# Navigating Higher Education Insurance: An Experimental Study on Demand and Adverse Selection*

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December 6, 2023

**Abstract**

Insurance markets help insulate consumers from risk, yet there are inherent risks in post-secondary education without corresponding insurance markets. Partnering with a large, non-profit university, we conducted a survey experiment of nearly 3,000 students to analyze the demand for income insurance features in educational lending. We randomize students, who are offered a federal student loan with income-driven repayment and a hypothetical income-share agreement (ISA), into two groups: those presented a neutral framing, and those offered a framing emphasizing (low) income insurance. We find that framing the hypothetical ISA with an emphasis on its built-in income insurance and shorter maximum term increases the likelihood of taking up the ISA compared with the student loan by 43%. We also examine potential adverse selection and discern patterns of switching behavior in response to actuarially-equivalent alternative contract terms and potential for debt forgiveness. Treated students who initially chose the student loan were more likely to switch to an ISA with a lower share and longer term, while treated students who initially chose the ISA preferred an ISA with higher share and shorter term. Our results suggest that educational insurance could alleviate some risks in postsecondary education – particularly among populations with higher variance in college outcomes – but that the specific terms and framing of the insurance may have substantial effects on student demand.

*The authors appreciate the helpful comments and feedback of Neil Bhutta, Julia Cheney, Barry Cynamon, Andrew Hertzberg, Jerome Hodges, Robert Hunt, and Jeff Larrimore. We are also grateful for participants at seminar and conference presentations including Providence College, the United States Air Force Academy, the University of Tennessee at Knoxville, Association for Education Finance and Policy, Association for Policy Analysis and Management, and the Southern Economic Association.

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# 1 Introduction

Insurance products are important tools individuals employ to hedge risks in their financial lives. Insurance markets allow individuals to pool risk against unexpected, negative outcomes and are well developed in many contexts, like healthcare or real estate.[1] However, risk hedging opportunities are not readily available in post secondary education, even though college is an increasingly uncertain investment (Webber, 2022) that many students only make once in their lifetime. While returns to college are positive on average (Lovenheim and Smith, 2022), their distribution is more nuanced (Webber, 2016, Broady and Hershbein, 2020). Financial outcomes for students, for example, vary across institution types (e.g. selective vs. non-selective; 4-year vs. 2-year), fields of study (e.g. education vs. engineering vs. economics), and macroeconomic conditions upon graduation (Rothstein, 2023). Perhaps more importantly, returns vary within each of these segments given unobservable student skill – which is potentially difficult for the student and/or the institution to identify – and uncertain labor market conditions. Particularly for younger students and those entering longer degree programs, there is uncertainty both in the expected *level* of income and in its *variability*.

Students, educational institutions, and policymakers understand and bear these risks to different degrees. For example, work by Stange (2012) shows that many students treat attending the first year of college akin to purchasing an options contract—completing an initial year so as to develop a better sense of their likely returns, after which they decide whether to exercise the option for a second year. Policymakers and advocates often work to transfer the riskiness of the return to taxpayers, e.g. via the free college movement, financial aid policy (both grants and loans), or the COVID-19 student loan repayment pause for loans guaranteed by the federal government.

Interestingly, individual educational insurance policies where students pay a premium to protect themselves from income risk are either not well developed or are non-existent.[2] One reason for the low prevalence of educational insurance in post-secondary markets may be low demand. There is evidence that students can be overoptimistic about future earnings (e.g. Baker et al. (2018)), and that income risk is not salient to them at the time of enrollment and financing because students have difficulty predicting future incomes of college graduates and specific majors (Arcidiacono et al., 2012; Baker et al., 2018; Conlon, 2021). Another reason could be a supply side one, primarily characterized by the presence of adverse

[1] Most closely to our setting, individuals purchase insurance to mitigate financial losses (e.g. Arrow, 1963), buffer against income shocks (e.g. Chetty and Szeidl (2007)), and for a variety of other reasons. Guiso and Paiella (2008) document the increasing propensity of households to hedge against labor income risk in particular, indicating a rising awareness of employment/income uncertainties. In the case of financial markets, diversification, including the use of derivative instruments like futures and options, remains a primary strategy for risk management in the face of uncertain economic outcomes (e.g. Bodie (1994); Goyal and Welch (2007)).

[2] Throughout this paper, we will assume that the primary form of insurance in post-secondary education is against the risk of low or uncertain income, and will refer to this as "low income insurance" or "educational insurance."

selection (Einav et al. (2023)) and moral hazard (Zweifel and Manning, 2000) in insurance markets.

Our paper makes a unique contribution to our understanding of student demand for educational insurance and the potential relevance of adverse selection in the viability of low income insurance in education markets. We partnered with a large, non-profit university (hereafter, The University) that typically serves non-traditionally aged students who are often working adults and conducted a randomized survey experiment with 2,776 students to understand their preferences over different educational financing choices. More specifically, the student sample in our survey experiment has an average age of 38, is predominantly female (71%) and white, and 50% are married, with an average household size of 3 members. In the survey, students were asked to to choose between a federal student loan with the option of an income-driven repayment (IDR) plan and a hypothetical income-share agreement (ISA). Monthly loan payments that are waived for very low incomes and otherwise are capped to a fixed share of an individual's income are available under both options, with markedly different implementation and paths for satisfying the loan obligation.

In the experiment, students were randomized into two equal groups and, similar to Abraham et al. (2020), the presented options differed in terms of level of detail provided for each of the choices. The first group was shown descriptions of the student loan with option of IDR and the ISA with a risk-neutral framing that explained the differences in monthly payments, general structure of the loan, the baseline payment terms, and the source of funding. The terms of the student loan with IDR and the ISA were set to be actuarially equivalent. We exposed the second group – our treatment group – to the same descriptions of the student loan with option of IDR and the ISA, but with an additional emphasis on the insurance features (nature of the income contingency and maximum repayment term) of the two financing options.

There are many differences between federal student loans with IDR and ISAs, and many reasons why different borrowers might prefer one over the other. With federal student loans, borrowers who do well in the labor market will pay less in total by paying fixed monthly payments for the minimum number of years (120 payments, or 10 years with no gaps in payment). Since there is no prepayment penalty for student loans, they can also be paid off faster than scheduled and may be particularly attractive to students who expect to have consistently high earnings after college. To access the income contingency, borrowers must follow a series of administrative hurdles in order to qualify for reduced monthly payments capped at a certain percentage of their income, paying nothing if their income falls below a set threshold, but potentially extending their term up to 20 years compared with the standard repayment plan.[3] With an ISA, borrowers' monthly payments are set as a pre-agreed share of income by design, and the repayment term is typically

[3]Recent policy changes around the Saving on a Valuable Education (SAVE) IDR plan simplify some of these processes for federal student loans, but the income protection is still far from built in. Although some currently available IDR plans offered by the Department of Education extend the repayment term to up to 25 years, we wanted to keep the comparison simple for borrowers and chose the (modal) maximum term of 20 years.

extended to a lesser degree than IDR due to months of non-payment, making an ISA a potentially attractive proposition for borrowers with persistently low or variable earnings. On the other hand, there is no way to "refinance" out of an ISA and borrowers who end up earning high incomes will pay up to a multiple of the original loan amount, described in our experiment. Finally, borrowers may have preferences over borrowing from the government versus a private lender.

We find that students have a significant preference for the built-in income insurance in the ISA and that our insurance framing greatly increases the demand for the hypothetical ISA – by about 10 percentage points, or 44 percent. Importantly, there is limited heterogeneity in treatment to be found along demographic, academic, or financial lines.[4] The insurance framing has, by far, the largest effect on take-up. Our results suggest that students are not necessarily thinking about income risk or about the potential benefits of educational insurance when they choose how to finance their studies, but that educational and loan providers can help make the potential need for educational insurance salient for borrowers by thoroughly explaining the costs and benefits of such insurance.

Our survey and follow-up questions also allow us to characterize how adverse selection may enter the educational insurance market (Herbst and Hendren, 2021).[5] Students may be confident about their income potential but can easily conceal this information from financing providers who do not have the ability to price discriminate (i.e. must charge the same interest rate or income share to all). In such an environment, students expecting low incomes will sort into the ISA while students expecting high incomes will opt for a traditional loan. Educational insurance that looks more like an ISA will not be a sustainable policy choice if students who achieve significant returns to college systematically choose student loans. Overall, there is less evidence suggestive of adverse selection across a variety of variables than we supposed ex ante. Employment uncertainty, for example, does not appear to influence take-up. However, we do find strong suggestive evidence of adverse selection based on likelihood of future incomes being low.

To further test for adverse selection, we ask several follow-up questions to investigate how students might change their answers if the offer terms were modestly different. After their initial choice between a student loan and an ISA, we offered students who originally selected a student loan with IDR an actuarially-equivalent alternative ISA with a lower income share and a longer term. If a student stayed with their original choice of student loan in the second round as well, we then offered them another alternative ISA in the third round – this time with a higher income share and a shorter term than the original ISA. To students who originally selected the hypothetical ISA, we separately offered both alternative ISAs at the same time.

[4] The pre-registered baseline variables for heterogeneous treatment effects included race/ethnicity (Black, Hispanic, white), gender (indicator for female respondent/recipient), household size, age (median split), marital status, risk aversion.

[5] Since we cannot follow students after the survey, we cannot shed light on potential moral hazard from the availability of insurance for students in the treatment group.

We find that both groups were equally likely to switch to the longer term ISA, with 18% of respondents selecting the longer term ISA over their original choice. Interestingly, respondents who originally chose the ISA were considerably more likely (61%) to choose the shorter term ISA compared with the respondents who chose the student loan with IDR in both the first and second rounds (17%).

We further find that treated students who originally chose the student loan were 5.1 percentage points (17%) more likely to choose the ISA option with a lower share and longer term, with no statistically significant treatment effect for those offered the alternative ISA with shorter term and higher share. For students who chose the original ISA in our base experiment, treated students were 8.6 percentage points (15%) more likely to choose the alternative ISA option with a higher share and shorter term. We find no significant treatment effects on switching toward the lower share and longer term ISA for students who originally chose the ISA over the student loan with IDR. Overall, our results suggest that the insurance framing helped reinforce student preferences over shorter maximum repayment term (12 years for ISA v. 20 years for student loan), and that students selected alternative ISA contracts in our follow-up questions in a way that reflected their stated preference between the initial choice.

Separately, we asked all students whether they would select a student loan if there were a 20% chance that the $10,000 loan they borrowed would be forgiven. We find that students who switched from a loan to an ISA in the second round where 6.4 percentage points more likely to switch back to a loan when offered the chance of student loan forgiveness. Conversely, when students who picked the original ISA were offered a loan with a chance of future debt forgiveness, the prospect of future balance reduction decreased the willingness/likelihood of switching back to the federal student loan. Taken together with our results on student preferences over alternative ISA variations compared with a student loan with IDR, our study contributes to the understanding of optimal design of loan products with income insurance features with regard to both upside protections (like maximum term or total payment amount) and downside protections (like income share).

Though focused on educational insurance markets, our paper contributes to other lines of research, including the literature on financial aid, education finance, and student debt. As the cost of higher education has risen and the purchasing power of public subsidies have fallen along with public financial support to universities (Webber, 2017), families have had to incur debt or forego consumption to afford post-secondary education. Recent research has emphasized the burden that student loans place on students (Chakrabarti et al., 2020) - including on their other consumer spending (e.g. Mezza and Sommer, 2015), "life milestones" (Mezza et al., 2020), and educational outcomes (e.g. Black et al., Forthcoming, Denning and Jones, 2021). Because the monthly payment is proportional to income, education insurance such as IDR and ISAs can hedge against the adverse effects of student loans. As such, take-up of such products, particularly among

populations where student loans have had adverse effects (e.g. students at technical or public regional colleges with higher variance in college outcomes), is important.

Many families do not apply for aid (i.e. do not complete the required financial aid forms) because of a lack of information or uncertainty of eligibility (e.g. Kofoed (2017), Bettinger et al. (2012)). Even for families that apply for aid, the protection of some assets within the Pell eligibility formula leads to less financial aid eligibility for students from disadvantaged families (Levine and Ritter, 2023) which results in higher student loan burdens and less access to selective institutions. Forms of built-in educational insurance are potentially more attractive to these students, as they automatically reallocate some of the risk from the student to the provider and may reduce uncertainty around financial aid eligibility.

Additionally, our research contributes to the behavioral literature on student take-up of financial aid programs under varied framing.[6] Abraham et al. (2020) and Marx and Turner (2019) demonstrate that framing matters for government-sponsored IDR plans and traditional student loan take-up, respectively. In this literature, researchers manipulate the students' norms, the terms, risk, and the costs communicated to students with respect to specific financial instruments. Our paper contributes to this discussion by showing that students prefer income contingent financing when we emphasize the built-in educational insurance of the ISA, with treatment effects for the insurance framing comparable in magnitude to Abraham et al. (2020). The lessons from our study are applicably not to the design of any income-contingent education financing product, and are particularly salient to ongoing policy discussions around the Department of Education's income-driven repayment plans for federal student loans.

Our paper is organized as follows. Section **??** reviews students' college financing and the prospect for education insurance in financing education. Section **??** details the experimental design of our research questions. Section **??** lays out our empirical strategy and elaborates on the data collection. Section **??** provides empirical results. Section **??** offers concluding remarks and policy considerations.

[6] Cox et al. (2020) examine why students don't choose IDR when they are worried about future income expectations. They conduct a laboratory experiment where they provide information about IDR and default students into the plan. They find that extra information and correct defaulting does increase enrollment.

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