduation plans due to the recent rapid increase in the price level, (b) shows those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.

to be substantially higher than those without a college degree[24], the recent years of rapidly increased inflation was accompanied by substantial differences in job growth across sectors. Furthermore, during 2022 and 2023, most job growth in New York state took place in low- or medium-paying industries where employment in many occupations does not require a college degree.[25]

In sum, these findings support the mechanism of inflation-induced future labor market uncertainty generating an increase in human capital accumulation, especially among economically vulnerable students. We also observe that inflation leads to a reduction in human capital investment which may reflect the impact of the simultaneous relative wage shift, consistent with students believing that current job opportunities in local low-skilled industries were better than those in higher-skilled sectors which CUNY students typically seek and find employment in after graduation.

We explore these explanations further by examining whether our results reflect student mistrust in institutions and/or the timing of their graduation.

Student institutional mistrust

In particular, students' perceptions of the effect of inflation on future labor market uncertainty may also depend on whether they trust the institutions responsible for maintaining the stability and good functioning of the economy. In particular, students who believe institutions to be effective at stabilizing economic shocks are more likely to believe that any negative shock is quickly addressed and therefore short lived, making it less likely that they change their human capital investment decisions relative to students who mistrust those same institutions.

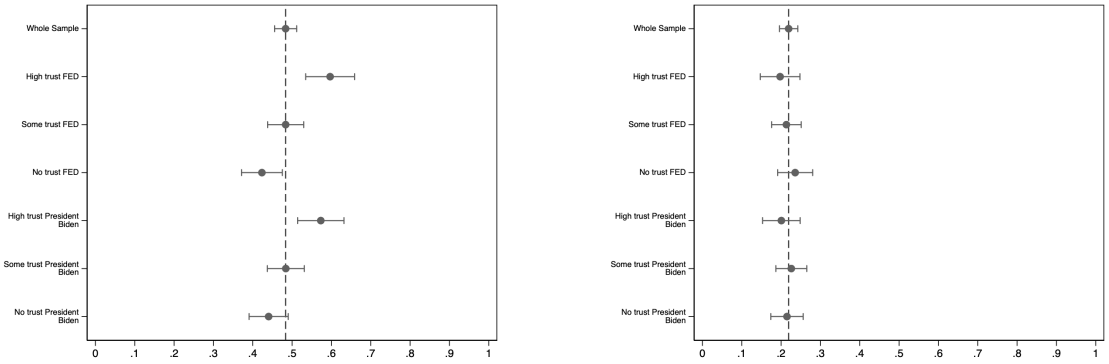
In the survey, we asked students *"How much confidence do you have in each of the following to do or to recommend the right thing for the economy?"* for the Federal Reserve and President Biden. Students were given four possible responses ranging from almost no confidence, a little confidence, a fair amount of confidence and a great deal of confidence. Because less than 6 percent of respondents reported a great deal of confidence, we allocated the responses into three groups: no confidence, some confidence, and high confidence.

Table 1 shows that 33 and 35 percent of the respondents reported no confidence in the Federal Reserve and President Biden, respectively, 44 and 40 percent reported some confidence and 23 and 25 percent reported high confidence. Although there may be some degree of overlap in the two variables in that they may pick up the same people based on their partisan divide, the correlation between the different answers (58 percent, 47 percent and 64 percent of respondents who had no, some, or high confidence in Biden reported the same level of confidence in the Federal Reserve) shows that the variables are distinct.

[24] According to U.S. Census Bureau and Bureau, the unemployment rate in New York state in 2022-23 for those with a high school degree or less was 6.6% while it was 3% for those with at least a Bachelors' degree. Similarly, the median annual earnings were $39,771 in 2023 inflation-adjusted dollars for those with a high-school degree or less versus $74,504 for those with a college degree.

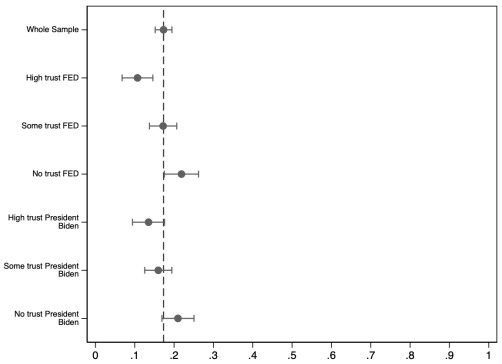
[25] According to NY DOL (2023), between November 2022 and 2023, employment grew by 5.7% in private education and health services, and by 2.5% in leisure and hospitality, while it decreased by 8.9% in information sector, 2% in trade, and in transportation and utilities by 2%.

Figure 4 presents student responses of their trust in the Federal Reserve and/or the government. Panel A demonstrates a clear relationship between trust in economic institutions and the likelihood of inflation causing a change in graduation plans, with students with lower trust being more likely to change their plans. Specifically, 58 percent and 56 percent of students who mistrusted the Federal Reserve and the President, respectively, changed their graduation plans while only 40 percent and 43 percent of those who trusted them made changes. These figures highlight a substantial difference in student responses to inflation based on institutional trust, with a gap of 18 percentage points for the Federal Reserve and 13 percentage points for the U.S. President.

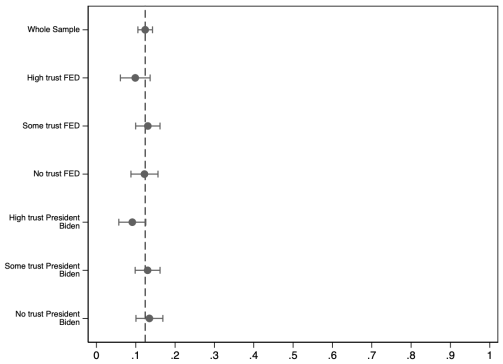


(a) No change

(b) Add human capital



(c) Postpone Graduation



(d) Graduate Earlier

Figure 4: Trust in institutions

Panel (a) shows the students who reported no change in their graduation plans due to recent inflation, (b) shows those who considered taking more courses, adding a major or going to graduate school, (c) those who considered postponing graduation, and (d) those who planned to graduate earlier than initially planned.

Even though mistrust in institutions leads to an increase in the likelihood of students reporting graduation plan changes, we do not find any effect on decisions to increase human capital (Panel B). We do see, however, a statistically significant effect on decisions to postpone graduation (Panel C), with students who mistrust institutions being more likely to postpone graduation than those who do not

(22 versus 11 percent for the Federal Reserve, and 21 versus 14 percent for the US president).

This finding, and the lack of effect on human capital accumulation, may be in line with students perceiving that *current* local low-skilled labor market conditions may be better than those expected at graduation, which could lead them to postpone graduation in order to take advantage of the current labor market opportunities while also avoiding graduation under perceived future adverse labor market conditions. Indeed, previous research has shown that the labor market conditions under which students graduate are highly salient in determining students' future earnings profiles. Both Fernández-Kranz and Rodríguez-Planas (2018) and Oreopoulos et al. (2012) find that students who graduate during a recession are more likely to suffer negative long-term consequences in terms of persistent lower earnings than if they had graduated during an economic expansion.

Student university class level

Lastly, we explore the importance of the timing of students' graduation. If students are motivated to change their human capital investment decisions due to perceived better current (low-skilled) job opportunities or to avoid graduating during perceived future adverse labor-market conditions, we would expect these patterns to be stronger for upper-level students who are closer to graduation. Nevertheless, because they are closer to graduation, these students may have fewer opportunities to modify their graduation plans than lower-level students and, indeed, this is what we find. While the observed higher likelihood for upper-level students to change graduation plans is not statistically significant (as shown in Appendix Figure B.4), they are more likely to postpone graduation (without accumulating human capital) than lower-level students (22 versus 14 percent). No other statistically significant differences in the decisions to accumulate more human capital or graduate earlier are observed.

5 Conclusion

The rapid inflation over the past recent years represents a major macroeconomic shock with wide-ranging implications throughout the economy. Following a prolonged period of relative price level stability, inflation accelerated rapidly between 2020 and 2022, raising the cost of essential goods and services including higher education. With this in mind, this paper examines the causal impact of recent price increases on students' college graduation plans.

We survey 1,218 students at the largest public urban university in the U.S., the City University of New York, during the spring of 2023 where we directly ask respondents how their experiences and expectations would have differed had prices not risen. Our findings reveal that 51.6 percent of respondents modified their graduation plans because of inflation, with about two-fifths of these choosing to increase their investment in human capital by adding courses or by pursuing a double major or higher degree. The remaining three-fifths of students who changed their graduation plans accumulated less human capital by either planning to graduate earlier than initially planned (12.4

percent of all respondents) or to postpone graduation (17.3 percent).

To identify which mechanisms mattered for different types of students, we evaluate our empirical estimates against the predictions derived from a simple theoretical framework based on Cameron and Taber (2004), which incorporates inflation by letting the direct costs of human capital investments depend directly on the price level and by making explicit that real opportunity costs of education are eroded by inflation. Additionally, the model takes into account that students' future earnings streams are affected by their employment rate which in turn depends on their level of schooling and aggregate shocks such as inflation.

We find that the negative impact on human capital investment is driven by inflation-induced higher direct costs, a mechanism which is stronger for those whose ability to pay bills had decreased due to inflation, and is most salient for economically vulnerable students. Looking at other mechanisms, while we do not find strong evidence of any impact of inflation-induced lower opportunity costs of studying, we do find that changing one's graduation plan is more common for those with decreased confidence in finding a job after graduation. This is consistent with the theoretical prediction that inflation increases human capital investment through aggregate labor market uncertainty and, as predicted by the model, is most salient for economically vulnerable students.

The rapid increase in inflation was preceded by the COVID-19 pandemic, which implies potential identification challenges. Several features of our design mitigate this concern. First, our counterfactual baseline (October 2020) postdates the initial pandemic shock and by spring 2023, when we surveyed students, the pandemic had largely receded while inflation remained elevated. Second, our heterogeneity analysis enables a distinction of inflation from pandemic effects: disruptions from the pandemic on students graduation plans (health implications, online instruction, sectoral demand shifts) should affect students uniformly, while we outline specific channels through which inflation operates (direct costs, real wage erosion, labor market uncertainty) that generate the heterogeneous responses we document. Even in the case where students were not affected uniformly by COVID-19, it is unclear COVID-19 would have led them to take similar decision patterns as those predicted by our inflation model and confirmed empirically by the data. For example, we know that COVID-19's had greater devastating effects on the more economically vulnerable students, leading to worse human capital outcomes including postponing graduation (Rodríguez-Planas, 2022). Yet, the evidence shown in this paper (Sections 4.2.1. and 4.2.3) indicates that economically vulnerable students *increased* their human capital investment due to inflation. Lastly, while a complete separation is impossible, our estimates identify the effect of increased inflation on students educational plans conditional on the pandemic context. We argue that this a policy-relevant context given that future shocks also occur against backgrounds of previous disruptions.

Given recent findings that the human capital decisions of college students have consequences for both their future labor supply and earnings and future family life (marriage and fertility) (see, e.g., Wiswall and Zafar, 2021), the findings of this study have profound policy implications about the impact of

inflation on educational choices and long-term economic outcomes. In particular, our findings underscores the importance of addressing the broader economic environment when considering policies aimed at improving educational outcomes: inflation influences students' graduation decisions and human capital investments and ultimately their long-term economic prosperity. Thus, our findings have broader implications for income distribution and economic inequality, as educational attainment is a key determinant of lifetime earnings.

On the bright side, inflation appears to motivate some students to accumulate more human capital, which should improve their individual lifetime earnings prospects. Since this is particularly true for economically vulnerable students, aggregate shocks such as inflation may lead them to a path of higher human capital and future earnings growth, which is consistent with studies finding that human capital increases during economic downturns.[26] Yet, the results are not uniform across all groups, and more worrying is that students with a reduced ability to pay bills due to inflation and those closer to graduation are more likely to postpone graduating than their peers. One third of our sample reported a reduced ability to pay bills, which may prevent these students from resuming their studies and thereby limit their ability to accumulate additional human capital. As a result, their lifetime earnings prospects may diminish, leaving them economically disadvantaged in the long run.

Additionally, our study indicates that students with lower trust in institutions are more prone to changing their plans and postponing graduation in response to increased inflation. This highlights the importance of building trust in economic institutions as part of any policy intervention. Providing clear and accessible information about macroeconomic conditions and outcomes, as well as fostering trust in institutions like the Federal Reserve, could help students make more informed decisions about their education and future careers.

In summary, our findings suggest that policymakers should consider a multifaceted approach that includes financial support for vulnerable students and measures to build trust in economic institutions. Such policies could help mitigate the negative impact of inflation on educational attainment and ensure that students, regardless of their economic background, have the opportunity to make choices that enhance their long-term economic well-being. Even so, further research on the impact of other potential sources of aggregate uncertainty on human capital investment is needed to fully understand how changed macroeconomic conditions affect educational choices and long-term economic outcomes. For instance, the role of inflation expectations on individual consumption and savings choices is central to macroeconomic theory, while our understanding of the role of student expectations of macroeconomic variables such as inflation, unemployment and economic growth on their human capital investment decisions remains limited.

[26]For instance, in a recession, labor market opportunities are typically reduced which may increase educational attainment in high school and college (see, e.g., Mincer, 1958; Becker, 1962; Atkin, 2016; Charles et al., 2018).

Appendices

Appendix A: Theoretical framework

Our theoretical framework is an application of the model presented in Cameron and Taber (2004), to which make three main adjustments. Equations 1 - 7, 9 - 10, and 13 summarize the model and are as presented in Cameron and Taber (2004). Then, to suit our purpose of examining the effect of increased inflation on educational choices, we add Equations 8, 11, and 12. Specifically, we let the direct costs of education depend on the price level, define opportunity costs in terms of real earnings forgone (i.e., as dependent on the price level), and define real earnings as dependent on the price level as well as on students' future employment rates.

Students make educational choices with the aim of maximizing their net lifetime expected earnings subject to a borrowing constraint, which we define as heterogeneity in credit access. That is, students are faced with person-specific interest rates, which reflects the idea that low-wealth individuals or families may be unable to borrow or can only borrow under less favorable conditions and thus face higher borrowing costs.[27] Lifetime utility of schooling choice, s, is given by:

$$V_s = \sum_{t=0}^{\infty} \delta^t \frac{c_t^{\gamma}}{\gamma} + T(s), \tag{1}$$

where δ is a subjective rate of time preference, c_t is consumption at time t, $\gamma < -1$ is a parameter of utility curvature, and $T(s)$ represents non-pecuniary tastes for schooling level s; that is, the utility or disutility of schooling or the variety of jobs available at schooling level s. Each student chooses s out of the set of possible schooling choices, S, so as to maximize lifetime utility:

$$s = arg.max \quad V_s \,|\, s \in S. \tag{2}$$

Furthermore, students are subject to a lifetime budget constraint, which is given by:

$$\sum_{t=0}^{s-1} \Big(\frac{1}{R_j}\Big)^t c_t + \Big(\frac{1}{R_j}\Big)^s \sum_{t=s} c_t^{t-s} \leq I_s, \tag{3}$$

where s is total years of accumulated schooling and I_s is the present value of income net of schooling costs. We define R_j to be the borrowing interest rate during school, which may either be given by

[27] The existence of borrowing constraints and their effect on student educational choices has been widely acknowledged in the literature and the correlation between family income and educational attainment is well documented (see, e.g., Mare, 1980; Manski and Wise, 1983; Manski, 1993; Kane, 1994; Mayer, 1997; Cameron and Heckman, 1998, 2001; Levy et al., 2000). However, many studies find no or limited evidence of a causal effect of borrowing constraints on college enrollment or other schooling decisions (see, e.g., Cameron and Heckman, 1998, 2001; Shea, 2000; Keane and Wolpin, 2001; Cameron and Taber, 2004). Even so, the findings in the existing literature are not unanimous. For instance, Carneiro and Heckman (2003) find that borrowing constraints may affect the timing of entering and completing college as well as the quality of human capital accumulation during college. Also, Navarro (2011) finds a larger effect of borrowing constraints than suggested by the previous literature.

the the market rate, R_m, or a higher rate which is offered for uncolleraterized borrowing, *cc*. We let $R_m = 1/\delta$ and $R_{cc} > R_m$.

The first order conditions are:

$$c_t = (\delta R_j)^{\frac{t}{1-\gamma}} c_0, t \leq s, \tag{4}$$

$$c_t = (\delta R_j)^{\frac{s}{1-\gamma}} c_0, t > s. \tag{5}$$

Inserting these values into the budget constraint yields:

$$I_t = \sum_{t=0}^{s-1} \delta^{\frac{t}{1-\gamma}} R^{\frac{t\gamma}{1-\gamma}} c_0 + (\delta R_j)^{\frac{s\gamma}{1-\gamma}} \sum_{t=s}^{\infty} \delta^t c_0. \tag{6}$$

Solving for c_t in terms of I_s provides the following expression for lifetime utility:

$$V_s = \frac{I_s(\sum_{t=0}^{s-1} \delta^{\frac{t}{1-\gamma}} R^{\frac{t\gamma}{1-\gamma}} + (\delta R)^{\frac{s\gamma}{1-\gamma}} \sum_{t=s}^{\infty} \delta^t)^{(1-\gamma)}}{\gamma} + T(s). \tag{7}$$

For simplicity, we assume that $T(s) = 0$. Next, we solve for the present value of income and let $w_{s,t}$ be real earnings at time t for an individual with s years of schooling. Furthermore, we make the simplifying assumption that individuals have zero earnings while in school and they pay direct costs τ_s at time $s-1$ to attend schooling level s. We let the direct costs be given by:

$$\tau_s = A + PX, \tag{8}$$

where A is the sum of tuition and other fees and PX are schooling-specific costs of living consisting of X units ofbooks, transportation, and room and board (if needed) which have a unit price, P. Here, PX represents the student-specific cost of living or consumption basket and P is to be interpreted as a general price index so that student- specific costs of living are adjusted to the general price level in the economy. Lastly, we abstract from the labor supply decision by assuming individuals supply one unit of labor.

The present value of income discounted to time t=0 is given by:

$$I_s = \Big(\frac{1}{R_j}\Big)^s \sum_{t=s}^{\infty} \delta^{t-s} w_{s,t} - \sum_{t=0}^{s-1} \Big(\frac{1}{R_j}\Big)^t \tau_{t+1}. \tag{9}$$

Reformulating the present value of income discounted at time t into simpler notation, we have that:

$$I_s = \Big(\frac{1}{R_j}\Big)^s W_s - \sum_{t=0}^{s-1} \Big(\frac{1}{R_j}\Big)^t \tau_{t+1}, \tag{10}$$

where W_s is the present value of earnings with schooling level s discounted to time s. We let W_s

represent real earnings so that

$$W_s = W_s^n / P. \tag{11}$$

Furthermore, we define nominal earnings as given by the nominal wage earnings multiplied by the student's schooling-level-specific future employment rate: $W_s^n = w_s^n e_s$. The schooling-level-specific employment rate is given by:

$$e_s = a + \rho s + \varepsilon), \tag{12}$$

where a is the long-term average employment rate, $0 < \rho < 1$ is the benefit of schooling on the future employment rate, s is level of schooling, and ε is a random shock which represents inflationary surprises that induce labor market uncertainty via its effect on the employment rate. In our setting, an inflationary surprise corresponds to a negative realization of the shock, which reduces the employment rate and lowers the value of earnings.

The choice between two schooling levels, $s = 0, 1$, is as follows:

$$\begin{aligned} D &= V_1 - V_0 \\ &= \frac{[\,(W_1/R_j) - \tau_1]^{\gamma}\,(1 + (R_j\delta)^{\gamma/(1-\gamma)}\,[\delta/(1-\delta)]\,)^{(1-\gamma)}}{\gamma} - \frac{W_0^{\gamma}[1/(1-\delta)]^{(1-\gamma)}}{\gamma}, \end{aligned} \tag{13}$$

where $W_s = (w_s^n e_s)/P$, $R_j = (R_m, R_{cc})$, and $\tau_1 = A + PX$. The greater D is, the greater is the gain for students to accumulate human capital and thus the lower is the likelihood that students choose to change their graduation plans by reducing their investment in human capital. We assume that as long as $D \geq 0$, students are motivated to increase rather than decrease their human capital investment.The effect on D of changing either τ_1, W_0, or W_1 are as follows:

$$\frac{dD}{d\tau_1} = -\gamma\Big(\frac{V_1}{W_1/R_j - \tau_1}\Big), \tag{14}$$

$$\frac{dD}{dW_0} = -\gamma\Big(\frac{V_0}{W_0}\Big), \tag{15}$$

$$\frac{dD}{dW_1} = \gamma\Big(\frac{V_1}{R_j(W_1/R_j - \tau_1)}\Big), \text{and} \tag{16}$$

$$\frac{dV_1}{dR} = -\gamma\left(\frac{W_1}{R^2}\cdot\frac{V_1}{\frac{W_1}{R} - \tau_1} \;-\; \frac{V_1}{1 + \delta\left((R\delta)^{\gamma/(1\gamma)} - 1\right)}\cdot\frac{\delta}{R}\,(R\delta)^{\gamma/(1-\gamma)}\right). \tag{17}$$

The above results are as in Cameron and Taber (2004). Thus, without taking inflation into account, the first equation shows the effect on D of an increase in direct costs, the second equation the effect of an increase in indirect costs, the third the effect of future earnings, and the fourth effect of the borrowing constraint. Thus, the likelihood of students changing their graduation plans by reducing their human capital investment increases if direct costs increase, indirect costs increase, future earnings fall, or the interest rate increases.

Inflation represents an increase in the price level, which in our setting causes direct costs to increase, indirect costs to fall since the real value of forgone earnings falls,[28] and, given that there is also a negative effect of inflation on the future employment rate (i.e., an inflationary shock with persistently negative effects on the future employment rate), the value of future earnings may fall. Hence, inflation on the one hand increases the likelihood of students changing their graduation plans in a negative direction since inflation increases higher direct costs. On the other hand, inflation also lowers indirect costs and reduces future labor market uncertainty, which increases the likelihood of students changing the graduation plans in a positive direction so as to achieve a higher future employment rate and, hence, expected future earnings.

In their paper, Cameron and Taber (2004) provide several important predictions for the educational choices of borrowing-constrained students' human capital investment decisions. They show that borrowing-constrained students (i.e., those facing a higher borrowing interest rate, $R_{cc} > R_m$) are less likely to achieve $D > 0$. Furthermore, in Section III of their paper, Cameron and Taber (2004) show that a one dollar rise in direct costs affects the lifetime utility of choosing $s = 1$ more for a borrowing-constrained student (who is not a net saver in school), while the consequence on student educational choices of a change in indirect costs does not differ for borrowing-constrained and non-borrowing-constrained students (since these costs are not financed). In our setting, this holds for inflation-led direct cost increases since increased inflation implies higher direct costs which, in turn, make borrowing-constrained students less likely to change their graduation plans by increasing their human capital investment. While inflation in our setting also causes indirect costs to fall, the effect on educational choices is as in Cameron and Taber (2004) and does not differ across borrowing- and non-borrowing-constrained students since these costs are not financed via borrowing. Yet, even if not directly featured in the model, students often work while studying to relax their borrowing constraints. In this case, a lower real value of current earnings induced by higher inflation may make their borrowing constraint binding. Thus, while lower indirect costs motivates students to invest in more human capital, this positive effect may not be enough to compensate for the reduction in the purchasing power of current earnings, which may leave these students (more) borrowing-constrained and hence more exposed to the negative impact of the higher direct costs associated with higher inflation.

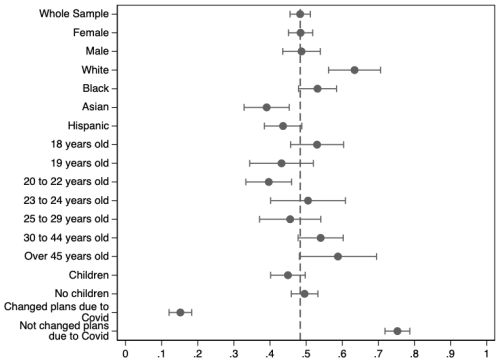
Lastly, Cameron and Taber (2004) show that the required return on education, i.e., the relative wage, W_1/W_0, for the borrowing-constrained student is higher than the non-borrowing-constrained student. This is because the student who has a higher cost of investment due to the higher interest rate they face when borrowing also require higher compensation in terms of higher future earnings.[29] In our setting, the relative wage is affected by inflation if an increase in inflation is associated with an inflationary surprise that has persistently negative effects on the future labor market (i.e., a negative realization of ε)). In that situation, borrowing-constrained students are more strongly affected than the non-borrowing-constrained students since the required compensation from education (i.e., the relative real

[28] Indirect costs are be represented by $W_0 = W_0^n/P$, where W_s^n is the nominal wage earnings for schooling level s, and P is a general price level for the economy. Thus, if the price level rises, then indirect costs fall, which in turn increases D and thus the likelihood of the student changing their graduation plans by increasing their human capital investment (i.e., choosing $s = 1$).

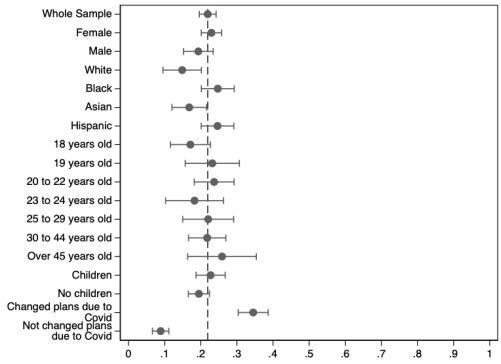
[29] See Proposition 3 in Cameron and Taber (2004)

earnings W_1/W_0) increases which, in turn, increases the likelihood that $D > 0$ and that the student chooses to increase their human capital investment.

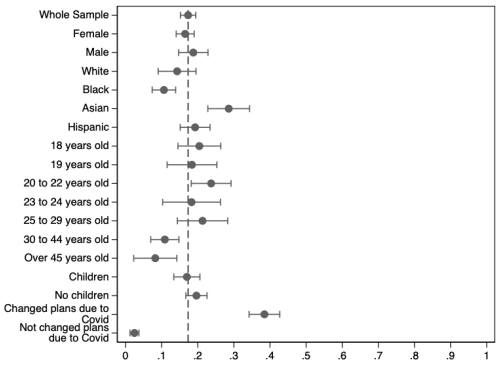
Appendix B: Figures



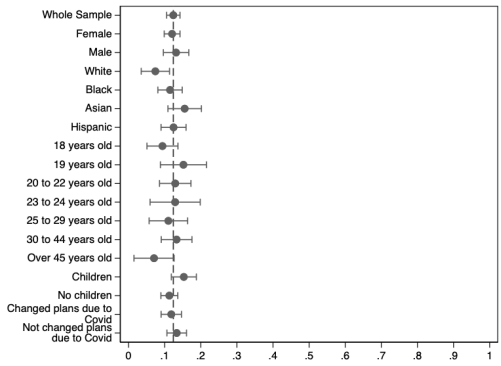
(a) No change



(b) Add human capital



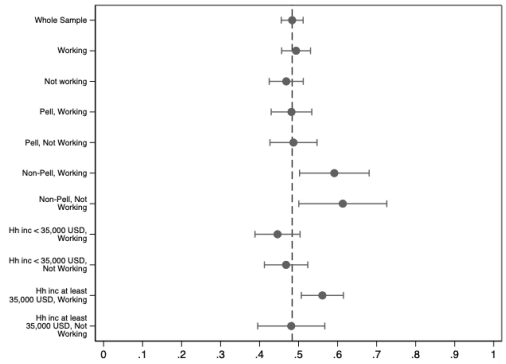
(c) Postpone Graduation



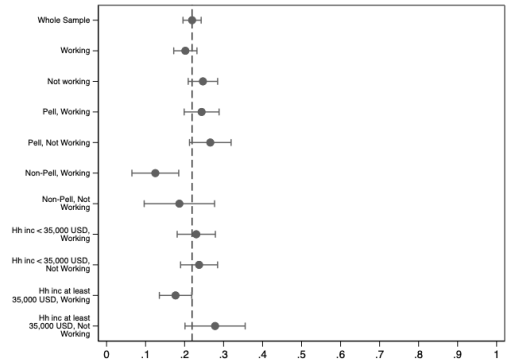
(d) Graduate Earlier

Figure B.1: Demographics

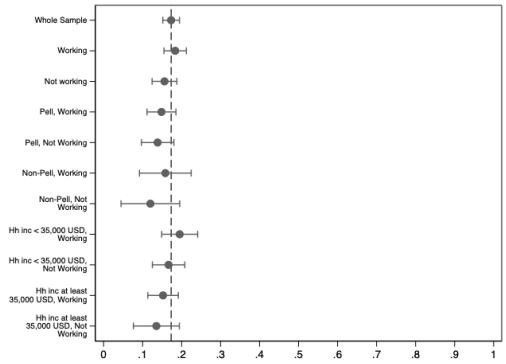
Panel (a) shows the students who report no change in their graduation plans due to the recent rapid increase in the price level, (b) those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.



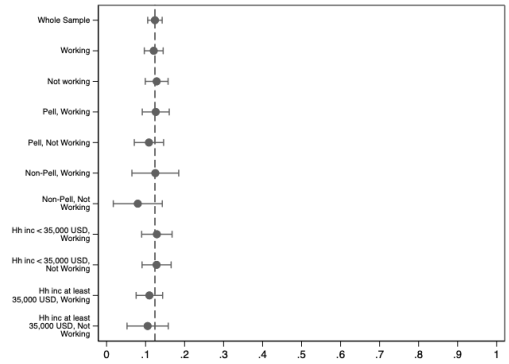
(a) No change



(b) Add human capital



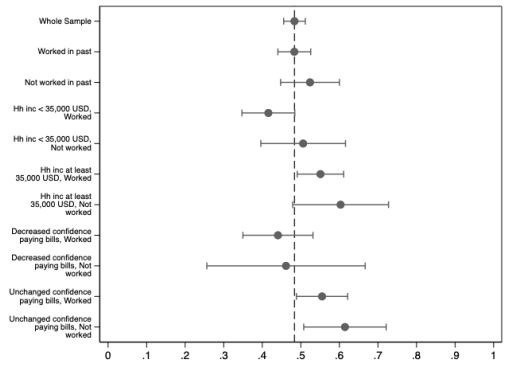
(c) Postpone Graduation



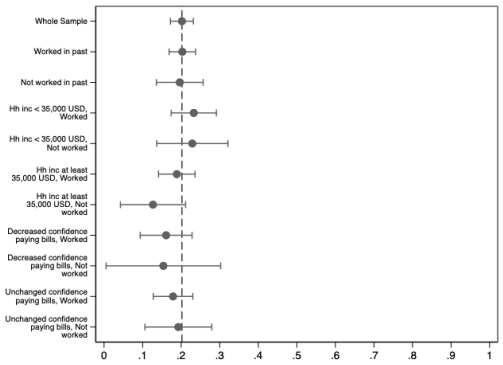
(d) Graduate Earlier

Figure B.2: Opportunity Costs: Currently Working

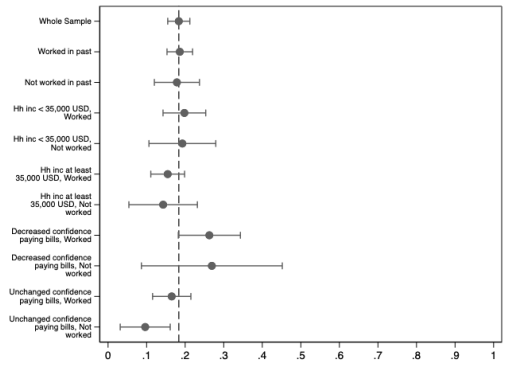
Panel (a) shows the students who report no change in their graduation plans due to the recent rapid increase in the price level, (b) those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.



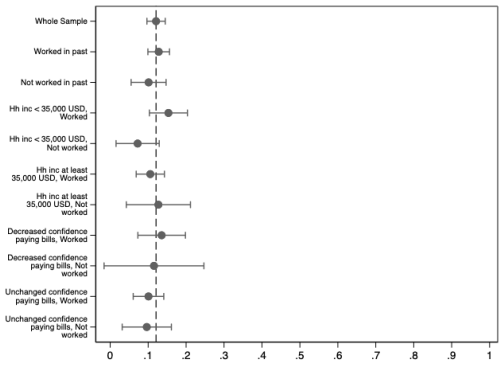
(a) No change



(b) Add human capital



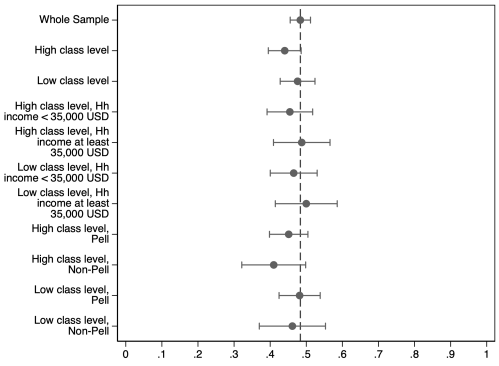
(c) Postpone Graduation



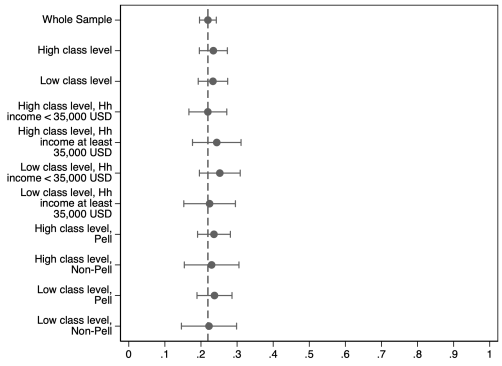
(d) Graduate Earlier

Figure B.3: Opportunity Costs: Using the sub-sample of students who are currently working

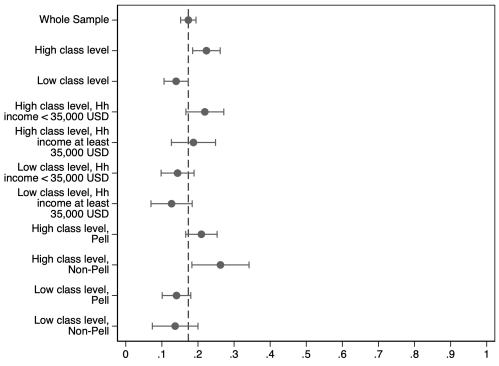
In this figure, we include only students who report that they are currently working. Panel (a) shows the students who report no change in their graduation plans due to the recent rapid increase in the price level, (b) those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.



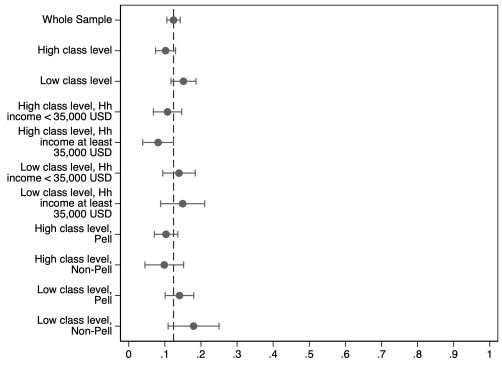
(a) No change



(b) Add human capital



(c) Postpone Graduation



(d) Graduate Earlier

Figure B.4: University Class Level

Panel (a) shows the students who report no change in their graduation plans due to the recent rapid increase in the price level, (b) those who consider taking more courses, adding a major or going to graduate school, (c) those who consider postponing graduation, and (d) those who plan to graduate earlier than initially planned.

Appendix C: Tables

Table C1: Descriptive Statistics

	Unweighted sample	Weighted sample	Registered in CUNY fall 2019[a]
	(1)	(2)	(3)
Female	0.705	0.518	0.569
Black	0.316	0.288	0.260
Asian	0.216	0.239	0.216
Hispanic	0.321	0.292	0.317
White	0.159	0.188	0.204
18 years old	0.165 [0.189]	0.172 [0.208]	Under 20 years[b]:
years old	0.114 [0.136]	0.106 [0.129]	[0.358][b]
20 to 22 years old	0.211 [0.248]	0.196 [0.243]	[0.290][b]
23 to 24 years old	0.085 [0.081]	0.084 [0.084]	[0.098][b]
25 to 29 years old	0.124 [0.099]	0.120 [0.088]	[0.122][b]
30 to 44 years old	0.225 [0.185]	0.247 [0.189]	[0.104][b]
Over 45 years old	0.077 [0.062]	0.075 [0.058]	[0.027][b]
Non-US born	0.234	0.245	—
Ever Pell receipt	0.677 [0.727]	0.493 [0.551]	[0.547][c]
First-generation	0.531	0.516	—
Household income $<$ \$35,000	0.565	0.532	—
Responsible for children	0.371	0.339	—
Transfer student	0.300	0.303	0.290
Two-year college	0.314	0.305	0.238[a]
Four-year college	0.528	0.500	0.525[a]
Graduate student	0.148	0.187	0.237[a]
Freshman	0.185	0.185	0.27
Sophomore	0.290	0.292	0.24
Junior	0.185	0.189	0.22
Senior	0.341	0.335	0.28
Graduated from college	0.129	0.138	—
Family income below \$35,000	0.565	0.465	—
Decreased ability to pay bills	0.323	0.311	—
Employed in Fall 2019	0.609	0.616	—
Employed at survey date	0.581	0.585	—
Decreased confidence in finding a job	0.616	0.623	—
No confidence in Biden	0.352	0.353	—
Some confidence in Biden	0.399	0.394	—
High confidence in Biden	0.250	0.252	—
No confidence in the Federal Reserve	0.334	0.331	—
Some confidence in the Federal Reserve	0.435	0.419	—
High confidence in the Federal Reserve	0.231	0.250	—

Notes: Variables on confidence in Biden or the Federal Reserve are constructed such that if a student did not respond, it is coded as "0". Hence, the missing category is those who did not respond. The undergraduate student population at CUNY was 241,080 at time of survey. Statistics in brackets restrict the sample to undergraduate students. Among graduate students, we include those pursuing a certificate and/or professional degree, in addition to a Master's or a Doctoral degree.

[a] *Source:* https://public.tableau.com/app/profile/oira.cuny/viz/StudentDataBook/Enrollment.

[b] *Excludes graduate students. Source:* https://www.cuny.edu/irdatabook/rpts2_AY_current/ENRL_0046_AGE_TOT_PCT.rpt.pdf

[c] *Excludes graduate students. Transfer students only includes those transferring from four-year colleges. Calculated for Queens College, one of the four-year colleges.*

Table C2: Demographic Characteristics

Variable name	No Change	Add Human Capital	Postpone Graduation	Graduate Earlier
Whole Sample	0.484	0.219	0.173	0.124
	(0.014)	(0.012)	(0.011)	(0.009)
	1218	1218	1218	1218
Female	0.485	0.230	0.165	0.121
	(0.017)	(0.014)	(0.013)	(0.011)
	854	854	854	854
Male	0.487	0.193	0.188	0.132
	(0.026)	(0.021)	(0.021)	(0.018)
	357	357	357	357
White	0.634	0.149	0.143	0.074
	(0.037)	(0.027)	(0.027)	(0.020)
	175	175	175	175
Black	0.532	0.247	0.106	0.115
	(0.027)	(0.023)	(0.017)	(0.017)
	348	348	348	348
Hispanic	0.436	0.246	0.193	0.125
	(0.026)	(0.023)	(0.021)	(0.018)
	353	353	353	353
Asian	0.391	0.168	0.286	0.155
	(0.032)	(0.024)	(0.029)	(0.024)
	238	238	238	238
Responsible for children	0.450	0.227	0.170	0.153
	(0.024)	(0.021)	(0.018)	(0.018)
	418	418	418	418
18 years old	0.530	0.171	0.204	0.094
	(0.037)	(0.028)	(0.030)	(0.022)
	181	181	181	181
19 years old	0.432	0.232	0.184	0.152
	(0.044)	(0.038)	(0.035)	(0.032)
	125	125	125	125
20 to 22 years old	0.397	0.237	0.237	0.129
	(0.032)	(0.028)	(0.028)	(0.022)
	232	232	232	232
23 to 24 years old	0.505	0.183	0.183	0.129
	(0.052)	(0.040)	(0.040)	(0.035)
	93	93	93	93
25 to 29 years old	0.456	0.221	0.213	0.110
	(0.043)	(0.036)	(0.035)	(0.027)
	136	136	136	136
30 to 44 years old	0.540	0.218	0.109	0.133
	(0.032)	(0.026)	(0.020)	(0.022)
	248	248	248	248
Over 45 years old	0.588	0.259	0.082	0.071
	(0.054)	(0.048)	(0.030)	(0.028)
	85	85	85	85

Table C3: Direct cost components, 2018-2023

Time period	Tuition & childcare[a]	Tuition[b]	Interest rate, Fed. Dir. Loans[c]	Gasoline[d] (6m avg)	Books & supplies[e] (6m avg)	CPI[f]	Credit Card[g] (6m avg)
Jan–Jun 2018	100	100		100	100	100	13.89%
Jul–Dec 2018	102.3	102.6	5.05%	101.9	99.8	100.9	14.56%
Jan–Jun 2019	103.3	103.5		96.4	98.7	101.7	15.11%
Jul–Dec 2019	104.9	104.9	4.53%	98.3	98.0	102.8	14.99%
Jan–Jun 2020	105.6	105.3		81.8	96.5	103	14.81%
Jul–Dec 2020	106.6	106	2.75%	81.1	98.0	104.1	14.62%
Jan–Jun 2021	106.7	105.7		102.2	98.7	106.5	14.68%
Jul–Dec 2021	108.5	107.4	3.73%	119.3	98.6	110.3	14.53%
Jan–Jun 2022	109.3	107.9		150.1	101.5	115.3	14.85%
Jul–Dec 2022	111.8	109.8	4.99%	141.7	103.1	118.8	17.67%
Jan–Jun 2023	113.1	110.3		129.1	101.8	120.9	20.47%
July–Dec 2023			5.50%				
% Δ 2019–2023	7.82%	5.15%	31.30%	1.91%	17.60%		

Notes: To improve comparability, all index series have been re-based such that the first half of 2018 is reference period (100). 6-month averages have been calculated from monthly data for gasoline prices and educational books and supplies.
(a) Tuition, other school fees, and childcare in U.S., city average, all urban consumers (CUUS0000SEEB) `https://data.bls.gov/dataViewer/view/timeseries/CUUR0000SEEB`,
(b) College tuition and fees in U.S. city average, all urban consumers, not seasonally adjusted (CUUR0000SEEB01). Source: `https://data.bls.gov/dataViewer/view/timeseries/CUUR0000SEEB01`,
(c) Fixed Interest Rates for Direct Subsidized Loans and Subsidized Federal Stafford Loans - Undergraduate Borrowers. Note the interest rate is reset every July. Once a loan is issued, the interest rate is fixed. Source: `https://studentaid.gov/understand-aid/types/loans/interest-rates`,
(d) Gasoline (All Types) in U.S. City Average (CUSR0000SETB01) Source:`https://fred.stlouisfed.org/series/CUSR0000SETB01`,
(e) Educational Books and Supplies in U.S. City Average (CUUR0000SEEA). Source: `https://fred.stlouisfed.org/series/CUUR0000SEEA`,
(f) Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL). Source: `https://fred.stlouisfed.org/series/CPIAUCSL`. (g) Commercial Bank Interest Rate on Credit Card Plans, All Accounts, Percent, Semi-annual, Not Seasonally Adjusted. Source: `https://fred.stlouisfed.org/series/TERMCBCCALLNS?utm_source=chatgpt.com`.

Table C4: Economic Vulnerability

Variable name	No Change	Add Human Capital	Postpone Graduation	Graduate Earlier
Whole Sample	0.484	0.219	0.173	0.124
	(0.014)	(0.012)	(0.011)	(0.009)
	1218	1218	1218	1218
Decreased confidence paying bills	0.375	0.227	0.262	0.137
	(0.030)	(0.026)	(0.028)	(0.022)
	256	256	256	256
Unchanged confidence paying bills	0.584	0.183	0.125	0.108
	(0.021)	(0.017)	(0.014)	(0.013)
	536	536	536	536
Pell, Working	0.447	0.277	0.148	0.129
	(0.026)	(0.023)	(0.019)	(0.018)
	365	365	365	365
Pell, Not Working	0.531	0.217	0.147	0.105
	(0.031)	(0.026)	(0.022)	(0.019)
	258	258	258	258
Non-Pell, Working	0.574	0.140	0.169	0.118
	(0.043)	(0.030)	(0.032)	(0.028)
	136	136	136	136
Non-Pell, Not working	0.667	0.167	0.083	0.083
	(0.061)	(0.049)	(0.036)	(0.036)
	60	60	60	60
First Generation in College	0.427	0.266	0.189	0.118
	(0.020)	(0.018)	(0.016)	(0.013)
	609	609	609	609
Not First Generation in College	0.561	0.169	0.143	0.127
	(0.021)	(0.016)	(0.015)	(0.014)
	537	537	537	537
Household income below 35,000 USD	0.457	0.233	0.181	0.130
	(0.020)	(0.017)	(0.016)	(0.014)
	602	602	602	602
Household income at least 35,000 USD	0.541	0.205	0.147	0.108
	(0.023)	(0.019)	(0.016)	(0.014)
	464	464	464	464

Table C5: Opportunity Costs

Variable name	No Change	Add Human Capital	Postpone Graduation	Graduate Earlier
Whole Sample	0.484	0.219	0.173	0.124
	(0.014)	(0.012)	(0.011)	(0.009)
	1218	1218	1218	1218
Worked	0.459	0.223	0.187	0.132
	(0.018)	(0.015)	(0.014)	(0.012)
	737	737	737	737
Not Worked	0.518	0.216	0.154	0.112
	(0.023)	(0.019)	(0.017)	(0.015)
	473	473	473	473
Household income less than 35,000 USD, Worked	0.397	0.259	0.203	0.141
	(0.027)	(0.025)	(0.023)	(0.019)
	320	320	320	320
Household income less than 35,000 USD, Did not work	0.520	0.206	0.159	0.116
	(0.030)	(0.024)	(0.022)	(0.019)
	277	277	277	277
Household income at least 35,000 USD, Worked	0.529	0.196	0.159	0.116
	(0.028)	(0.022)	(0.020)	(0.018)
	327	327	327	327
Household income at least 35,000 USD, Did not work	0.566	0.228	0.118	0.088
	(0.043)	(0.036)	(0.028)	(0.024)
	136	136	136	136
Decreased confidence paying bills, Worked	0.364	0.209	0.278	0.150
	(0.035)	(0.030)	(0.033)	(0.026)
	187	187	187	187
Decreased confidence paying bills, Did not work	0.388	0.284	0.224	0.104
	(0.060)	(0.055)	(0.051)	(0.038)
	67	67	67	67
Unchanged confidence paying bills, Worked	0.540	0.202	0.146	0.111
	(0.029)	(0.024)	(0.021)	(0.019)
	287	287	287	287
Unchanged confidence paying bills, Did not work	0.633	0.159	0.102	0.106
	(0.031)	(0.023)	(0.019)	(0.020)
	245	245	245	245

Table C6: Future Labor Market Uncertainty

Variable name	No Change	Add Human Capital	Postpone Graduation	Graduate Earlier
Whole Sample	0.484	0.219	0.173	0.124
	(0.014)	(0.012)	(0.011)	(0.009)
	1218	1218	1218	1218
Reduced confidence finding a job after graduation	0.394	0.248	0.226	0.132
	(0.020)	(0.018)	(0.017)	(0.014)
	606	606	606	606
Unchanged confidence finding a job after graduation	0.688	0.132	0.111	0.069
	(0.024)	(0.017)	(0.016)	(0.013)
	378	378	378	378
Reduced confidence finding a job after graduation, Pell	0.404	0.281	0.175	0.139
	(0.028)	(0.026)	(0.022)	(0.020)
	302	302	302	302
Unchanged confidence finding a job after graduation, Pell	0.668	0.166	0.102	0.063
	(0.033)	(0.026)	(0.021)	(0.017)
	205	205	205	205
Reduced confidence finding a job after graduation, Non-Pell	0.494	0.148	0.247	0.111
	(0.056)	(0.040)	(0.048)	(0.035)
	81	81	81	81
Unchanged confidence finding a job after graduation, Non-Pell	0.735	0.108	0.096	0.060
	(0.049)	(0.034)	(0.033)	(0.026)
	83	83	83	83
Reduced confidence finding a job after graduation, Household income below 35,000 USD	0.391	0.281	0.199	0.128
	(0.027)	(0.025)	(0.022)	(0.019)
	327	327	327	327
Unchanged confidence finding a job after graduation, Household income below 35,000 USD	0.678	0.121	0.141	0.060
	(0.038)	(0.027)	(0.029)	(0.020)
	149	149	149	149
Reduced confidence finding a job after graduation, Household income at least 35,000 USD	0.441	0.223	0.213	0.123
	(0.034)	(0.029)	(0.028)	(0.023)
	211	211	211	211
Unchanged confidence finding a job after graduation, Household income at least 35,000 USD	0.702	0.122	0.094	0.083
	(0.034)	(0.024)	(0.022)	(0.021)
	181	181	181	181

Table C7: Trust in Institutions

Variable name	No Change	Add Human Capital	Postpone Graduation	Graduate Earlier
Whole Sample	0.484	0.219	0.173	0.124
	(0.014)	(0.012)	(0.011)	(0.009)
	1218	1218	1218	1218
High trust FED	0.597	0.198	0.107	0.099
	(0.032)	(0.026)	(0.020)	(0.019)
	243	243	243	243
Some trust FED	0.484	0.214	0.172	0.131
	(0.023)	(0.019)	(0.018)	(0.016)
	459	459	459	459
No trust FED	0.423	0.236	0.219	0.122
	(0.026)	(0.023)	(0.022)	(0.017)
	352	352	352	352
High trust President Biden	0.573	0.201	0.135	0.091
	(0.030)	(0.024)	(0.021)	(0.017)
	274	274	274	274
Some trust President Biden	0.484	0.226	0.160	0.130
	(0.024)	(0.020)	(0.018)	(0.016)
	438	438	438	438
No trust President Biden	0.440	0.215	0.210	0.135
	(0.025)	(0.021)	(0.021)	(0.017)
	386	386	386	386

Table C8: University Class Level

Variable name	No Change	Add Human Capital	Postpone Graduation	Graduate Earlier
Whole Sample	0.484	0.219	0.173	0.124
	(0.014)	(0.012)	(0.011)	(0.009)
	1218	1218	1218	1218
Upper-level student	0.440	0.234	0.223	0.102
	(0.023)	(0.020)	(0.019)	(0.014)
	461	461	461	461
Lower-level student	0.476	0.233	0.139	0.151
	(0.025)	(0.021)	(0.017)	(0.018)
	416	416	416	416
Upper level, Pell	0.451	0.236	0.209	0.103
	(0.027)	(0.023)	(0.022)	(0.017)
	339	339	339	339
Lower level, Pell	0.482	0.237	0.140	0.140
	(0.029)	(0.025)	(0.020)	(0.020)
	299	299	299	299
Upper level, Non-Pell	0.410	0.230	0.262	0.098
	(0.045)	(0.038)	(0.040)	(0.027)
	122	122	122	122
Lower level, Non-Pell	0.462	0.222	0.137	0.179
	(0.046)	(0.039)	(0.032)	(0.036)
	117	117	117	117
Upper level, Income below 35,000 USD	0.455	0.219	0.219	0.107
	(0.032)	(0.027)	(0.027)	(0.020)
	242	242	242	242
Lower level, Income below 35,000 USD	0.465	0.252	0.143	0.139
	(0.033)	(0.029)	(0.023)	(0.023)
	230	230	230	230
Upper level, Income at least 35,000 USD	0.487	0.244	0.188	0.081
	(0.040)	(0.034)	(0.031)	(0.022)
	160	160	160	160
Upper level, Household income at least 35,000 USD	0.500	0.224	0.127	0.149
	(0.043)	(0.036)	(0.029)	(0.031)
	134	134	134	134

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