

## **AEA Pre-registration**

Author: Justin Katz

Date: March 6, 2023

### **Overview.**

This experimental survey supplements observational findings in a working paper titled “Savings and consumption responses to student loan forbearance” (see attached draft).

The federal student loan payment pause: (i) automatically stopped payments on federal student debt; (ii) set interest rates on outstanding debt to 0%; and (iii) extended repayment timelines so that borrowers would not have to make balloon payments at any point. Given these program terms, a broad class of savings and consumption models predict that borrowers should stop making payments. I find that many borrowers (a) continue to make payments; even if they (b) have interest-bearing debt or (c) use windfalls from fiscal stimulus to repay other debt.

The goal of the survey is to better understand what drives (a-c). To that end, I recruit a sample of borrowers with federal student debt. I ask a series of questions to identify people for whom the mistakes embodied in (a-c) apply. I then ask borrowers to report their familiarity with the student loan forbearance program, answer a financial sophistication instrument (described below), subjectively justify their behavior in (a-c), and answer an experimental hypothetical. The experimental hypothetical is designed to answer the question: Does framing a financial windfall as targeting people with student debt impact student borrower debt repayment behavior?

I describe details about the experiment in the next section, titled “Experimental analysis.” This contains the bulk of the preregistered analyses. I describe at a high level how I will summarize program familiarity and subjective justifications in the final section, titled “Descriptive analysis.”

The survey text is uploaded as an attachment to this submission.

### **Experimental analysis.**

#### **Primary outcomes and explanation.**

Participants read a scenario where the US government gives an unexpected \$300 cash payment to a specific population. They then read a description of their balance sheets when they receive the cash payment, which includes income, savings account balances, credit card debt, and student loan debt. I quote the interest rate on the savings account, credit card debt, and student loan debt as an annual percentage rate. I then ask participants to indicate how much of their cash payment they would use to increase spending / savings in the following categories 12 months after receiving the payment:

- Durable goods spending (with description)

- Non-durable goods spending (with description)
- Other spending.
- Increased savings account balances.
- Increased credit card debt payments.
- Amount left unspent in checking account after 12 months.

For each participant, the key dependent variables are the amount of total spending allocated towards each category.

The experimental variation involves showing participants four different descriptions which vary (i) the population that the government targets with the payments; and (ii) the interest rate on student loans. For (i), the target population is described as either “all US households” or “households with student debt.” For (ii), the APR on student loans is quoted as either 0% or 7%.

For heterogeneity analysis, I will also collect the following information:

- Whether the person made payments on federal student debt after the federal student loan pause began in March 2020.
- Answers to a financial sophistication instrument. I describe a scenario where participants have two credit cards with interest-bearing balances. One card has a lower balance but higher APR, and the other card has a higher balance but a lower APR. I then ask participants how they would allocate a fixed budget towards repaying each card. I classify borrowers as “making a financial mistake” if they put any of their budget towards the low APR card.

Finally, I will collect demographic information on age, household income, and amount of debt in various categories.

### **Treatment conditions and experimental design.**

There are four treatment groups: (all US households, households with student debt) x (0% interest rate, 7% interest rate). Participants will be assigned to one of these four experimental conditions.

### **Randomization method.**

I will rely on randomization software in the Qualtrics survey platform. Randomization will aim for an equal number of people in each treatment group.

### **Randomization unit.**

Randomization is at the person level. Treatment is not clustered.

### **Analysis plan.**

I will estimate OLS regression specifications of the following form:

$$y_i = \alpha_g + X_i' \beta + \varepsilon_i$$

Where  $y_i$  is the fraction of the cash payment spent on a given category,  $\alpha_g$  is an indicator for person  $i$ 's group membership and  $X_i$  is potentially a vector with demographic controls. I will estimate the following versions of this regression:

- Version 1.  $\alpha_g$  is an indicator for whether person  $i$  is assigned to the “all US households” condition or the “households with student debt” condition.
- Version 2.  $\alpha_g$  is an indicator for whether person  $i$  is assigned to the 0% interest rate on student loans or 7% interest rate on student loans condition.
- Version 3.  $\alpha_g$  is an indicator for person  $i$ 's treatment group in the full 2x2 design.

I will also estimate versions of each specification where  $\alpha_g$  is further interacted with an indicator for whether participant  $i$  makes a financial mistake in the financial sophistication instrument.

Additionally, for the sample of borrowers with student debt in March 2020 who do not report being in deferment / grace on their federal student loans, I will estimate versions of each specification where  $\alpha_g$  is interacted with an indicator for whether participant  $i$  continues making student loan payments once forbearance ends.

Finally, I will report versions of each specification with and without demographic controls. Including demographic controls is intended to increase power. I will include controls for age, household income, and indicators for whether a participant has various types of debt. Age, income, and debt controls will be indicator variables designed so that the number of people in each group is roughly similar. I intentionally do not specify these groups in advance, since I do not know what the demographic distribution in my sample will end up looking like.

I will report heteroskedastic-robust standard errors and use these to conduct statistical tests.

### **Sample size.**

I have identified 941 eligible participants on the survey platform Prolific. I will send my survey to all 941 with the goal of recruiting 800 of them. The final sample size may fall slightly short of 800 depending on how many I can recruit. I will not start analyzing data until the full sample is recruited. All participants are recruited via the survey platform Prolific.

*Planned number of clusters.* 800 people.

*Planned number of observations.* 800 people.

*Sample size by treatment arms.* 200 people in each treatment condition.

*Power calculations.*

I conducted power calculations for versions 1-3 for two outcomes without controls: (i) fraction spent on student loans; and (ii) fraction spent on total spending. Standard deviations are based on pilot results and results in Coibion, Gorodnichenko and Weber (2020).

#### Versions 1 and 2:

- Fraction spent on student loan differences:
  - With control group mean of 0.08 and standard deviation of 0.28, >80% power to detect effects of >6pp.
- Fraction spent on total spending: More uncertainty over standard deviations, so conduct sensitivity.
  - Optimistic case: Control group mean of 0.24, standard deviation of 0.28, >80% power to detect effects of >6pp.
  - Pessimistic case: Control group mean of 0.24, standard deviation of 0.4, >80% power to detect effects of >8pp.

#### Version 3:

- Fraction spent on student loan differences:
  - With control group mean of 0.08 and standard deviation of 0.28, >80% power to detect effects of >8pp.
- Fraction spent on total spending:
  - Optimistic case: Control group mean of 0.24, standard deviation of 0.28, >80% power to detect effects of >8pp.
  - Pessimistic case: Control group mean of 0.24, standard deviation of 0.4, >80% power to detect effects of >12pp.

#### **Descriptive analysis.**

In addition to running the experiment described above, I will also analyze data on whether and why borrowers continued to make payments on their federal student debt after the start of the federal student loan forbearance program. I also include questions to evaluate borrower familiarity with program terms, and subjective explanations for behavior that is not optimal from the perspective of standard lifecycle savings and consumption models.

I will conduct two types of analysis with this additional data. First, I will examine program familiarity, how stimulus checks were spent, and performance on the financial sophistication instrument, splitting the sample based on whether or not borrowers with federal student debt continued to make payments once forbearance began. Second, I will report subjective justifications for continuing to make federal student loan payments after forbearance, as well as subjective justifications for non-optimal behavior, for borrowers who continued to make federal student loan payments after forbearance began.

This analysis is descriptive, so I will not pre-register any specific hypotheses.